Hazardous Materials Incident Management in Washington State

August, 1984

WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY

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PREFACE

This is essentially a descriptive study, which is intended to clarify public policy issues in a complex area, but which stops short of making recommendations. It is intended to provide the basic information about hazardous materials incident management, and a durable analytical framework, so that legislators and legislative staff can better decide future efforts whether, where, and how to pursue policy development.

John Erickson
Policy Analyst
Hazard Materials Incident Management
Study

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Washington State Senate

FORTY-EIGHTH LEGISLATURE
1982-1983

COMMITTEES

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SESSIONS SERVED

HOUSE:	1965, '65 EX.
	1967, '67 EX.
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	1971, '71 EX., '72 EX.
SENATE:	1973, '73 EX, '74 EX.
	1975, '75 EX., '76 EX.
	1977, '77 EX.
	1979,
	1980,
	1981,
	1982,
	1983

January 5, 1984

Leonard Mandelbaum
Washington State Institute for Public Policy
The Evergreen State College
Olympia, Washington 98506

Dear Mr. Mandelbaum:

Responses to a questionnaire sent to city and county elected officials indicate a great concern for problems involving hazardous materials. Sixty-seven percent of the respondents believe that coordination of state and local jurisdictions is inadequate to deal with an accident involving hazardous and toxic materials, should such an accident occur.

It could be of great benefit to us in dealing with this problem to know what present policies are in handling hazardous materials incidents. We know that the Department of Ecology has a large responsibility in terms of clean-up, that the State Patrol is designated the first responder in many instances, that the Department of Agriculture is responsible for pesticide regulation, and local health departments are involved when water supplies become endangered.

We need to know where there are overlaps in jurisdiction and when no agency has clearly defined authority. Questions to be answered would include: In a minor incident, one involving enough pesticide to be a potential problem to a local water supply, for example, which agencies are notified and in what order? If the incident is immediately life-threatening, what is the procedure? If the incident is potentially life-threatening to a large population, what is the procedure? In addition to the narrative outlining the procedures, graphics illustrating them would be of great help to us.

I understand that you have discussed this project with senate caucus staff and that they would be working with you.

Sincerely,

Senator R. Ted Bottiger

cc: Senator George Fleming

I. INTRODUCTION TO HAZARDOUS MATERIALS INCIDENT MANAGEMENT SYSTEM

This is a descriptive study of hazardous materials incident management in Washington State. Its objectives are consistent with the request of Senator R. Ted Bottiger:

1. To describe present policies and procedures for hazardous materials incident management;

2. To identify potential gaps and overlaps in present policy; and

3. To identify the major procedural issues which arise because of policy gaps or overlaps.

In his letter, Senator Bottiger refers both to "accidents involving hazardous and toxic materials" and "hazardous materials incidents." In this study, the term hazardous materials incident is used as it is defined in Chapter 70.136 RCW,: an incident creating a danger to persons, property or the environment as a result of spillage, seepage, fire, explosion or release of hazardous materials, or the possibility thereof."

This broad definition includes not only the actual release of hazardous materials, but also their potential release. It includes not only an obvious spill, but also less-than-obvious seepage or dumping. It requires consideration of not only materials which are hazardous because they are toxic, but also those materials which are flammable, explosive, or highly corrosive.

Hazardous materials incident management is complex, in part, because of the countless number of hazardous materials in use. From a public policy perspective, authority and responsibility for public agency involvement derives from an enormous range of state, local, and federal legislation providing for environmental protection, public health, and public safety. Since the subject is so complex, the major contribution of this study is to sort out the puzzle of interrelated laws and agency procedures, to produce a clear and coherent picture of the present hazardous materials incident management system. The resulting picture is fairly detailed, but it provides the order and balance which allow the reader to focus on one manageable area at a time.

HAZARDOUS MATERIALS INCIDENT RESPONSE:

To identify each agency's role in hazardous materials incident management it helps to see that hazardous materials incidents are managed through two sets of public policies and procedures:

* Those which address the management of spilled hazardous materials to protect the environment or public health (spill management);

* Those which address the management of the emergency aspects of an incident, such as the evacuation of nearby residents from the danger area (emergency management).

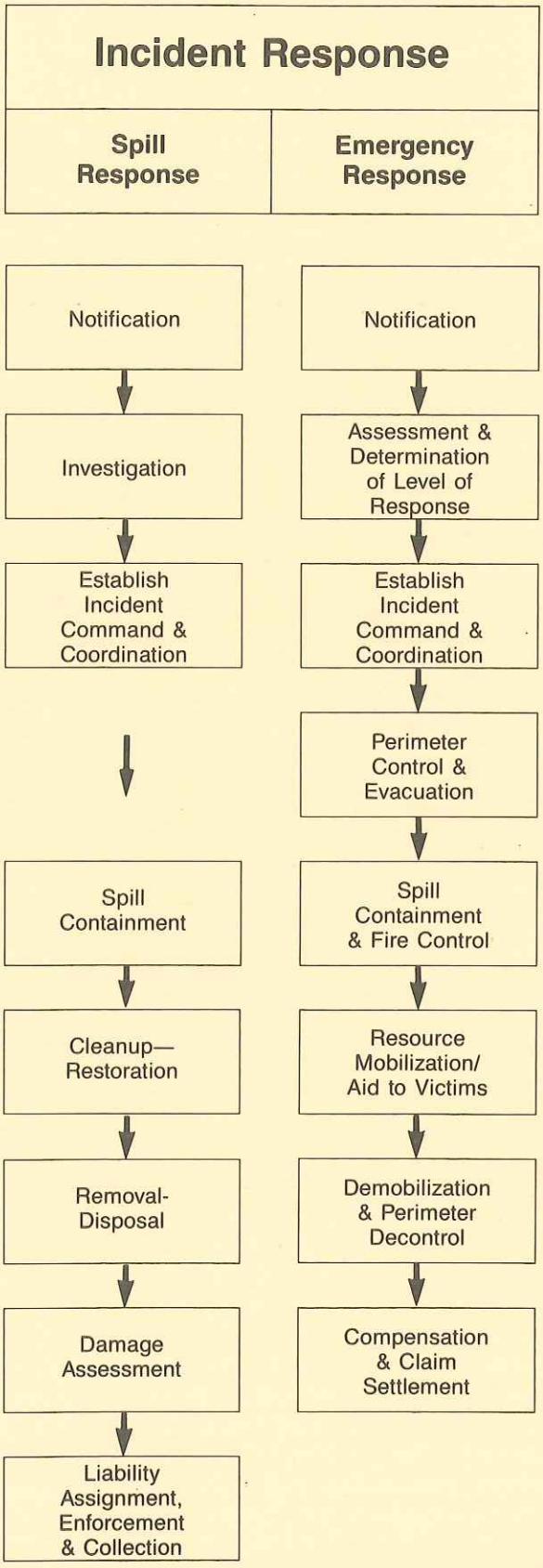
This distinction between "spill management" and "emergency management" helps to clarify different agencies' roles in the overall "incident management" system. Figure 1 illustrates the stages of incident response and the major responsibilities of public agencies in response to incidents. The activities under Spill Response and Emergency Response are shown as parallel chains of events, each beginning with the Notification stage, and continuing down in rough chronological order. (In practice, one stage of response may continue after the next stage has begun. For example, a spill response investigation may continue through the Cleanup, Damage Assessment, and Enforcement stages. In emergency response to an incident, Perimeter Control and Evacuation may continue while Spill Containment or Fire Control efforts are underway.)

Spill Response and Emergency Response activities are not conducted in isolation from one to another. For example, Notification of an incident to a spill response agency may come from an emergency response agency, or vice versa. (Much of this study is devoted to examining how present policies and procedures define coordination requirements within and between spill response and emergency response.)

The emphasis in Spill Response is on cleaning up the spill. Authority for spill response to hazardous materials incidents is generally tied to regulatory legislation, and the agencies involved are generally those which regulate hazardous materials to protect public health and the environment. Public policy generally requires the spiller to pay cleanup costs, and in most cases, the spill response agency has authority to enforce payment. Since the spill may result from a violation of regulations designed to prevent spills, the spill response effort is likely to include an enforcement action.

The emphasis in Emergency Response is on managing the emergency, which may include the hazardous duty of a fire fighter to protect the public from the immediate threat in a hazardous materials incident. Keeping bystanders out of harm's way and evacuating nearby residents may also be part of the emergency response effort. The authority for

Figure 1: **Stages of Incident Response**



emergency response generally derives from broad public safety legislation, or from specific legislation providing for emergency or disaster management.

Emergency response agencies include fire departments, law enforcement agencies, and emergency management agencies.

OVERVIEW OF PUBLIC AGENCIES WHICH MAY BE INVOLVED IN INCIDENT RESPONSE:

1. Spill Management Agencies: The public agencies most commonly identified with spill response in Washington State include:

   Washington State Department of Ecology: WDOE has broad spill response authority for most hazardous materials.

   U. S. Environmental Protection Agency: EPA has the primary spill response role for PCB incidents and becomes involved in WDOE's response to major spills.

   U. S. Coast Guard: The USCG has the lead spill response role on navigable waters.

   Washington State Department of Social and Health Services: DSHS is the primary spill response agency for pesticide and radioactive materials incidents. DSHS could also be involved if a local water supply were jeopardized. (In theory, DSHS could invoke its broad public health protection authority to respond to any hazardous materials incident threatening public health. But in practice, DSHS relies on WDOE and EPA when pesticides or radioactive materials are not involved.)

   Washington State Department of Agriculture: WSDA regulates the commercial use of pesticides. In general, WSDA requires DSHS to be notified of pesticide spills, at which point DSHS becomes responsible for public health protection, and either DSHS or WDOE would assume cleanup authority. WSDA then generally continues to investigate the incident to determine whether enforcement action should be taken against a pesticide handler's license.

Other agencies may also have spill response roles. These agencies' roles in spill response may be less well known, but are also important. They include:

   Washington State Office of the Attorney General: AG may become involved in the latter stages of the spill response effort if an enforcement action is contested in court. The AG would be responsible for bringing a court case against the spiller if a public agency sought compensation for damages to a public resource (e.g., Fisheries). The AG could also have responsibility for litigating on behalf of private

businesses for loss of profits or impaired earning capacity resulting from a spill.

Washington State Department of Transportation: DOT may have a clean-up role in the event of a spill on its highway.

Washington State Department of General Administration: GA is responsible for assessing spill damages to state-owned land and facilities. Other state agencies would conduct their own damage assessment from spills affecting resources they managed (e.g. Department of Natural Resources or Fisheries).

Local boards of health have authority to act to protect public health from the potential effects of a hazardous materials spilling particularly if drinking water supplies are endangered. In practice, this authority is limited by local resources.

Local water systems are responsible for protecting their drinking water supplies and for taking corrective action, in concert with DSHS, if their water is in danger of contamination.

U. S. Nuclear Regulatory Commission: NRC requires that DSHS notify them of radioactive materials spills, and the NRC maintains a national one-number nuclear incident reporting system. The NRC could become directly involved in responding to a major radiation spill.

Washington Utilities and Transportation Commission: WUTC is responsible for investigating and bringing enforcement actions for violations of hazardous materials transportation regulations in both road and rail incidents.

Washington State Patrol: WSP has cleanup authority for hazardous materials incidents on state and interstate highways.

2. Emergency Management Agencies: The public agencies most commonly identified with emergency response to hazardous materials incidents include:

Washington State Department of Emergency Management:
DEM has broad emergency management coordination authority in the event that an emergency or disaster involving hazardous materials is beyond the local government's response capability. This authority includes mobilizing various state agencies' resources to aid the victims of an incident or evacuees. Even when the emergency aspects of an incident are with local government's capabilities, DEM provides a statewide telephone number for reporting hazardous materials incidents. DEM assists local emergency responders in identifying spill response resources (state, federal, and private), and in notifying the appropriate spill response agencies.

DEM also assists local departments of emergency management in preparing emergency response plans for hazardous materials incidents, and reviews those plans for conformance with its own.

Local departments of emergency management: Local DEM roles generally involve the coordination of local resources for emergency response to a hazardous materials incident. The local DEM is also responsible for assisting the state DEM in coordinating a combined local-state (or local-state-federal) response to a major incident.

Washington State Patrol: WSP has broad authority for the management of a hazardous materials emergency on state or interstate highways.

County sheriff's offices and city police departments: Local law enforcement agencies are frequently the first to respond to a hazardous materials incident, particularly if it involves a transportation accident or dumping incident on city or county roads. Local law enforcement agencies generally are responsible for conducting perimeter control and evacuation efforts within their local jurisdictions.

Local fire departments generally have the hazardous duty of trying to manage the release of a hazardous material until it no longer poses an immediate threat to the public. Different fire departments have different levels of safety equipment and training, so each fire department's capacity to control a spill or fire involving hazardous materials varies.

Additional agencies have less well known emergency response roles:

Federal Emergency Management Agency: FEMA has authority to provide federal-level assistance to disaster victims or evacuees, which may be beyond state government resources. (For example, extended-term relocation housing for evacuees near a major spill.)

U. S. Region 10 Regional Response Team: Region 10 RRT is composed of representatives of federal agencies in Seattle, including EPA and the Coast Guard. This group is designed to coordinate federal resources in the event of a major emergency or disaster.

Department of Social and Health Services: DSHS would have lead emergency response role at each stage in the event of a major incident at a fixed nuclear facility. (For example, if there was a release of a radioactive airborne plume, DSHS would follow the plume and estimate its health consequences to determine whether and where evacuation would be required.)

Other state agencies would lend their resources to emergency management efforts, particularly to assist with evacuation or temporary relocation efforts in the event of a disastrous incident. These agencies would include the Parks and Recreation Commission, the Department of Game, DOT, and the Department of Fisheries.

Figure 2, illustrates at what point in the system each agency could be involved in a hazardous materials incident. (No single incident would ever be likely to require the response of every agency.)

Figure 2 also shows that some agencies' involvement is limited to certain stages of the incident response process. For example, WUTC may be involved in spill investigation and enforcement actions, but not in spill cleanup or disposal. DSHS may be involved in all aspects of spill response except enforcement and collection.

In addition, Figure 2 illustrates that some agencies may have both spill response and emergency response roles, e.g., local fire departments, the U.S. Coast Guard and the Washington State Patrol.

DEFINING EACH AGENCY'S JURISDICTION

It will come as no surprise, given the number of agencies involved in hazardous materials incident response, that a wide range of public policies need examining to determine what jurisdiction has been assigned to each agency. Since a major purpose of this study is to identify jurisdictional gaps and overlaps, it is helpful to focus the review of present policies so that jurisdictional gaps and overlaps are revealed. The most direct way to group different policies for analysis is to look at the potential hazardous materials incident the way an agency would, according to the basic characteristics or contingencies, of the incident:

1. The hazardous substance spilled (or in imminent danger of being spilled);

2. the size of the spill;

3. the geographic location of the incident;

4. the potential effects of the spill (or threatened spill) on, for example, drinking water supply or public health;

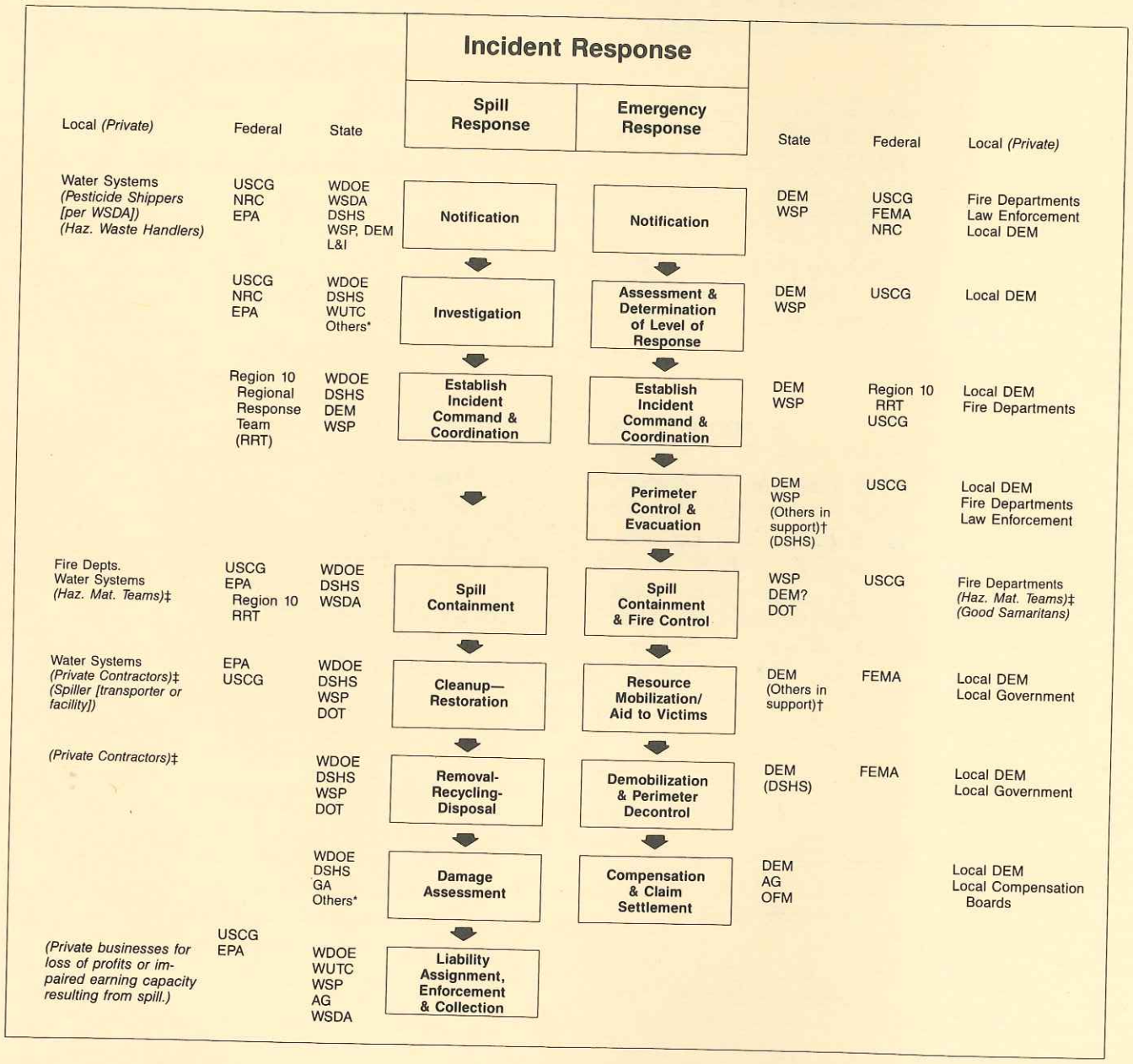
5. the type of site at which the incident occurs (whether in transport, at a chemical facility, etc.).

The text of the Part II cites and briefly summarizes the jurisdiction for hazardous materials incidents assigned each agency through state and federal law, administrative code and formal inter-agency

Figure 2: **Agencies Potentially Involved at Each Stage of Incident Response**

Figure 2 illustrates where each agency could be involved in a hazardous materials incident. Figure 2 also shows that some agencies' involvement is limited to certain stages of the incident response process. For example, WUTC may be involved in spill investigation and enforcement actions, but not in spill cleanup or disposal.

DSHS may be involved in all aspects of spill response except enforcement and collection. In addition, Figure 2 illustrates that some agencies may have both spill response and emergency response roles, e.g., local fire departments, the U. S. Coast Guard and the Washington State Patrol.



***Note:** Other state agencies have statutory responsibilities to respond to hazardous materials spills affecting the public resources they manage (e.g. DNR, Dept. of Game, Dept. of Fisheries). See also Appendix C-5-5 for legal analysis.

†Note: See Appendix F-1 for a partial list of private spill response and cleanup contractors.

‡Note: DEM has memoranda of agreement with several state agencies to provide support in the event of a disaster, pursuant to the Washington State Emergency Operations Plan or the Disaster Preparedness Plan. (Similar memoranda of agreement are proposed for hazardous materials emergency response, pursuant to the current draft of the Washington State Contingency Plan for Hazardous Materials Emergencies.) These agencies include: DOT, State Fire Marshal, Parks and Recreation Commission, Dept. of Game, Dept. of Fisheries.

agreement or contingency plan. Part III takes three actual incidents and demonstrates graphically how various agencies in Washington State respond to events of varying degrees of threat. (Key local government jurisdictions have also been identified, although no systematic survey of current municipal codes has been conducted.) Although a close reading of the text is advised to see precisely what jurisdictional lines have been drawn, it is possible to sketch quickly the general shape of current policy.

1. Agency jurisdictions defined by the hazardous substance spilled (or in imminent danger of being spilled):

Spill Response by Substance:

Hazardous wastes and WDOE has response authority for incidents involving any substances which they regulate as hazardous wastes under state law or as hazardous substances under federal law. (If there is an imminent hazard to the environment or public health, their response role is not limited by the amount of the substance or whether it is technically a waste, as opposed to a commodity.)

EPA has chief responsibility for PCB incidents.

WSDA requires pesticide spills to be reported to DSHS, which has response authority to protect public health and ensure cleanup. WSDA investigates to enforce state and federal pesticide use regulations.

DSHS responds to radioactive materials spills.

2. Agency jurisdictions defined by the size of the spill:

Spill response by size:

EPA takes the lead role from WDOE in response to a spill of more than 1,000 gallons.

Emergency response by size:

The state DEM assumes a local department of emergency management's coordination authority if an incident were beyond the scope of local resources.

A hazardous materials disaster requiring extensive federal involvement would trigger the Region 10 Regional Response Team of appropriate federal agencies.

3. Agency jurisdiction defined by the geographic location of the incident.

Spill Response by geography:

WDOE response to an incident is from one of its four regional offices, depending on the county involved. The USCG Captain of the Port of either Seattle or Portland has response authority for spills on coastal waters.

Emergency Response by Geography:

The WSP has hazardous materials incident command authority on state or interstate highways. Local Law enforcement agency and fire department jurisdictions generally coincide with political subdivisions of the state. Some fire departments have hazardous material response agreements with other fire departments. Some political subdivisions' departments of emergency management may have detailed hazardous materials incident management contingency plans for coordinating local response.

4. Agency jurisdictions defined by the potential effects of the spill.

Spill response:

WDOE has general authority to act to protect water from pollution (in addition to its authority to respond to incidents involving specific substances). DSHS and local water systems have specific responsibilities for protecting drinking water. DSHS and local public health agencies have general authority to act to protect public health.

Emergency Response:

The state DEM has planning and response authority, in conjunction with local departments of emergency management, for any incident which "demands immediate action to preserve public health, protect life, protect public property, or to provide relief to any stricken community overtaken by such occurrences.

5. Agency jurisdictions defined by the type of site at which the incident occurs:

Spill Response:

WDOE requires hazardous waste facilities to prepare their own specific spill response plans (which must include not only notification of WDOE in the event of a spill, but also procedures for working with local

police, fire departments, emergency management agencies, and hospitals). WDOE further requires the hazardous waste facility to specify the agreed-to response roles of those agencies, and file these plans with those agencies.

WUTC regulates road and rail transport of hazardous materials. WSP enforces WUTC road transport regulations, and has the authority to open and inspect trucks carrying hazardous materials.

POLICY GAPS AND OVERLAPS: IDENTIFYING AND CLARIFYING THE ISSUES

The final section of this study (Part IV) systematically examines potential gaps and overlaps in public policy for hazardous materials incident management. A brief overview of the major findings are summarized below.

Once again it is helpful to divide a large subject into manageable portions, by identifing policy gaps and overlaps in three distinct areas: within spill response, within emergency response, and in the coordination of spill and emergency response.

Apparent gaps in spill response policy:

Washington Utilities and Transportation Commission has authority to inspect loading areas of common and contract motor carriers, but not the loading areas of private motor carriers. A private motor carrier is a truck that is owned and operated by the same company that loads and unloads it. Grocery chain trucks are an example. Thus, WUTC is unable to detect problems that might result from careless loading and unloading practices of private motor carriers.

Although WSDA licenses commercial pesticide applicators, the regulations under which that agency operates do not permit WSDA to require applicators to pay for clean-up of pesticide spills. WSDA recently dropped as unenforceable its requirement that pesticide dealers post a notice of who an applicator should notify in the event of a pesticide spill.

Apparent overlaps in spill response policy:

Both WDOE and DSHS have cleanup authority and damage assessment responsibility for spills of certain pesticides. Both WDOE and WSDA have responsibility for disposal of contaminated material (water, soil) that results from a spill by a WSDA licensed pesticide applicator.

Both WDOE (or EPA) and the owner or manager of a public resource have the authority and responsibility to conduct a damage assessment of an incident that causes damage to that public resource. The Departments of Fisheries, Natural Resources and Parks and Recreation are examples of agencies that overlap the damage assessment responsibility of WDOE.

Frequently more than one spill response agency is responsible for investigation of a hazardous material spill. However, this duplication is necessary because each agency involved must conduct its own investigation to comply with its enforcement responsibilities.

Apparent gaps in emergency response policy:

Local responsibility for assessing emergency response requirements—particularly for perimeter control and evacuation--may not be clear for local jurisdictions that have not prepared emergency response contingency plans. It is important to note that when a local jurisdiction has the resources to handle a hazardous materials incident, control of that incident remains with local authorities. Only when the size or scope of the incident outstrips the local government's ability to manage the situation does the state's Department of Emergency Management assume control.

In "good Samaritan" legislation, local jurisdictions are encouraged to designate "incident command agencies" in preparation for hazardous materials emergencies. The purpose of this legislation was to clarify the conditions under which a private company could receive immunities from liability for helping control a hazardous materials emergency. Only when a company provides help at the request of the "incident commander" are good Samaritan immunities guaranteed. However, the extent of this "incident command" is not clearly defined in the legislation. Different localities may have interpreted this legislation in different ways and taken it as authorization to confer various powers upon their "incident commander." Although no survey of local "incident command agencies" has been conducted for this study, the authority implied in this legislation may overlap that granted through emergency management legislation.

The Department of Emergency Management has been given the impressive task of coordinating all state and local emergency response activities. Once accomplished, this coordination of activities should eliminate many of the jurisdictional and procedural duplications and omissions. It is a complex task which requires the cooperation of local jurisdictions. Specifically, DEM assists local governments in developing emergency response plans and reviews those plans to assure that the local and state plans are compatible. Local jurisdictions have been encouraged to designate an on-scene incident command agency. But by April of 1984, only 81 local jurisdictions had filed with the state DEM (9 counties, or county DEMs, 29 cities and towns, 42 fire districts and one port district). Presently the Commission for Vocational Education provides plans and some training for dealing with the emergency aspects of a hazardous materials incident, through its Fire Service Training Division.

Apparent Issues in the coordination of spill response and emergency response policies:

The notification system for reporting hazardous materials incidents for emergency management purposes involving a statewide single-number

call to DEM is not always well-suited for spill response reporting. Spill response agencies need notification of hazardous materials incidents which may not constitute emergencies in the perception of an emergency responder. In addition, the kinds of information about an incident required by an emergency response agency is apt to be somewhat different than what a spill response agency requires. WDOE maintains its own 24-hour spill reporting system through its four regional offices.

Spill containment is within the authority of both spill response agencies and emergency responders, although each group tends to approach the problem differently. The spill responder is generally not expected to jeopardize his own safety to contain a spill. For fire departments, some hazardous duty is expected, although personal safety is still of prime importance. The fire department is apt to be more concerned with controlling the immediate effects of the spill than with the potential long-term effects of the spill on public health or the environment.

Both DEM and the spill response agencies (notably WDOE and DSHS) have prepared contingency plans for responding to hazardous materials incidents. Neither WDOE or DSHS has yet adopted memoranda of agreement with DEM on its contingency plan.

A BROADER VIEW OF THE HAZARDOUS MATERIALS INCIDENT MANAGEMENT SYSTEM

To some extent, this kind of study of particular issues in hazardous materials incident response can directly contribute to improving incident response. But for the most part, these improvements need to come from within the system itself, as a result of on-going evaluation and planning efforts. Figure 3 illustrates a broader view of the incident management system.

The first thing to notice about this view of the Incident Management System is that it complements the Prevention of Hazardous Materials Incidents. When an incident occurs and incident management is required, that can be seen as a breakdown of the prevention system. Through both Legislation and Executive and Agency - Level Resource Allocation, choices are made about how much to invest for incident prevention, and how much for incident management.

Program Planning and Development for incident management can be seen as beginning at the agency level. Within the broad context of an agency's overall mission, specific contingency planning is conducted. But how well these individual agency emergency response and spill response are integrated with each other, at the federal, state, and local levels, will greatly affect how well response to a given incident will be coordinated. At present, the Governor's Hazardous Materials Advisory Board has a mandate to review and promote integrated contingency planning for spill response and emergency response agencies, as well as the private sector. DEM, which has the mandate to prepare

integrated emergency response plans, chairs and staffs this advisory board.

Training

Through training, agency representatives can not only gain essential personal safety and incident management skills, but also sensitivity to the roles of other agencies in the incident management system. The Fire Service Training Division of the Commission for Vocational Education is already involved with training for fire departments and it appears to have the authority to assume a broader intergovernmental training role. A new fire service training center will open in North Bend this month. However, the Commission interprets its authority as limited to serving public agencies, thereby excluding private hazardous materials response teams from training that would help private and public responders work together better.

DEM also has the authority to plan and conduct training programs for the emergency management of hazardous materials incidents.

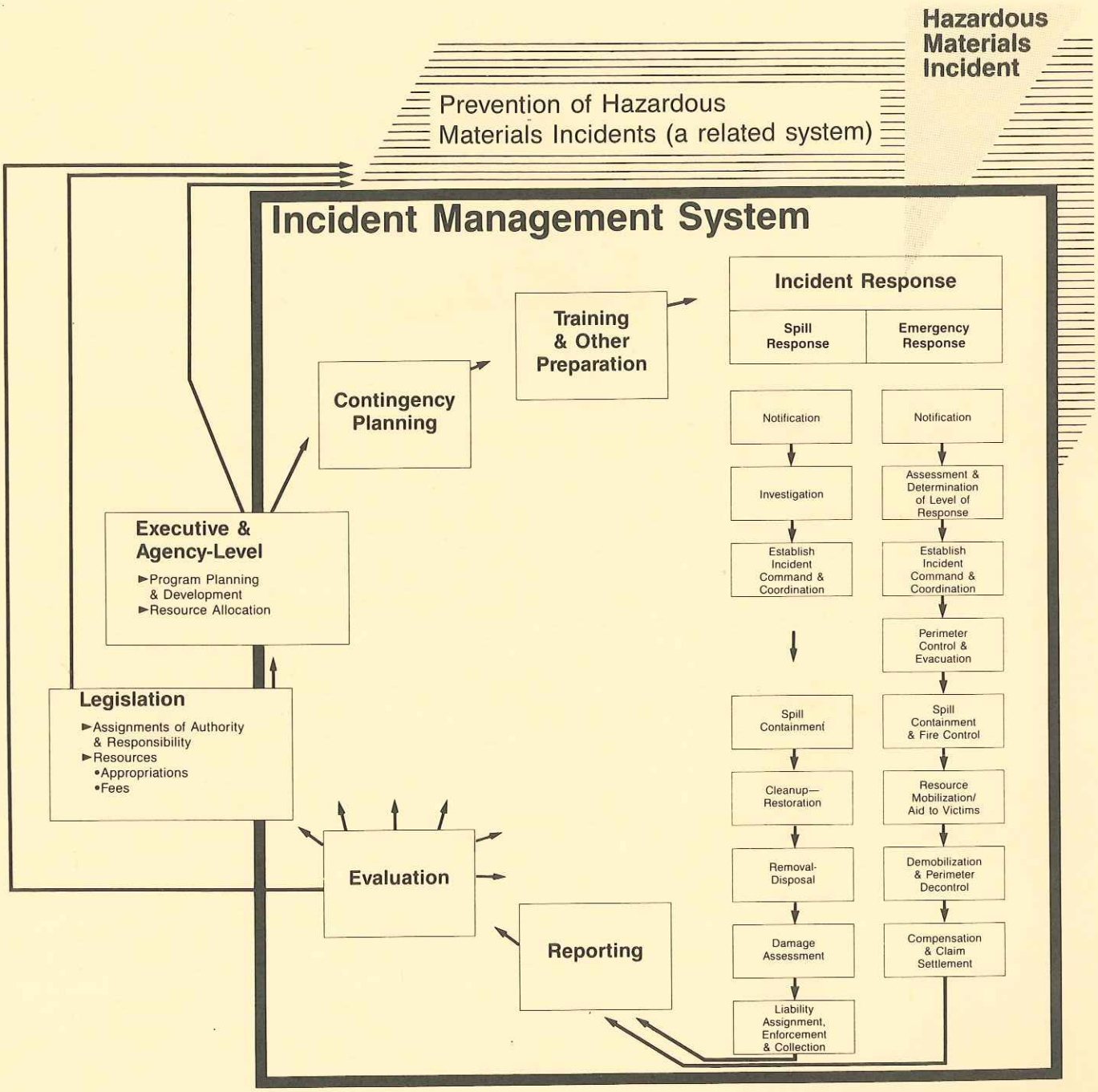
Other preparations for incident response include specialized equipment. This ranges from personal safety gear to sampling, measurement, and testing equipment.

Reporting the results of incident response activities, as well as planning and training activities, is presently the weakest link in the system. Who is doing what is not well known. Even the contingency plans are not in wide circulation.

Evaluation Inter-agency evaluation of each part of the system is fairly haphazard. The Governor's Hazardous Materials Advisory Board has begun meeting, but it has not yet produced a report. To date, the Puget Sound Council of Governments has been the most visible contributor to inter-agency incident management evaluation, through its large conferences and 1981 Hazardous Materials Study for the Central Puget Sound Region. The training recommendations in this P.S.C.O.G. study are still among the best available and are only now beginning to be implemented.

This conceptual framework for viewing the hazardous materials incident management system, as illustrated by Figure 3, provides a useful guide for sorting out the present tangle of policies and procedures which define each agency's role. Now that a general understanding of the overall system is complete, this introduction is complete. Part II examines current public policies in detail.

Figure 3: **Hazardous Materials Incident Management System**



II. PRESENT PUBLIC POLICIES DEFINING WHICH AGENCIES ARE RESPONSIBLE FOR WHAT KINDS OF HAZARDOUS MATERIALS INCIDENTS:

Public policies, in the form of laws, administrative codes, and formal interagency agreements, assign hazardous materials incident response authority to a variety of agencies, depending on the nature of the incident. As Senator Bottiger wrote in his letter requesting this study, "it could be of great benefit to us in dealing with this problem to know what present policies are in handling hazardous materials incidents." This section of the report cites and summarizes the key parts of these public policies. In order to present a more coherent picture of the complexity of the policies and agencies involved, this review is organized according to the basic characteristics of any incident.

For a particular incident, which agencies need to respond can be determined by asking: "What substances are involved? How much? Where is it? What might the effect be? What kind of site is it?" To varying degrees, the agencies involved in hazardous materials incident response treat the possible answers to each of these questions as contingencies, and prepare their response procedures in advance, in the form of contingency plans. Within the framework of the answers to these five basic questions, comprehensive contingency plans for incident response can be prepared, as long as the underlying policies are comprehensive. In order to make the connections between policies and procedures more visible, and in order to divide the complex of present policies into simpler components, five analogous questions are answered in this section, one at a time:

1. How do present policies define which agencies are responsible for which substances?

2. How do present policies define which agencies are responsible for different sizes of incidents?

3. How do present policies define which agencies are responsible for incidents in different geographic locations?

4. How do present policies define agencies' responsibilities for different effects of an incident?

5. How do present policies define agencies' responsibilities for different types of sites at which an incident might occur?

A. SUBSTANCE: Policies Defining Which Agencies Have Responsibilities For Which Substances

Hazardous materials are defined in different way for different agencies. Each agency's statutory authority for response to hazardous materials incidents, when that authority is based on the type of hazardous material, is summarized below.

Current public policies provide for response from either WDOE, EPA, DSHS, or WSDA to the entire range of hazardous materials potentially involved in an incident. WDOE has incident response for most hazardous materials. (EPA and USCG authority take precedence for some larger incidents and for incidents on coastal waters; these policies are described later under size and location.)

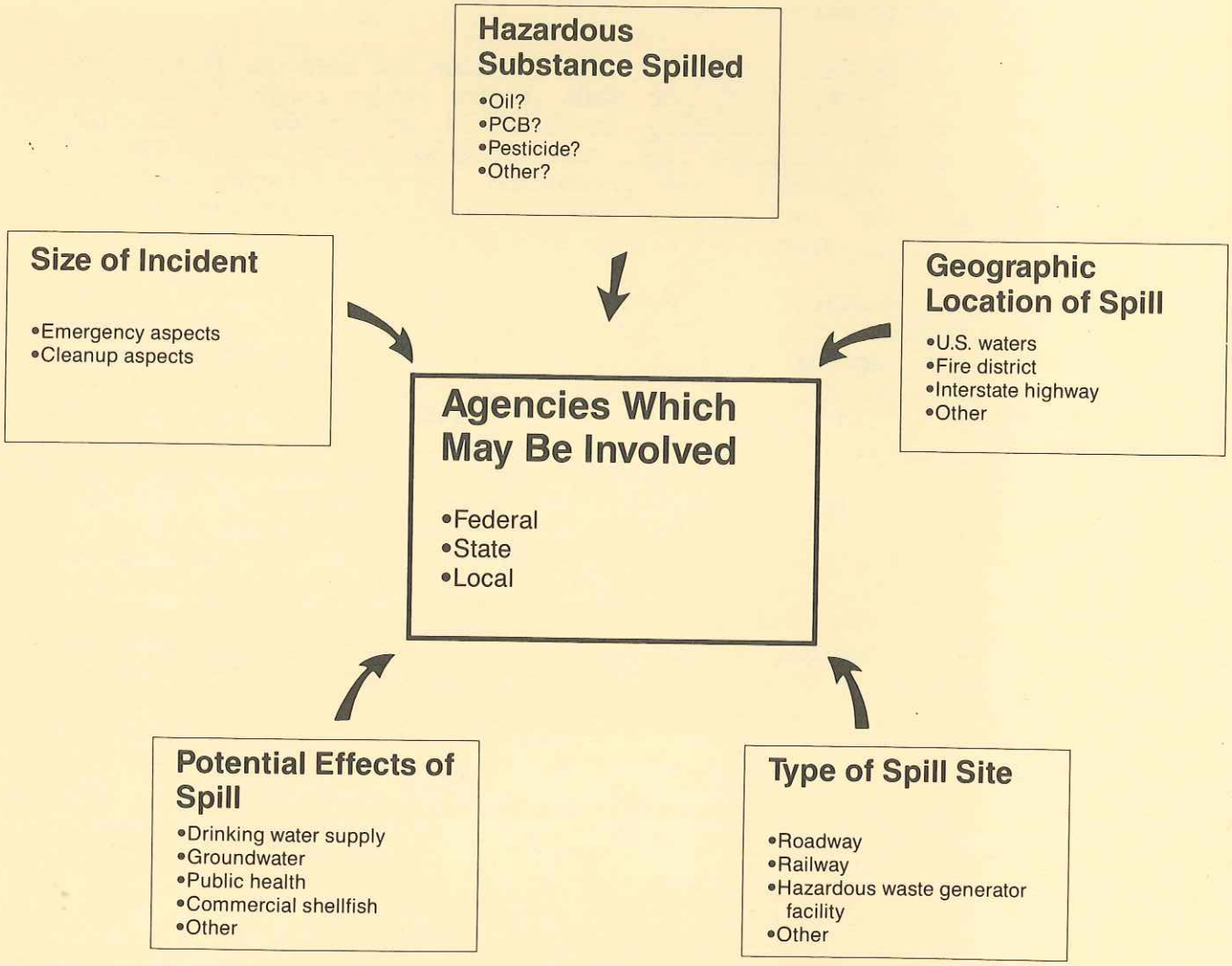
Pesticide incident response authority is more fragmented. DSHS has the central role, but has limited cleanup and removal authority, resulting in WDOE involvement. WSDA, as the regulator of pesticide use, has incident response roles in the notification of DSHS and the enforcement of potential violation of WSDA regulations.

Radioactive materials incidents are clearly DSHS responsibility. However, DSHS has limited spill cleanup authority and capacity. (In a very large incident NRC or FEMA may become involved as described under size.)

(Emergency response authority is not discussed under substance, but under size, location, and type of spill site.)

1. WDOE Substances: Where there is the potential for the discharge or release of a hazardous substance which threatens public health or the environment, the Department of Ecology may assume cleanup authority under Section 173-303-050 WAC. WDOE is empowered to "coordinate responses to hazardous substances accident and spill incidents" through Section 70.105A.060 RCW. For spill response and coordination purposes, "hazardous substances" are defined in Section 173-303-040(38) as "any liquid, solid, gas, or sludge, including any materal, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical or biological properties . . ." of hazardous wastes. (WDOE regulation of hazardous wastes is otherwise limited to specific quantities or concentrations of waste materials, and does not include commodities.) These substances are defined in accordance with Chapter 70.105 RCW, "Hazardous Waste Disposal."

Figure 4: **Contingencies Determining which Public Agencies Have Hazardous Materials Incident Response Authority**



a. Dangerous wastes are defined as those which:

i. "have short-lived, toxic properties that may cause death, injury or illness, or have mutagenic, teratogenic or carcinogenic properties;" or

ii. "are corrosive, explosive, flammable or may generate pressure through decomposition or other means."

b. Extremely hazardous waste is distinguished to allow for more stringent regulation of those substances. Extremely hazardous waste is defined as:

i. fitting the description of dangerous waste, as above; and as

ii. persistent, "highly toxic to man or wildlife," and "may be concentrated by living organisms through a food chain or may affect the genetic make-up of man or wildlife."

2. EPA Substances: P.C.B.s (polychlorinated biphenyls) and asbestos are the only two containment and cleanup substance responsibilities reserved to EPA in Washington State. EPA responsibility for these substances is defined under the Toxic Substance Control Act which does not provide for delegation of federal authority to WDOE.

3. Department of Agriculture/FIFRA Substances: Pesticide Incident Prevention and Enforcement

The Washington Department of Agriculture has broad regulatory authority over pesticides through Chapter 15.58 RCW, the Washington Pesticide Control Act, and Chapter 17.21 RCW, the Washington Pesticide Application Act. The WSDA licenses pesticide dealers and both commercial and public pesticide applicators, and has enforcement powers through the suspension or revocation of licenses. This power extends to enforcing pesticide labeling requirements specified by the Federal Insecticide, Fungicide and Rodenticide Act, through the incorporation of FIFRA regulations in Section 9-118220 WAC, which requires that "No person shall handle, transport, store, display or distribute pesticides in such a manner as to endanger man and his environment or to endanger food, feed or any other product that may be transported, stored, displayed or distributed with such pesticides." Two particular provisions of this rule illustrate the WSDA's role in defining how pesticide handlers are required to respond to spills:

a. Notification of Shipper: "Instances where leakage or spillage of highly toxic pesticide in transport has occurred, the shipper of the pesticides shall be immediately notified by the vehicle owner or his agent for instructions concerning the best method to be employed for the removal of the contamination."

b. Notification of DSHS: "All pesticide accidents must be reported to the Washington State Department of Social and Health Services."

4. DSHS Substances:

a. Pesticides: DSHS is authorized by Chapter 70.104 RCW, "Pesticides--Health Hazards" to "investigate all suspected human cases of pesticide poisoning and, in case of pesticide emergencies, to take appropriate action," including:

i. assuming control of property;
ii. disposition of hazardous substance;
iii. preventing further contamination; and
iv. restoring any property to a non-hazardous condition.

Pesticides are defined to include all herbicides, rodenticides, insecticides and nemoticides as well as whatever additives are used with the active ingredients to aid in their application or effect, regardless of whether these additives are toxic in themselves. This definition includes pesticides in commercial, public, and household use.

Whoever has control of the pesticide involved in the pesticide emergency is required by Chapter 70.104 RCW to immediately notify DSHS "by telephone or the fastest possible method."

DSHS is also required by Chapter 70.104.040 RCW to "work closely with the department of agriculture on the enforcement of this chapter and keep it appropriately advised," and to utilize the pesticide industry's services in minimizing the effect of pesticide emergencies.

b. Radioactive Materials: DSHS is the state's radiation control agency and is authorized by Chapter 70.98 RCW to license and regulate the non-federal uses of radioactive materials, chiefly at medical facilities, uranium milling operations and the low-level nuclear waste facility at Hanford.

i. DSHS licenses specific facilities and therefore responds to incidents at these facilities. It distributes a Radiation Emergency Handbook to its licensees and to local police and fire departments statewide, to assist those organizations in planning, preparation and response. DSHS requires posting of 24-hour notification phone numbers at all its licensed radiation facilities, through Section 402-24 WAC. (High-level nuclear waste management is beyond the scope of this study. However, DSHS would have a major role on deciding the state's response to an accident at a nuclear power plant).

ii. The DSHS Radiation Control Section would respond to transportation accidents involving radioactive materials, to investigate for compliance with packaging and shipping regulations. Section 402-19-500 WAC requires facilities to ship radioactive materials in accordance with U.S. Department of Transportation regulations.

B. SIZE: Policies Defining Which Agencies Are Responsible For "Major" Incidents, And Which For "Minor" Incidents

Depending on the size of a spill, EPA or the USCG may assume what would otherwise be WDOE response authority. Although the scope of EPA or USCG authority for substances may be narrower than WDOE's (since WDOE state-provided authority for substances is in some ways broader than EPA'S or USCG's), the continuum of public policy providing response authority is not interrupted.

When an incident is large enough to constitute an emergency, public policies provide emergency response authority. State and local emergency management coordination authority is vested in the state DEM and local departments of emergency management, and the state DEM Contingency Plan for Hazardous Materials Emergencies outlines procedures for interagency emergency coordination.

1. Size of Incident Contingencies for Oil and Hazardous Substances: WDOE/EPA

WDOE and EPA define their jurisdictional boundaries according to the size of an oil or hazardous materials spill in three interrelated plans: the National Oil and Hazardous Substances Contingency Plan, EPA; the EPA Regional Response Team Region 10 Oil and Hazardous Substances Pollution Contingency Plan; and the WDOE Contingency Plan for Spills of Oil and Hazardous Substances.

a. Minor Spills of oil or hazardous substances of less than 1,000 gallons on inland waters are the responsibility of WDOE.

b. Moderate Spills (1,000 to 100,000 gallons on inland waters) or Major Spills (more than 100,000 gallons on inland waters) are initially investigated by WDOE, but subsequent containment, cleanup and removal authority is vested in EPA Region 10. EPA may delegate all or part of its authority to WDOE in any specific incident.

2. Size of Incident Contingencies for Emergency Response: FEMA/State DES/Local Departments of Emergency Services, Law Enforcement and Fire Protection

Authority for general state and local emergency management is granted in Washington by Chapter 38.52 RCW, "Emergency Management." This authorizes the creation of local departments of emergency management by political subdivisions (subject to state DEM approval), and provides authority to the state Department of Emergency Management for planning and coordination with local and federal emergency preparedness and management activities. General emergency management procedures are defined by the Washington State Disaster Preparedness Plan and more specific procedures for particular kinds of emergencies are defined in annexes to that plan.

Under the governor's general authority and the specific authority granted in Chapter 38.52 RCW to the governor, Executive Order 83-09, "Establishing a State Level Hazardous Emergency Preparedness Program and a Governor's Hazardous Materials Advisory Board," was issued in June 1983. DEM has prepared the Washington State Contingency Plan for Hazardous Materials Emergencies, under authority of that executive order and Chapter 38.52 RCW. This contingency plan is integrated into overall DEM emergency management through its inclusion as an annex to the Washington State Disaster Preparedness Plan. (DEM is required by Chapter 38.52

RCW to submit a comprehensive emergency management plan to the legislature by January 1, 1985.)

At present, the Contingency Plan for Hazardous Materials Emergencies is in "coordination draft" form. At the state level, interagency memoranda of agreement for implementation of the plan are still in the negotiation stage with key agencies, including WDOE and DSHS. The "coordination draft" is intended to define DEM procedures, for interagency coordination to serve as the basis for interagency negotiation, and to provide a model for local governments' emergency planning. Chapter 38.52.030 (4) RCW, as amended in 1984, requires DEM's planning to include "the procedures to be used during emergencies for coordinating local resources, as necessary, and the resources of all state agencies, departments, commissions, and boards." In its most recent edition (September, 1983), this contingency plan envisions three levels of emergency response to a hazardous materials incident:

a. Category I incidents are those which can be handled by local emergency response agencies with little or no outside assistance. These are described as including:

   i. "discharges (leaks, spills, etc.) which can be contained and controlled by personnel, supplies and equipment immediately available to the responding emergency force";

   ii. "fires involving hazardous materials which can be controlled with available resources";

   iii. "incidents which do not require evacuation of businesses or residences."

b. Category II incidents are those beyond the capabilities and resources of the initial local emergency response forces. Characteristics of a Category II incident are described in the plan as:

   i. "incidents involving agencies from outside the affected jurisdiction";

   ii. "discharges which threaten the public health, property or environment because of the nature and/or quantity of material involved or the location of the spill site. For example, if the spill occurs in or near drinking water supplies, or the spill site is in or near a populated business or residential area";

iii. "evacuation of the area is necessary or may be required if a threat continues."

Local response to a Category II incident includes establishment of an official Incident Command System and notification of state agencies.

State response to a Category II incident includes activation of DEM as the State Coordinating Agency to notify appropriate public agencies and private organizations, and to assume a coordination role in support of the local On-Scene Manager. A State Response Assistance Team may be activated, and if on-scene, a member of this team will be designated State On-Scene Coordinator to coordinate state agency support for the local On-Scene Manager. (Other state agencies would seem to follow normal internal procedures in this scale of incident, unless specific memoranda of agreement required otherwise. Federal emergency management would not seem to be involved.)

c. Category III incidents would be major disasters.

Local Response capabilities would, by definition, probably be overwhelmed by this Category III scale of incident. State DES would be notified, and a local on-scene Command Post and off-scene Emergency Operations Center would be established.

State Response in Category III would include mobilization of the state Emergency Operations Center (EOC) at DEM, and activation of a State Response Assistance Team. The EOC would assume a coordination role that is described in the plan as encompassing:

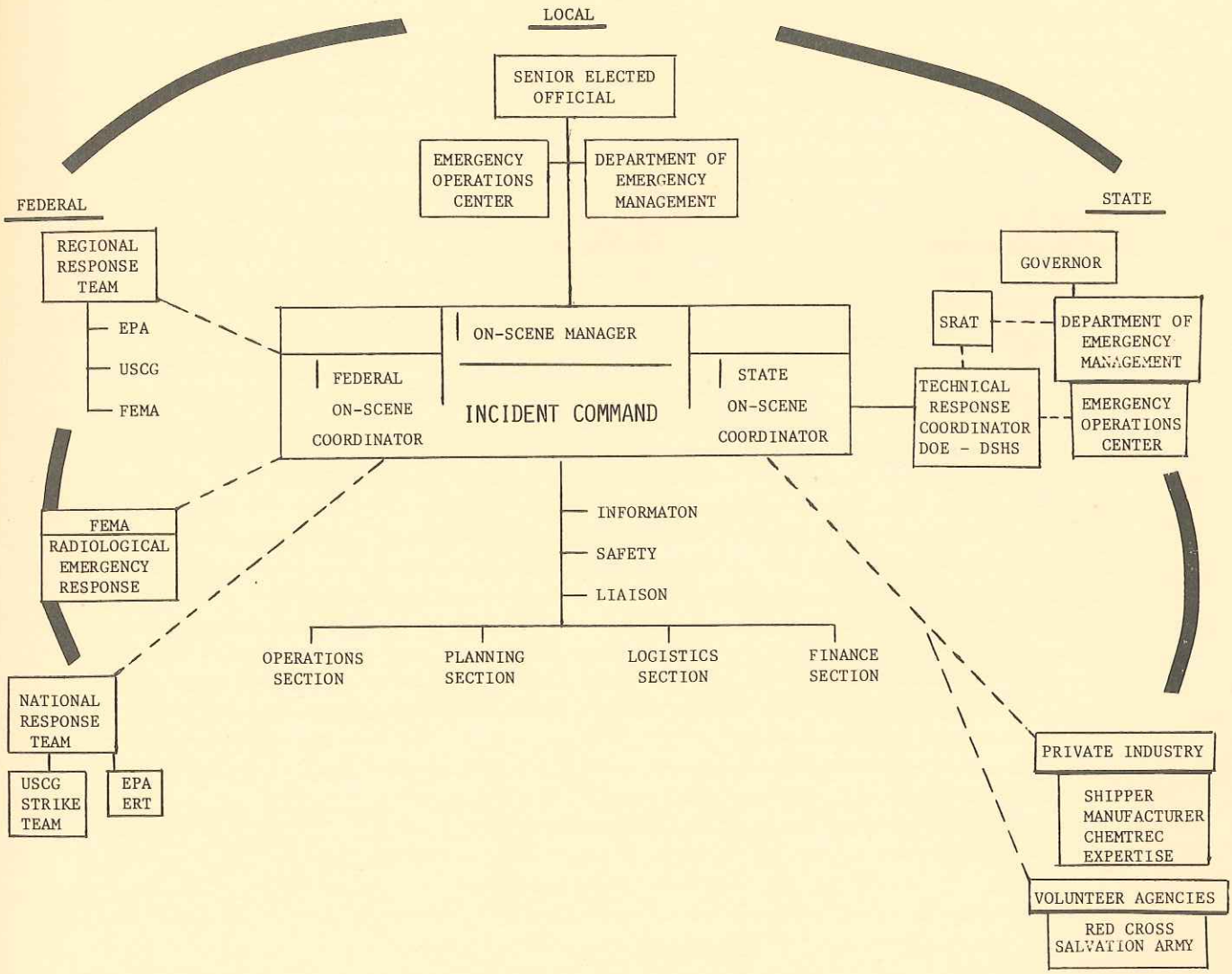
i. assistance from other jurisdictions;

ii. federal response, including the U.S. Coast Guard Strike Team, the EPA Emergency Response Team and the FEMA;

iii. private companies and cleanup contractors;

iv. disaster relief organizations such as Red Cross and Salvation Army.

Figure 5: **DEM Comprehensive View of the Hazardous Materials Incident Management System**
(Figure 5.1 of the DEM *Washington State Contingency Plan for Hazardous Materials Emergencies*, 9/83 Draft)



This comprehensive emergency response is illustrated by DEM in its Contingency Plan, shown here as Figure 5.

3. Major Disaster Relief: FEMA/the Governor

The Federal Emergency Management Agency operates under authority of the Disaster Relief Act of 1974. Its role is to assist state and local governments in the event of a major disaster, such as a chlorine barge or Love Canal incident; or major emergency, which, for example, might require the long-term housing of some evacuated people. FEMA'S response is triggered by the governor's request to the President for disaster response assistance. This request is also required to make the President's disaster relief funds available.

In the event of a state disaster, federal assistance, including FEMA's, would be coordinated through the federal Region 10 Regional Response Team.

C. LOCATION: Policies Defining Responsibilities For Incident Management by Geographic Location

Public policies assigning incident response authority according to geography have two purposes: to enhance logistical effectiveness, and to clarify jurisdictional lines between agencies which might otherwise overlap. The spill response policy reviewed in this section, defining location contingencies among WDOE, EPA, and the USCG, is straightforward, and does not confuse the policies described under substance and size.

However, an emergency response policy which defines authority by incident location does pose some problems. Through it, "Good Samaritan" immunities from liability are effectively accomplished in a logistically intelligent way. However, the mechanism for providing those immunities involve the designation of "incident command agencies" which might not coincide with the emergency response coordination system defined in the DEM Contingency Plan for Hazardous Materials Emergencies. The other potential confusion in this policy concerns the WSP role as incident command agency on state and interstate highways. The policy is not clear on this point, but it appears to grant spill cleanup authority to

the WSP which would overlap other state and federal agencies' cleanup authority.

1. WDOE, EPA and the Coast Guard: The Washington Department of Ecology, under the Contingency Plan for Spills of Oil and Hazardous Substances, has similar responsibilities to the Environmental Protection Agency and the U.S. Coast Guard in response to the actual or potential spills of hazardous substances on water. WDOE authority derives both from state legislation (Chapter 90.48 RCW, Water Pollution Control; and Chapter 70.105 RCW, Hazardous Waste Disposal) and from federal law, through implementation of an interagency agreement with EPA which delegates federal authority and responsibilities to the state. (Federal laws include the Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); and the National Oil and Hazardous Substance Pollution Contingency Plan, 1982). Jurisdictional boundaries among the three agencies are defined in part geographically, and in part by substance and size of incident. (The geographic and size-of-incident jurisdiction contingencies are illustrated in Figure 6).

   a. Coastal Waters, Columbia River below Bonneville Dam, Coastal Rivers up to Specified Bridges, Lake Union and Lake Washington: U.S. Coast Guard has primary responsibility. WDOE assumes a support role (which in a major incident may include coordination of other state agencies' support activities with the Federal "Regional Response Team"). Coast Guard authority is divided geographically. The Federal On-Scene Coordinator is the USCG Captain of the Port, Portland, for incidents from Pt. Grenville to Bonneville; and from Pt. Grenville to Canada, it is the USCG Captain of the Port, Seattle. (Point Grenville is midway along Washington's Pacific Coast and is shown in Figure 7.)

   b. Inland Waters and Land: WDOE has initial investigation responsibility and subsequent containment, cleanup and removal authority for a "minor" spill. For a "moderate" or "major" spill, WDOE still has initial investigation responsibility, but EPA assumes subsequent authority. WDOE maintains a support role to EPA, and may specifically be delegated some or all response authority by EPA.

      WDOE's investigation of all spills, and subsequent responses to minor spills, are conducted by one of its four regional offices, depending

Figure 6: **WDOE Oil and Hazardous Substances Spill Response in Washington State Waters**
(Appendix III-B of the WDOE Contingency Plan for Spills of Oil and Hazardous Substances, January, 1981. Emphasis added.)

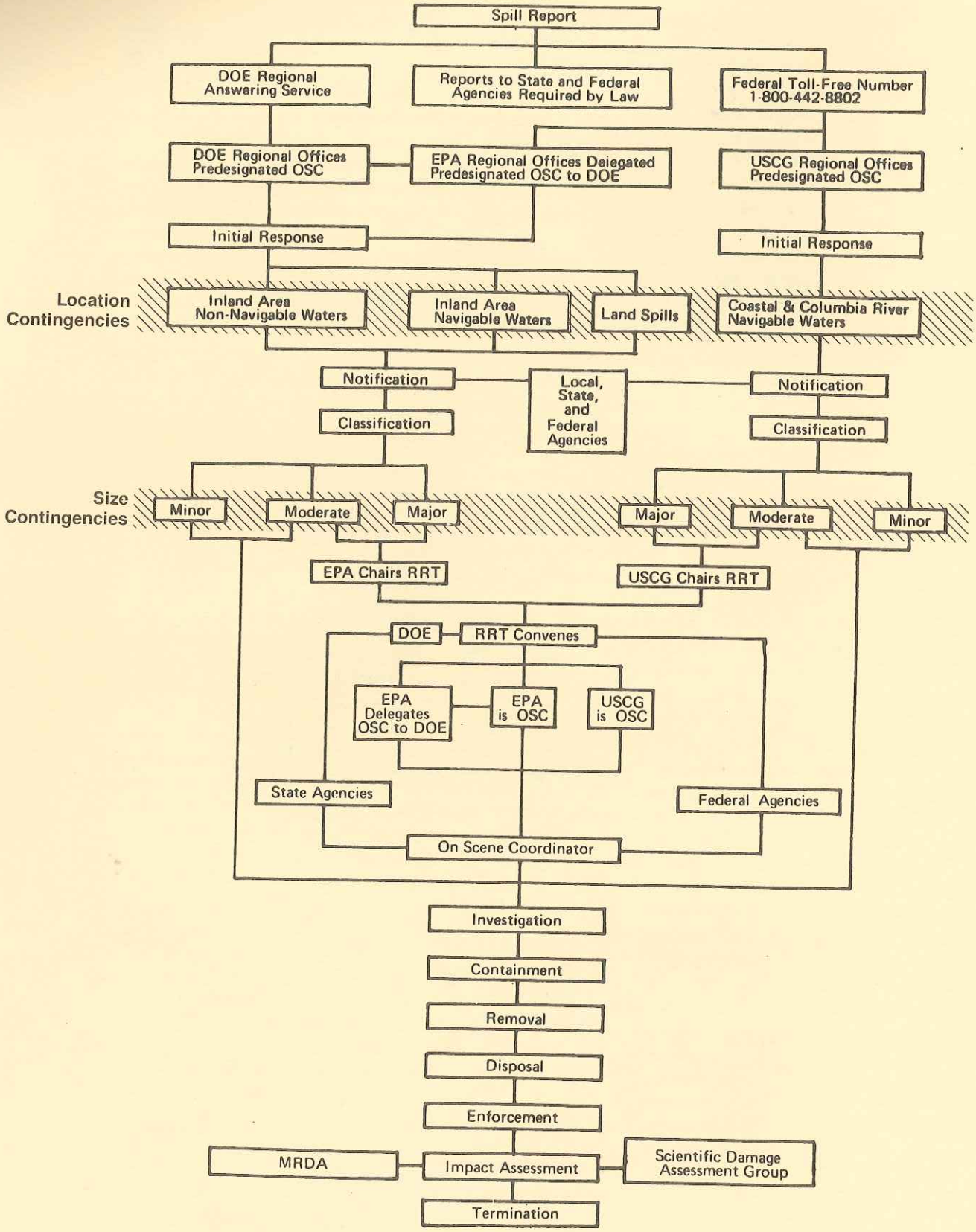
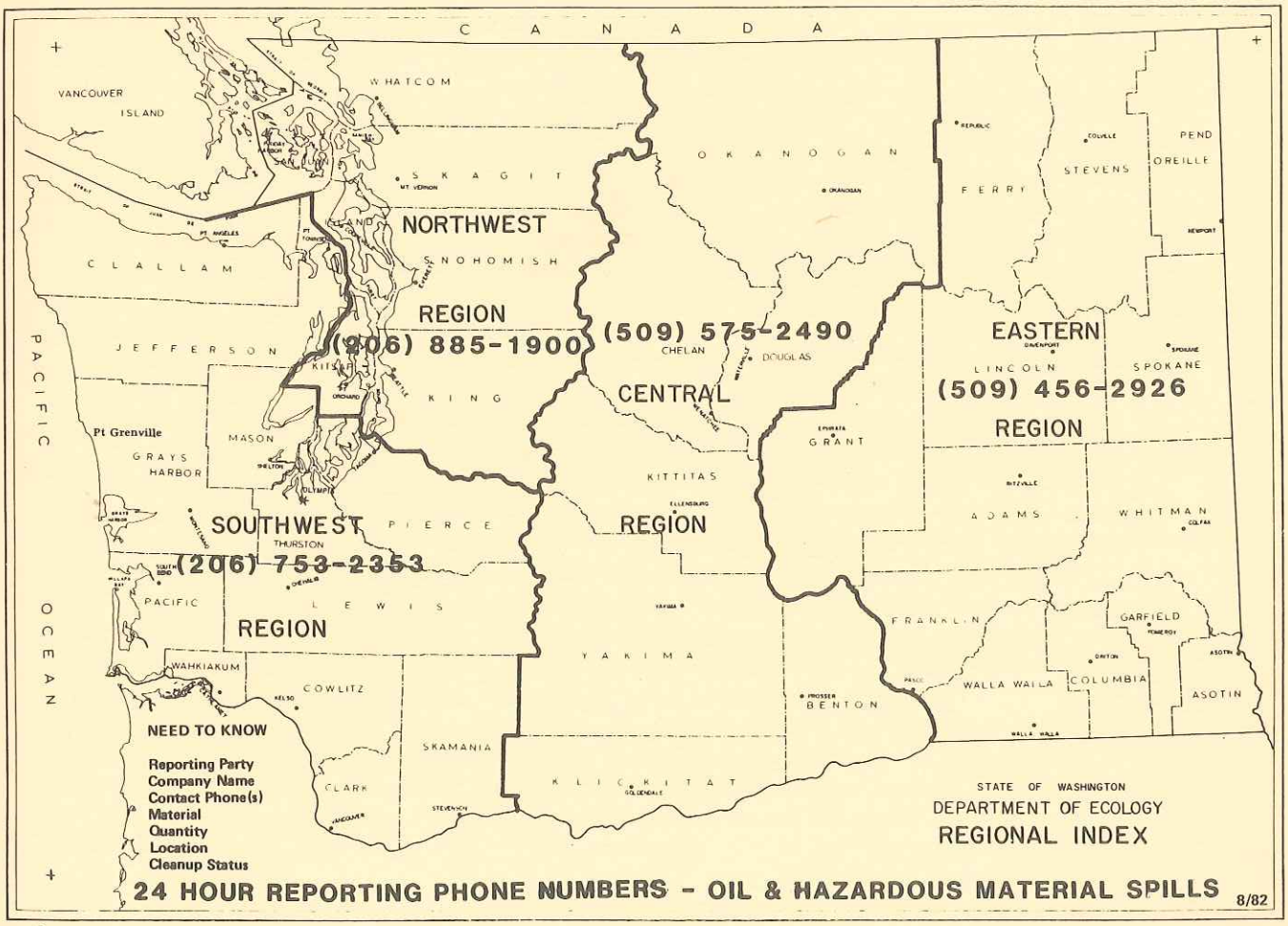


Figure 7: **Map of WDOE Regions**
(Appendix I-2 of the WDOE *Contingency Plan for Spills of Oil and Hazardous Substances,* January 1981)



on the county in which the incident occurs: Southwest (Tumwater), Northwest (Redmond), Central (Spokane) or Eastern (Spokane). (The counties covered by each WDOE region are shown in Figure 7.)

2. Washington State Patrol and Local Incident Command Agencies: Locations determining which agency has authority to enter into written or verbal emergency assistance agreements with "good Samaritans": As amended in 1984, Chapter 70.136 RCW, "Hazardous Materials Incidents," encourages political subdivisions to develop contingency plans to identify which agency would assume command of a hazardous materials incident. This law provides for "good Samaritan" immunities from liability for persons rendering emergency aid in such an incident, but only if the "good Samaritan's" aid is requested by authority of the designated incident command agency. (It is unclear what scope of command over a hazardous materials incident is authorized by this legislation, beyond the authority to enter into emergency assistance agreements that afford "good Samaritan" immunities from liability.)

   a. State and Interstate Highway Corridors: The Washington State Patrol is granted this incident command authority by Chapter 70.136 RCW.

   b. Political Subdivisions: Within the boundaries of each city, town, county, fire district and those port authorities with emergency response capabilities, the elected legislative council, board or commission, or the chief executive with public safety responsibility is authorized by Chapter 70.136 RCW to designate authority. As of April 1984, 81 local jurisdictions had filed such incident command designations with the Department of Emergency Management. (Nine counties or county DEMs, 29 cities and towns, 42 fire departments or districts and one port district.) It is not known to what extent these jurisdictions overlap, or what scope of incident command authority is planned in each jurisdiction.

D. EFFECTS: Policies Defining Responsibilities for Incident Management By The Potential Effects Of A Spill

In addition to the specific public policies which provide authority for hazardous materials incident response based on incident substance, size or location, there are other public policies which provide response authority based on the effect a spill might have. Some of these policies provide a safeguard so that a gap among specific hazardous materials incident management policies can be filled by a more general

authority to respond. Others provide protection where the effect of a spill would be most devastating.

In general, the state and local public health agencies have statutory authority to investigate threats to public health and sufficient authority to take action in response to a clear public health hazard. WDOE and EPA have similarly broad roles in preventing pollution and protecting the environment. Historically these public health protection and pollution control roles preceded most specific hazardous materials incident response legislation and formed the basis for assigning the subsequent authority. The more recent and specific legislation has tended to follow the jurisdictional boundaries of the older, more general legislation. (Nonetheless, environmental legislation includes public health protection purposes, so some overlap is inevitable.)

If a hazardous materials incident threatens drinking water, local public water systems are required to act to protect it. Local environmental health authorities are empowered to prevent drinking water contamination by containing and cleaning up such a spill regardless of another agency's authority. There is a clear jurisdictional overlap, but probably a safe one.

1. Effects on the Environment: WDOE/EPA: Through EPA's interagency agreement with WDOE, these agencies share broad authority for response to actual or potential hazardous materials spills, based on the Comprehensive Environmental Response, Compensation and Liability Act of 1980. As defined in CERCLA,

   > "environment means. . .navigable waters, and. . . any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air. . ."
   >
   > "hazardous substance" in CERCLA is defined in reference to the Federal Water Pollution Control Act, the Solid Waste Disposal Act, the Toxic Substances Control Act and the Clean Air Act, but excludes natural gas and certain petroleum products.
   >
   > WDOE also has general environmental management responsibilities under its State of Washington enabling legislation, Chapter 43.21A RCW.

2. General Effects on Public Health: State Board of Health/DSHS/Local Boards of Health: The general statutory authority for DSHS and local health agencies provides for the investigation, sampling and examination of conditions constituting a threat to public health. (The

1984 legislature strengthened this role on drinking water monitoring through SSB 1191.)

3. Effects on Drinking Water: Environmental Protection and Public Health Agencies: Both environmental protection and public health agencies have jurisdiction in response to a hazardous materials incident which threatens drinking water supplies.

   a. Effects on drinking water: State Board of Health/DSHS/Local Public Water Systems

      The Rules and Regulations of the State Board of Health Regarding Public Water Systems (Section 248-54 WAC, Public Water Supplies) assigns responsibilities to DSHS and public water system owners and operators for protection of water supplies. Specifically, public water systems are required to develop an emergency response plan, and to notify DSHS and its customers when ". . .any situation occurs where the water quality may be degraded and public health may be threatened" (248-54-05.3 and .4 WAC). DSHS provides technical assistance to local water systems, using an Emergency Planning Instruction Guide which includes consideration of industrial discharges or spills. Public water systems are required to employ a "security measure . . .to assure the watercourse. . .[is] under the strict control of the purveyor (Section 248-54-205.1 WAC). This seems to give local water supply or local environmental health authorities the responsibility and authority for spill containment and cleanup whenever public health is threatened by potential drinking water contamination.

      In the event of significant contamination of a public water supply, the local operator is required to notify DSHS. Corrective action is then to be taken as required by DSHS. Specified contaminants for which monitoring is required include not only bacteriologicals but also corrosives, certain pesticides, radionuclides, trihalomethanes and certain inorganic chemicals. (Additional consideration for standard setting and monitoring of synthetic organics was mandated in the 1984 legislature by SSB 1191.)

   b. Effects on Drinking Water, Ground Water and Surface Waters: WDOE, EPA: As described above in II-A-1, II-B-1 and II-C-1, WDOE and EPA share authority for water protection, through CERCLA, FWPCA and CWA. In addition, WDOE has specific Washington authority for water protection through Chapter 90.48 RCW, Water Pollution Control.

E. TYPE OF SPILL SITE: Policies Defining Responsibilities For Incident Management by the Site or Other Circumstances of the Spill

A hazardous materials incident is more likely to happen at some kinds of sites than others. In addition to the policies which provide incident response authority for the full range of potential incidents, some public policies provide particular incident management authority for those sites where accidents are most likely to occur. Because of the safety concern at these sites, they tend to be the ones most closely regulated to prevent hazardous materials spills.

The incident response policies for two of these kinds of sites were described above under SUBSTANCES: pesticides and radioactive materials. DSHS regulates sites where radioactive materials are used and responds to incidents at those sites. WSDA regulates pesticide use, but DSHS has primary incident response authority and WDOE has backup pesticide incident response authority. WSDA maintains its incident prevention role when it investigates a pesticide spill to enforce its pesticide use regulations.

Two other kinds of sites where hazardous materials incidents are most likely are transport routes and facilities that generate hazardous waste.

Hazardous materials transport is closely regulated by USDOT and WUTC. (Plus WSDA regulates pesticide transports.) USDOT requires warning placards to be posted on hazardous transport and publishes an Emergency Response Guidebook for use by law enforcement and other agencies apt to respond to a transportation accident involving hazardous materials. The WUTC is authorized to inspect the loading areas of common or contract carriers (but not private carriers) of hazardous materials, to ensure proper loading and vehicle safety. The WSP enforces USDOT and WUTC hazardous materials transportation regulations on state, interstate, and other public highways (but not loading areas) for all "motor carriers" of hazardous materials (except farmers).

WDOE regulates facilities which generate, store, treat, or dispose of hazardous wastes (usually at a rate of 400 pounds per month or per batch). Extensive incident prevention and response measures are required of facility operators, including development of a spill response contingency plan for their facility. WDOE requires these plans to include the spill response roles agreed to by local police and fire departments and requires that local hospitals be informed of the potential health effects of a spill.

1. Road, Rail, Sea and Air Transport of Hazardous Materials: U. S. Department of Transportation: The U.S. DOT has a con-solidated federal regulatory authority for protection of the public from hazardous materials transportation risks, through the Hazardous Materials Transportation Act (49 USC 1801).

   a. Regulated Hazardous Materials: U.S. DOT's definitions of hazardous materials are the broadest at the federal level. They include not only those substances found hazardous from a transportation perspective (e.g., explosives), but also those hazardous substances identified by EPA in both the Comprehensive Environmental Response, Compensation and Liability Act and the Clean Water Act. The hazardous wastes defined by EPA in the Resource Recovery and Conservation Act are also included, along with EPA's regulations for the transportation of hazardous wastes. By incorporating the definitions sections of the U.S. DOT regulations and state regulations, some state agencies have aligned their definitions of hazardous material with these inclusive definitions.

   b. Placarding and Labeling: Proper identification of the hazardous material is central to spill containment, spill cleanup and emergency response. U.S. DOT requires its system of warning placards to be affixed to freight containers, rail cars and motor vehicles carrying certain amounts of hazardous materials. A similar set of labels is required to be affixed to certain packages containing hazardous materials. (The system of approximately 20 pictorial placards is now being supplemented by a four digit placarding system which specifically identifies each hazardous material being shipped.)

   c. Emergency Response Guidebook: U.S. DOT publishes a Hazardous Materials Emergency Response Guidebook which contains an index for matching a four-digit code number, or the name of a hazardous material, with one of 55 guides to its potential hazards and the emergency actions to be taken. A table of isolation and evacuation distances for some substance is also included for first responder safety and emergency response.

2. Road Transport of Hazardous Materials: Washington State Patrol/U.S. DOT/Washington State DOT Regulation and Response: As described earlier, the State Patrol has been designated Incident Command Agency for incidents on state or interstate highway corridors by Chapter 70.136 RCW, Hazardous Materials Incidents. But the Patrol has other authorities and responsibilities in the overall hazardous materials incident management system.

Chapter 46.48 RCW, Transportation of Hazardous Materials, defines the State Patrol's planning, prevention, inspection and enforcement authority for "motor carriers" of hazardous materials (except farmers) on interstate, state and other public highways. This statute, in conjunction with Section 446-50 WAC, adopts for enforcement by the Patrol the U.S. Department of Transportation regulations for hazardous materials transportation in Title 49, CFR, parts 100 through 199. The Patrol's Commercial Vehicle Enforcement Director summarized the Patrol's authority as including:

a. Inspection: authority to open and inspect the cargo of motor carriers transporting hazardous materials;

b. Evaluation: authorizes the WSP Chief to appoint a hazardous materials technical committee representing the explosives, petroleum, chemical, trucking and pesticide industries, and the Washington State Association of Fire Chiefs. Their statutory mandate is to "aid in the study and evaluation of proposed regulations concerning safety in the transportation of hazardous materials. . .";

c. Penalties are provided for violations, which are considered misdemeanors, subject to a minimum $100 bail, and fines of $200 to $500. The vehicle owner or lessee has primary responsibility for compliance;

d. Additional enforcement authority is provided by Chapter 1 81.80 RCW, Motor Freight Carriers, through which the Patrol assists the Washington Utilities and Transportation Commission in its motor freight enforcement;

e. Additional spill prevention authority for the Patrol is provided by the Department of Transportation in Section 468-38-135 WAC, which provides for road closures to transport of hazardous and radioactive materials.

3. Hazardous Waste Facilities: WDOE/Facility Operators/Local Emergency Responders and Hospitals: WDOE permits and regulates hazardous waste facilities by authority of Chapter 70.105 RCW, The Hazardous Waste Disposal Act of 1976 as amended in 1980 by Washington legislative action, and Subtitle C of Public Law 94-580, The Resource Conservation and Recovery Act. Chapter 173-303 WAC, Dangerous Waste Regulations, cites WDOE's specific policies and requirements for the management of dangerous and extremely hazardous wastes. Most of WDOE's regulations concern the prevention of hazardous materials spills, rather than the response to incidents. In general, a reported spill incident would result in an investigation for rule compliance and possible enforcement action, which in some cases could ultimately result in permit revocation and fines. The spiller is required to cleanup the spill but WDOE could contract for cleanup if necessary.

   a. These regulations, as amended, apply to everyone handling dangerous wastes, including "generators; transporters; owners and operators of dangerous waste recycling, transfer, storage, treatment and disposal facilities; and the operator of the state's extremely hazardous waste management facility [at such time as it may be constructed]."

   b. Prevention and detection of hazardous materials spills and dumping incidents are enhanced through a manifest system for the "cradle-to grave" tracking of dangerous and extremely hazardous wastes.

Other requirements for hazardous waste facilities relate directly to hazardous materials incident management:

   c. Specific preparedness and prevention activities are required of facility operators. These include providing emergency communications, alarm and fire-fighting equipment; familiarizing local emergency responders with the facility's layout and hazards; and familiarizing local hospitals with the properties of the dangerous wastes handled and the potential injuries or illnesses which could result from an incident.

   d. Contingency plans must be prepared by owners or operators for response to "emergencies or sudden or non-sudden releases which threaten public health and environment." These plans must include descriptions of the response roles agreed to by local police and fire departments, hospitals, contractors and state and local emergency response teams. Copies of these plans must be filed with those

agencies and organizations. (This requirement extends federal requirements for a Spill Prevention and Control and Countermeasures Plan stipulated in Part 122 of Title 40 CFR.)

e. Designation of an employee as an emergency coordinator is required, along with the delegation of authority to that employee necessary to commit resources to implement the contingency plan. Emergency procedures are specified, including detailed notification requirements.

F. Other Agencies Potentially Involved In The Hazardous Materials Incident Management System

1. Federal agencies whose specific hazardous materials incident management responsibilities have not been discussed include OSHA and the Nuclear Regulatory Commission.

2. State agencies whose roles have not been analyzed in the text of this report include the Department of Labor and Industry's policies (which has an incident notification role), the Department of Licensing, the Department of Fisheries, the Department of Game, the Department of General Administration, the State Fire Marshal and the Commission for Vocational Education (which conducts fire service training).

3. Local agencies: The powers and responsibilities of incident management are briefly described in this report, but procedures may vary from one jurisdiction to another. It seems prudent to establish a clear and concise portrayal of state and federal policies and procedures, as well as local agencies' powers and responsibilities, before systematically surveying local jurisdictions to determine what coordination problems they may have with state and federal agencies. However, the results of the survey of local government concerns mentioned in Senator Bottiger's letter suggests that future policy development be informed by a systematic survey.

4. Seaport and airport policies and procedures have not been analyzed in this report.

5. Private industry response teams and services have not been discussed in this report. A partial listing is provided in Appendix F.

III. INCIDENT MANAGEMENT PROCEDURES: THREE BRIEF CASE STUDIES

In order to illustrate how public policies for hazardous materials incident management are reflected in practice, three recent Washington incidents are described. To varying degrees, the actual procedures used reflect the prescribed procedures contemplated in contingency planning. These case studies also raise some procedural issues which are discussed systematically in the following section of this report (Part IV). These three incidents were chosen for analysis because they fit the questions asked in Senator Bottiger's letter.

A. The Lynden airport pesticide spill. This was a relatively minor incident with a potential threat to a local water supply.

B. The Kalama Chemical fire, an immediately life-threatening incident.

C. The Marysville derailment, a major incident, life-threatening to a large population.

(NOTE: These case studies for the preliminary report were researched by Julie Baker, a graduate student intern, based on newspaper accounts and limited agency files.)

These three incidents illustrate how emergency management and spill management procedures reflect different agencies' responsibilities under different contingencies. An analysis of a sample of 1982 and 1983 incidents (shown in Appendix B) reveals that a wide variety of incidents are reported each year.

In 1983, the Southwest Regional Office of WDOE (one of four regional offices statewide) received reports of 128 hazardous materials incidents. The State Department of Emergency Management received reports of 112 incidents, statewide, last year. (A chronology of incidents reported to WDOE or DEM in WDOE's Southwest Region is provided as Appendix A to this report.)

A. THE LYNDEN AIRPORT PESTICIDE SPILL: A minor pesticide incident with a potential threat to a local water supply.

1. Notification and assessment: On Saturday, October 15, 1983, the manager of the Lynden airport observed an Eagle Cropdusting aerial pesticide applicator dump waste liquid and sludge. The sludge mixed with water formed a 15 foot by 25 foot pond across the access to the aircraft parking areas.

   The airport manager used the state Department of Emergency Services 24-hour emergency number to report the incident at 5:30 p.m. that day. The initial report described a dumping of 25 to 30 partly filled 55-gallon drums of pesticide sludge containing parathion/malathion

and indicated a potential groundwater threat. The state DES contacted the Whatcom County Department of Emergency Services to confirm the report, and notified the Department of Ecology, the Department of Agriculture and the Department of Social and Health Services.

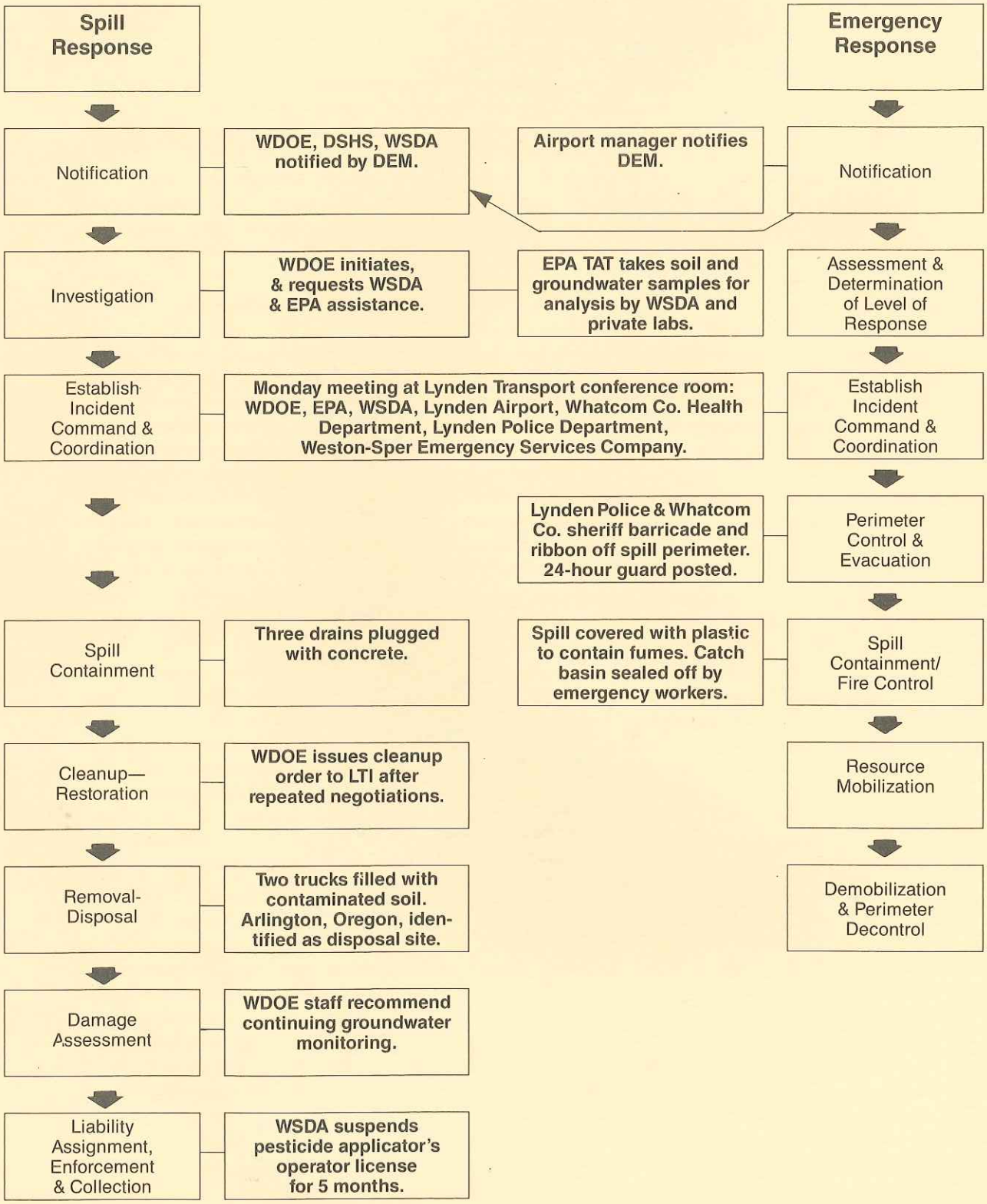
2. Perimeter control: The Whatcom County DES confirmed the report, and the Lynden Police Department barricaded and ribboned off the spill perimeter at 7:00 p.m. and posted a 24-hour guard.

3. Investigation and spill containment: The following day, Sunday, at 12:45 p.m., the Department of Ecology requested technical assistance from the state Department of Agriculture through DEM. WSDA agreed to assist, and suggested that the contaminated area be secured until the degree of hazard could be determined. The restricted area was covered with plastic to contain toxic fumes. Emergency workers filled in the catch basin to seal water run-off from the groundwater beneath the site. Three drains were later plugged with concrete. The local health district investigated possible drinking water contamination, but no wells were discovered in the area.

4. Cleanup, removal and disposal: On October 18, EPA Technical Assistance Team (TAT) workers wearing protective clothing took soil samples, which were then flown to a state pesticide laboratory in Wenatchee for analysis. WDOE found indications of prior pesticide dumping at the site. However, the cropduster stated that he spilled less than a half-quart of pesticide. An article in the Bellingham Herald of October 18 quoted him: "Basically, I spilled a minute amount Saturday. It has a smell and that's what they're going on."

On October 25, EPA and WDOE officials met with the airport owners' representatives (Lynden Transport, Inc. for LTI and Douglas Management Consultants) to discuss cleanup responsibilities and methods. As a result of LTI's questioning of soil testing techniques and conclusions, the TAT team took additional samples on October 27 for analysis by a private laboratory. The various tests indicated substantially high levels of the pesticide methylethyl parathion and thiodan, classified as extremely hazardous wastes. Cleanup appeared to require excavation of 18 inches of contaminated soil in specific areas. Disposal appeared to require transport of the contaminated materials to the hazardous waste disposal facility in Arlington, Oregon.

Figure 8: **Response to the Lynden Airport Pesticide Spill**



On October 31, a WDOE cleanup order was imposed on LTI, which included:

a. required submission of a cleanup plan within ten days;

b. prescribed methods for handling, transporting, and disposing of contaminated dirt;

c. procedures for monitoring groundwater quality;

d. requirements for removing any pesticides from the groundwater;

e. containment of the site during removal and restoration; and

f. prevention of future incidents.

LTI again challenged the sampling procedures and cleanup conclusions based on sample analysis, so the TAT took additional soil samples on November 7, and established two groundwater monitoring wells. These tests re-confirmed soil contamination, and LTI agreed to excavation, scheduled for November 16. Two trucks were loaded with contaminated soil for disposal at Arlington, Oregon, and WDOE awaited disposal manifests confirming receipt of the soil by Arlington. WDOE staff recommended continued groundwater sampling. (See Figure 8.)

WSDA suspended the pesticide applicator's operator's license for five months (January through May 1984) to be followed by a one-year probationary period. WSDA reports that the pesticide applicator sold his business to another applicator for whom he now works as an employee.

B. THE KALAMA CHEMICAL FIRE: An immediately life-threatening incident.

1. Notification: At 11:40 p.m. on August 29, 1981, the Longview Fire Department and Kalama Rural Fire District No. 2 responded to an explosive chemical fire at the Kalama Chemical Company storage yard. The Company's own firefighters were already on the scene. Kalama Chemical and the local districts worked together under a mutual aid agreement, as the Company had chosen not to pay for local fire protection.

The Washington State Patrol dispatcher notified the State Department of Emergency Management of the fire at 12:23 a.m. DEM contacted the U.S. Coast Guard, the local Sheriff's office, the departments of Ecology, Fisheries and Game, and the Governor's Office. The EPA was also notified.

2. Perimeter control and evacuation: Immediate emergency actions included the closure of I-5 by the State Patrol. The mainline Burlington Northern tracks from Kelso to Woodland were also closed. A river closure was discussed, but not enforced. No evacuation procedures were established, although people within a two-mile radius of the area were advised to leave. No command post was established.

3. Fire control and spill containment: By 12:55 a.m., it was determined that the plant contained two million gallons of explosive toluene (flash point 40 degrees F.) as well as phenol, which is toxic to water organisms. WDOE provided information from the Company's SPCC plan on maximum raw material storage.

Some sickness from the fumes was reported at 1:15 a.m. Five people were injured, including two firefighters. During the fire, a tank car containing 17,000 gallons of extremely volatile liquid benzene was engulfed in flames. Firefighters had been told by company employees that the tank was empty, and they proceeded to put out the fire around the tank car. Had they been informed of the tank's contents, their manuals would have advised them to pull back one-half mile. The fire departments were unable to handle the rest of the fire, so they let the material burn out. By 2:15 a.m. the fire was out, and fire run-off water was trapped on the site.

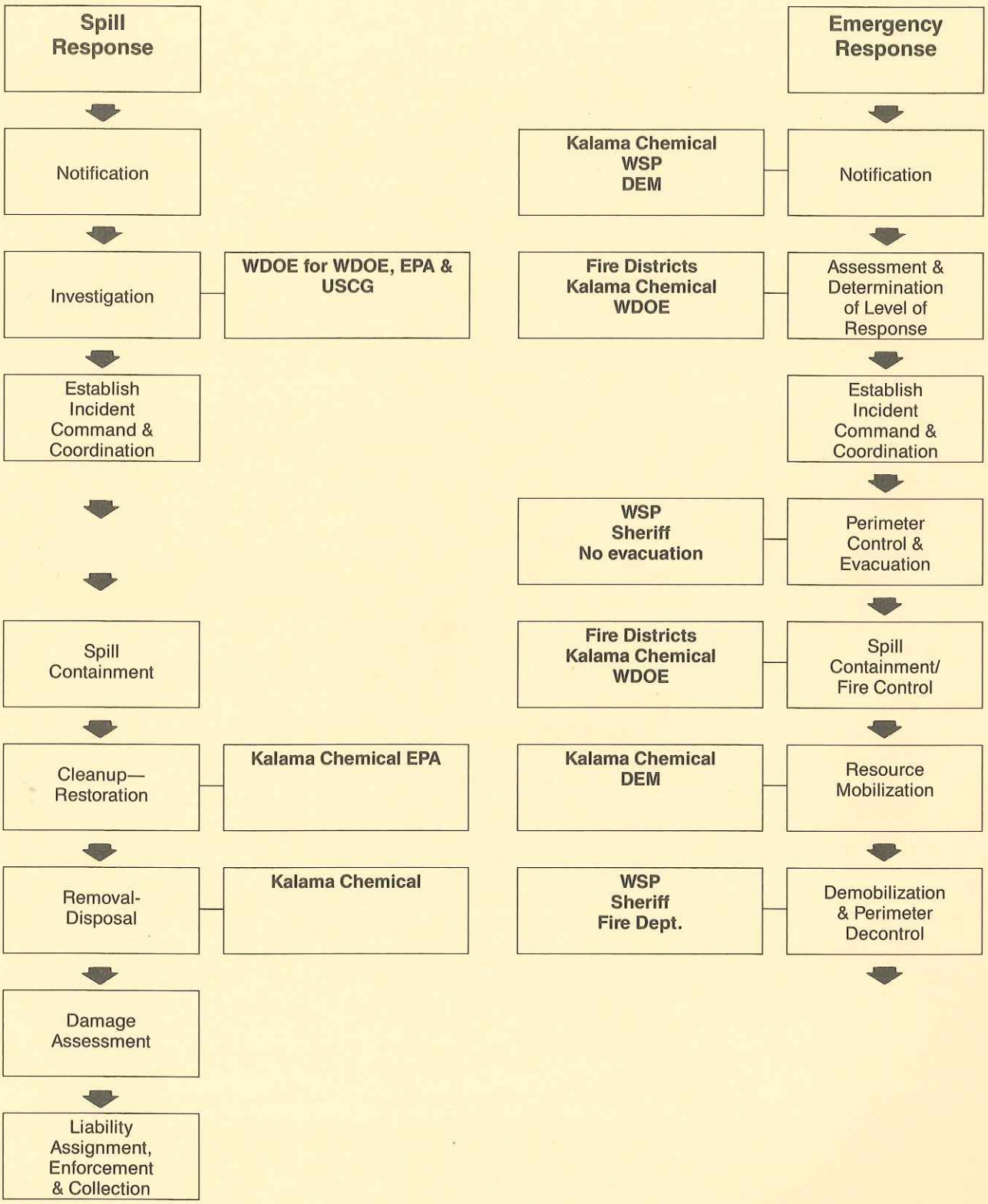
4. Investigation and cleanup: A Kalama Chemical Company chemist began checking the area as soon as the fire was out. The WDOE spill van arrived to investigate for WDOE, EPA and the USCG. Fire run-off was sampled every four hours for phenol, but none was detected. Ditches and plant waste water systems were checked by the plant. No air pollution was reported.

Plant cleanup was set to begin at 11:00 a.m. the next morning by Kalama Chemical in compliance with hazardous waste laws. However, Kalama Chemical tractors were beginning cleanup within a few hours after the fire was out.

5. Liability assignment, enforcement and collection: The fire districts, Sheriff, WSP, DEM, police and WDOE convened at the Cowlitz County Courthouse on August 30. Kalama Chemical was critiqued on matters related to the fire. Local officials had not been able to investigate the area to determine the cause of the fire, particularly given the Company's cleanup with tractors within a few hours of the fire. The Cowlitz County Sheriff's Office alleged that the Company gave false or incomplete information.

Kalama Chemical, Inc. agreed to pay the $6,000 bill submitted by two of the four fire districts which battled the fire (Kelso also assisted). Representatives of all agencies involved later met with representatives of the Company

Figure 9: **Response to the Kalama Chemical Fire**



to review the incident. Local fire districts presented the Company with a contract detailing the districts' reponsibilities in the event of another fire.

6. Removal and disposal: EPA engineers visited the site on September 21, 1981, to ascertain that waste was being handled correctly, and transported to Arlington, Oregon, in the proper way. (See Figure 9.)

C. THE MARYSVILLE DERAILMENT: A major incident, life-threatening to a large population.

1. Notification and assessment of emergency response: At 11:37 p.m. on October 5, 1981, an officer of the Snohomish County Sheriff's Department reported a train derailment on the 130th block of Highway 99 North. She detected a faint, unknown odor, and advised her dispatcher, Snohomish County Police, Staff, and Auxilliary Services Center, (SnoPac) that chlorine and liquified petroleum gas (LPG) cars were damaged. There were no injuries. The Sheriff's Office and the Fire Department responded. The dispatcher, when given the railroad car identification numbers, checked with Burlington Northern and advised the on-scene responders that only one chlorine car was full.

At 11:48, the train conductor reviewed his shipping manifest and advised that people be removed from the area. The Snohomish County DES and Fire District No. 12 recommended evacuation of everyone within 3,000 to 5,000 feet.

During this emergency response phase, the Snohomish DEM notified the State DEM in Olympia. State DEM notified the Department of Ecology, the Utilities and Transportation Commission, the Governor's Office and the EPA.

2. Incident coordination: A base of operations was established upwind from the derailment. All information was coordinated between the Sheriff's Office and the Fire Department. As emergency procedures were put into effect, a communications van was used to coordinate all of the various organizations in the field.

3. Spill containment: At the scene, it was determined that 24 cars of the 76-car Ferndale-to-Seattle train were derailed. A pile of nine cars included five chlorine cars from the Georgia Pacific pulp mill, all five of which were found to be full. The two isobutane (LPG) cars were on top of the pile. The outer shell of one of the tanks had been breached. A captain and four firefighters with breathing apparatus and full protective clothing carefully checked the derailed cars for tank leaks afterward, but found none.

4. Evacuation and resource mobilization: The Fire Department suggested that the evacuation zone extend from 152nd Street Northeast to 116th Street Northeast, and east from Highway 99 to 51st Avenue Northeast. The Snohomish County volunteer search and rescue team was called in to assist with the evacuation, which began at about 1:00 a.m. Approximately 5,000 people from a four square mile area were moved. The Red Cross provided temporary assistance with food and lodging. The junior high schools and a church were used as evacuee centers.

5. Cleanup investigation: The next morning, October 6 at 8:30, a hazardous materials specialist from the Association of American Railroads arrived at the command post. He described the railroad's cleanup plan to County officials. Railroad crews began to repair the mainline tracks, and removed the wreckage to gain access to the two isobutane cars. At this time, these two cars were the primary concern.

6. Perimeter decontrol: At 10:00 a.m., the railroad reported that the isobutane cars were in stable condition. Evacuees could return to their homes.

7. Evacuation for cleanup: On October 7, two tank cars were located for use in the transfer of the isobutane. The transfer was planned for October 10, and would include an evacuation of a quarter-mile area.

   On October 9, Sheriff's deputies hand-delivered written instructions, signed by the Snohomish County Executive, to those who would be evacuated a second time. The transfer occurred on October 10 from 9:30 a.m. to 5:30 p.m. Twenty-five fire department personnel were briefed, and crews rotated at the site every two hours. Petrolane Corporation conducted the transfer.

8. Perimeter decontrol: Evacuees were informed by radio when to return home.

9. Cleanup: The five chlorine tanks were upright and back on the tracks on October 13. Georgia Pacific safety representatives and local fire department personnel and equipment remained on the scene throughout this operation.

10. Liability assignment, enforcement and collection: The derailment occurred when a frictional bearing journal ran dry of lubricant, causing an axle to burn out on a car carrying the toxic chlorine gas from the Georgia Pacific pulp mill. The car had not been inspected before leaving Bellingham, violating federal freight car regulations.

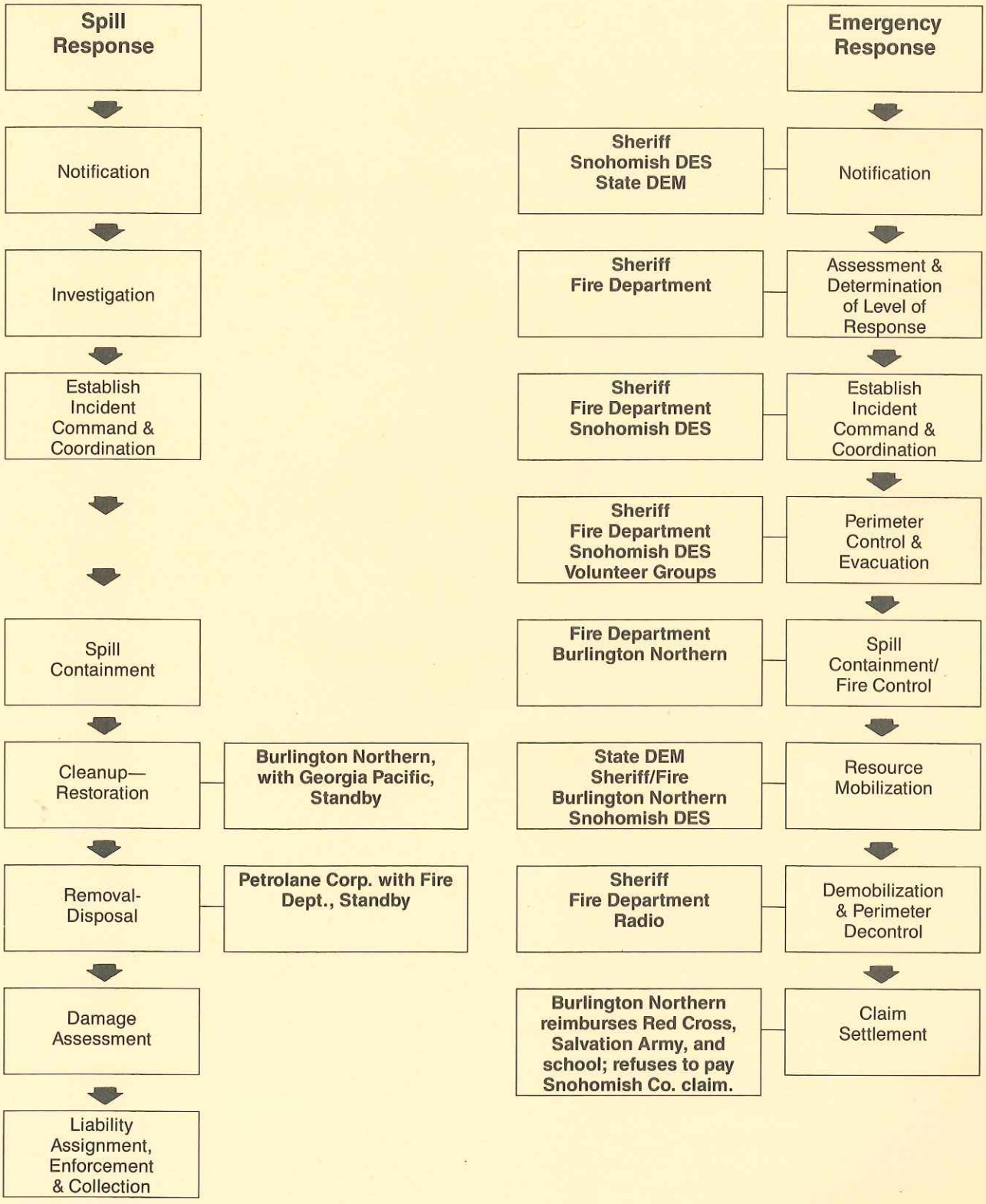
In the October 8, 1981, Seattle Post-Intelligencer, columnist George Foster indicated that local public officials and Burlington Northern had been in disagreement over the need for evacuation. Burlington Northern's view was expressed as: "Our position is that if it didn't happen during the derailment, the chance of a rupture occurring is substantially reduced to almost zero after the derailment." The Sheriff's position was: "I don't feel they are in any position to second guess our judgment or our evaluation--it's up to us and not the railroad. All our training tells us to protect lives and property."

Snohomish County filed a claim against the railroad for $16,572.34. The railroad, as a taxpayer, refused to pay for public services. Burlington Northern did reimburse the Red Cross, the Salvation Army, the church and the school. (See Figure 10.)

D. CASE STUDIES IN PERSPECTIVE

Each year, Washington's hazardous materials incident management system is tested by events. The three case studies illustrated how hazardous materials incidents are managed in practice. They were presented in order to ground the abstract study of different agencies' policies and procedures in concrete experience. The case studies were not intended as performance evaluations of the agencies involved, but to set the stage for the systematic analysis of policies and procedures in the following section of this report. The following section of this report tests the system by analyzing each frequently-taken step in the incident management process.

Figure 10: **Response to the Marysville Derailment**



IV. PRELIMINARY ANALYSIS: POTENTIAL JURISDICTIONAL GAPS, OVERLAPS AND PROCEDURAL ISSUES

The following analysis focuses on the key jurisdictional issues at each step in the hazardous materials incident management system, and addresses the following questions (See, Figure 11):

Policy Issues:

> Given the scope of authority for each agency potentially involved, what potential for jurisdictional overlap exists?
>
> What jurisdictional gaps seem to exist, given the scope of each agency's authority?

Procedural Issues:

> What appear to be the major procedural issues at this step in the incident management process?

This analysis organizes the steps in the overall incident management system in three broad groupings:

I. Planning, Training and Preparation (which includes both contingency planning training and other preparation.

II. Incident Response (which includes the early stages of both spill response and emergency response).

III. Incident Follow-up (which includes the later stages of incident response, plus evaluation and prevention).

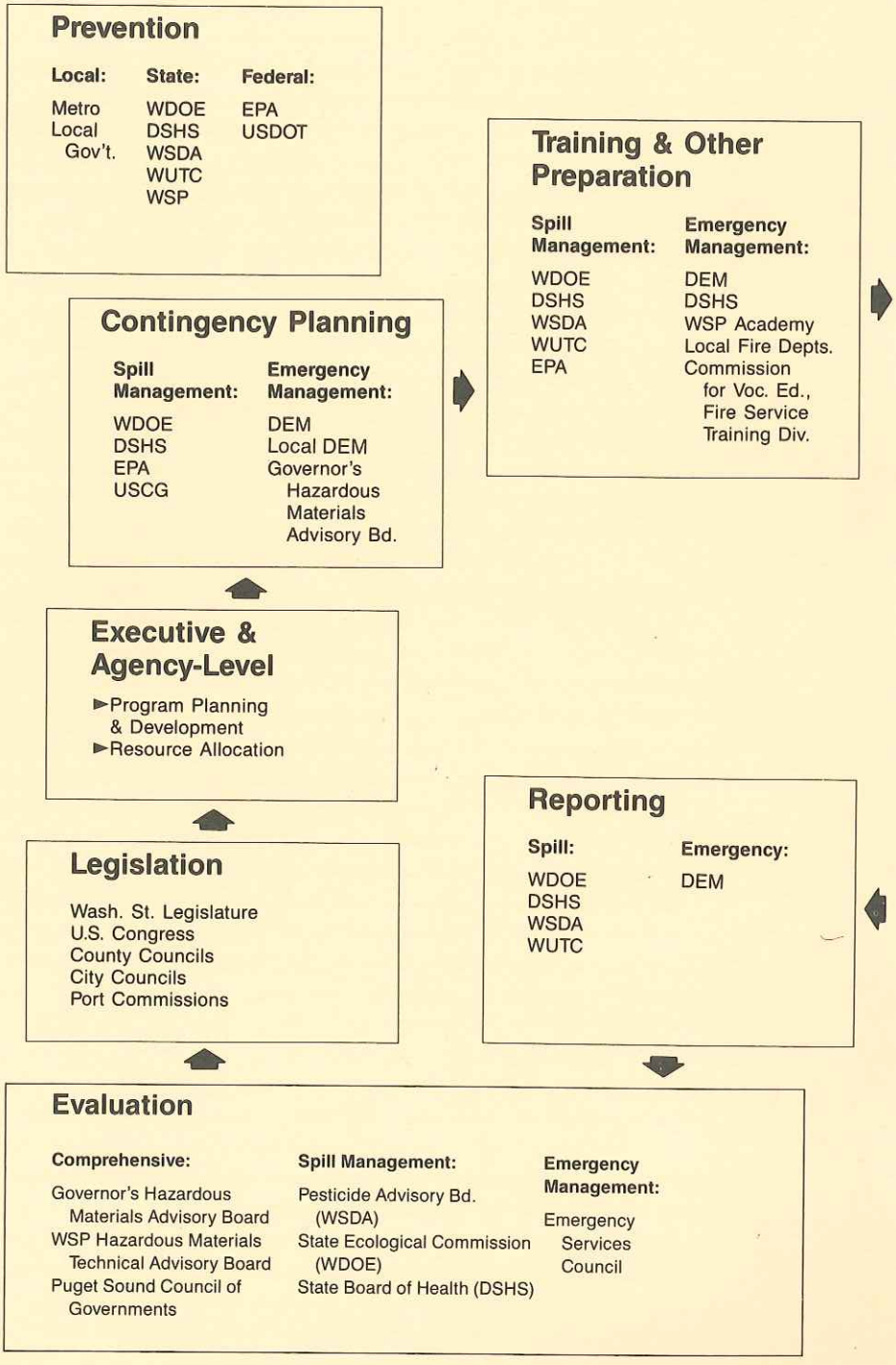
A. PLANNING, TRAINING AND PREPARATION

How efficiently a hazardous materials incident is managed depends largely upon the quality of advance planning, training, and equipment preparation. The major jurisdictional and procedural issues in preparing to respond to hazardous materials incidents are described in this section. While resource allocation issues have not been studied in this report, some shortcomings on plan coordination and training may be attributed to limits on available staff time.

1. Contingency Planning for Hazardous Materials Incident Management: Spill Response and Emergency Response.

The authority for contingency planning is provided to both spill response and emergency response agencies. Both groups of agencies have prepared contingency plans at the state and federal levels. Local governments

Figure 11: **Agencies in the Hazardous Materials Incident Management System: Potential for Jurisdictional Overlaps**



may also engage in contingency planning for hazardous materials incidents either under public safety authority (for emergency response) or under environmental health authority (for spill response).

a. Potential Jurisdictional Overlaps:

i. Federal authority for spill response contingency planning under CERCLA (the Comprehensive Environmental Response, Compensation and Liability Act of 1980, also known as "Superfund") emergency response planning authority for the National Contingency Plan, to which the Department of Ecology subscribes, through the Region 10 contingency plan and the EPA-WDOE memorandum of agreement concerning the WDOE Contingency Plan for Spills of Oil and Hazardous Substances. CERCLA specifies that the National Contingency Plan should include appropriate roles and responsibilities for the Federal, State and Local governments, and for interstate and non-governmental entities in effectuating the plan." (Section 105(4).)

ii. The Washington Department of Emergency Management, in addition to its broad disaster response authority, has planning authority to prepare "a contingency plan for coordinating the management of the emergency aspects of [a hazardous materials] incident" through Executive Order 83-09. Similar emergency management authority is granted under RCW 38.52, as amended in 1984. The Executive Order states that ". . . local governments bear the primary responsibility for emergency response to hazardous materials incidents . . ." but ". . .there is a need for a comprehensive emergency preparedness program to ensure an integrated and coordinated response capability among all levels of government."

The resulting "coordination draft" of the Washington State Contingency Plan for Hazardous Materials Emergencies explicitly states that "none of the provisions of this plan is intended to preempt or supersede any part of. . .[the WDOE, EPA Region 10 or national contingency plans for spills of oil and hazardous substances, or the DSHS or NRC radiation incident response plans]" (page I-5 of September, 1983, edition). However, this emergency response plan proposes coordination procedures for incident management that include spill control and cleanup.

iii. Interagency memoranda of agreement at the state level, although proposed by DEM, have not yet reached the stage of specifying mutually satisfactory procedures approved by WDOE or DSHS.

iv. Planning authority is granted to local jurisdictions under Chapter 70.136 RCW to designate hazardous materials incident command agencies, for the purpose of providing "good Samaritan" immunities from liability for organizations which might provide help in response to an incident. Since the scope of incident command authority granted by this legislation is not clearly defined, it may be construed by local government so as to overlap emergency response authority granted state and local DEMs through Chapter 38.52 RCW, as well as the spill response authority granted to the spill response agencies.

v. WDOE and DSHS appear to have overlapping jurisdictions for pesticide spills. Chapter 70.104 RCW clarifies DSHS and WSDA jurisdictions, but does not clarify DSHS-WDOE jurisdictional boundaries. Pesticides fit the WDOE definition of "hazardous substances," for which WDOE has specific incident response coordination authority under Chapter 70.105A.060 (3a) RCW.

vi. Although radioactive materials may fit the WDOE definition of "hazardous substances," WDOE and DSHS both presently take the position that DSHS shall have sole spill response authority for radioactive material spills.

b. Potential Jurisdictional Gaps in Contingency Planning Authority for Hazardous Materials Incidents:

i. It is not clear that anyone has authority at the state level to integrate local emergency response contingency plans with state-level spill response contingency plans. DEM has authority under Chapter 38.52.030 (4) RCW to plan "the procedures to be used during emergencies for coordinating local resources as necessary, and the resources of all state agencies . . . ." However, DEM is essentially concerned with emergency response, and particularly with the coordination of the emergency aspects of a large incident. DEM encourages local jurisdictions to include WDOE regional

office representation on local Hazardous Materials Planning Advisory Committees (pp. V-4, V-5, DEM Contingency Plan). There is presently no provision in state law for review of local plans for hazardous materials incident response by the state spill response agencies.

ii. Private industries may prepare their own hazardous materials incident response plans, but except where WDOE regulates hazardous waste facilities, private industries do not seem required to prepare them, or to integrate them with relevant local and state plans.

c. Procedural Issues in Contingency Planning:

i. The Governor's newly-appointed Hazardous Materials Advisory Board, chaired by the Director of DEM, has a mandate for making incident response recommendations that seems to extend beyond the emergency response mandate of DEM. How this board can serve as a forum for the review of different agencies' contingency plans remains to be seen. Both WDOE and DSHS are respresented on this Advisory Board, as are a large number of private industries.

ii. In the absence of interagency memoranda of agreement detailing interagency procedures or lines of authority, informal coordination procedures are observed among WDOE, DSHS, WSDA and DEM. Some lag time is inevitable between the granting of authority and the preparation of detailed contingency plans, operating procedures, and interagency memoranda of agreement. At present, the DEM Contingency Plan does not seem to reflect the WDOE hazardous materials incident coordination authority granted under Chapter 70.105A.060 (3a) RCW. The WDOE Contingency Plan for Spills of Oil and Hazardous Substances has not been updated to reflect this coordination authority either. Presumably, the WDOE contingency plan will have to be updated to accommodate the DEM contingency plan once the latter is finalized. (The director of DEM is required to submit a copy of the comprehensive emergency management plan to the legislature by January 1, 1985. The DEM Washington State Contingency Plan for Hazardous Materials Emergencies will presumably be part of that comprehensive plan.)

2. Training and Other Preparations:

a. Potential Jurisdictional Overlaps:

In addition to the fire service training authority of the Commission for Vocation Education and the law enforcement training provided through the WSP Academy and elsewhere, DEM will have emergency management training authority under Chapter 38.52. 030 (5) RCW. The scope of DEM training will depend on the scope of its comprehensive emergency management plans, which are to be submitted to the legislature by January 1985.

b. Potential Jurisdictional Gaps in training and other preparation for a hazardous materials incident:

i. At present, no single state agency seems to have clear authority to plan or conduct an integrated training program for hazardous materials incident management encompassing both spill and emergency response. However, the Governor's Hazardous Materials Advisory Board is charged with determining the feasability of a program for all levels of government and the private sector. The Fire Service Training Division of the Commission for Vocational Education has authority to prepare and provide this kind of training for the public sector, but believes it does not have authority to include the private sector. DEM will be required to equip and train emergency management personnel in accordance with its comprehensive emergency management plans under Chapter 38.52.030 (5) RCW.

ii. The training mandates which particular agencies have for their licensees might be broadened to improve hazardous materials incident management. For example, the Department of Agriculture has training requirements for pesticide applicators which could conceivably be broadened to incorporate DSHS, WDOE, or local government concerns.

iii. In order to plan training for first responders, it is important to know the scope of the first responders' responsibilities, and what responsibilities can be met by other resources. As indicated by the ambiguities in current state-level contingency planning, particularly for spill containment, who has what situational responsibility is not clear.

iv. Similarly, in order to plan training for a given locality's first responders, it would be helpful to know what kinds of hazardous materials are most likely to be encountered. It does not appear at this time that anyone has authority to provide local governments or fire departments with notice of what hazardous materials are being shipped through their areas. Nor does it appear that anyone has responsibility for assembling comprehensive reports of statewide experience with hazardous materials incidents. Existing reports seem limited to each agency's internal program requirements. (DEM will be required to submit a hazard analysis of some kind to the legislature as part of its comprehensive emergency management plan in January.)

c. Procedural Issues in training and other preparation:

i. Securing staff time from different agencies will be necessary in order to plan, prepare and conduct an integrated training program. This is a feasibility issue which the Governor's Hazardous Materials Advisory Board could address.

ii. Lower levels of training and equipment preparedness are expected for volunteer fire departments than for professional fire departments. While the Fire Service Training Division could train a professional fire department's own trainer economically, providing training for volunteer fire personnel would be much more expensive. If the costs or time constraints for providing adequate hazardous materials incident response training to volunteer fire departments proves prohibitive, then the response role expected of these fire departments should be limited in state and local contingency plans.

B. INCIDENT RESPONSE

1. Detection and Notification for Spill Response and Emergency Response

a. Potential Jurisdictional Overlaps:

i. Both the emergency response and spill response sub-systems provide for the reporting of hazardous materials incidents. Definitions vary for what constitutes an incident or a hazardous material.

b. Potential Jurisdictional Gaps:

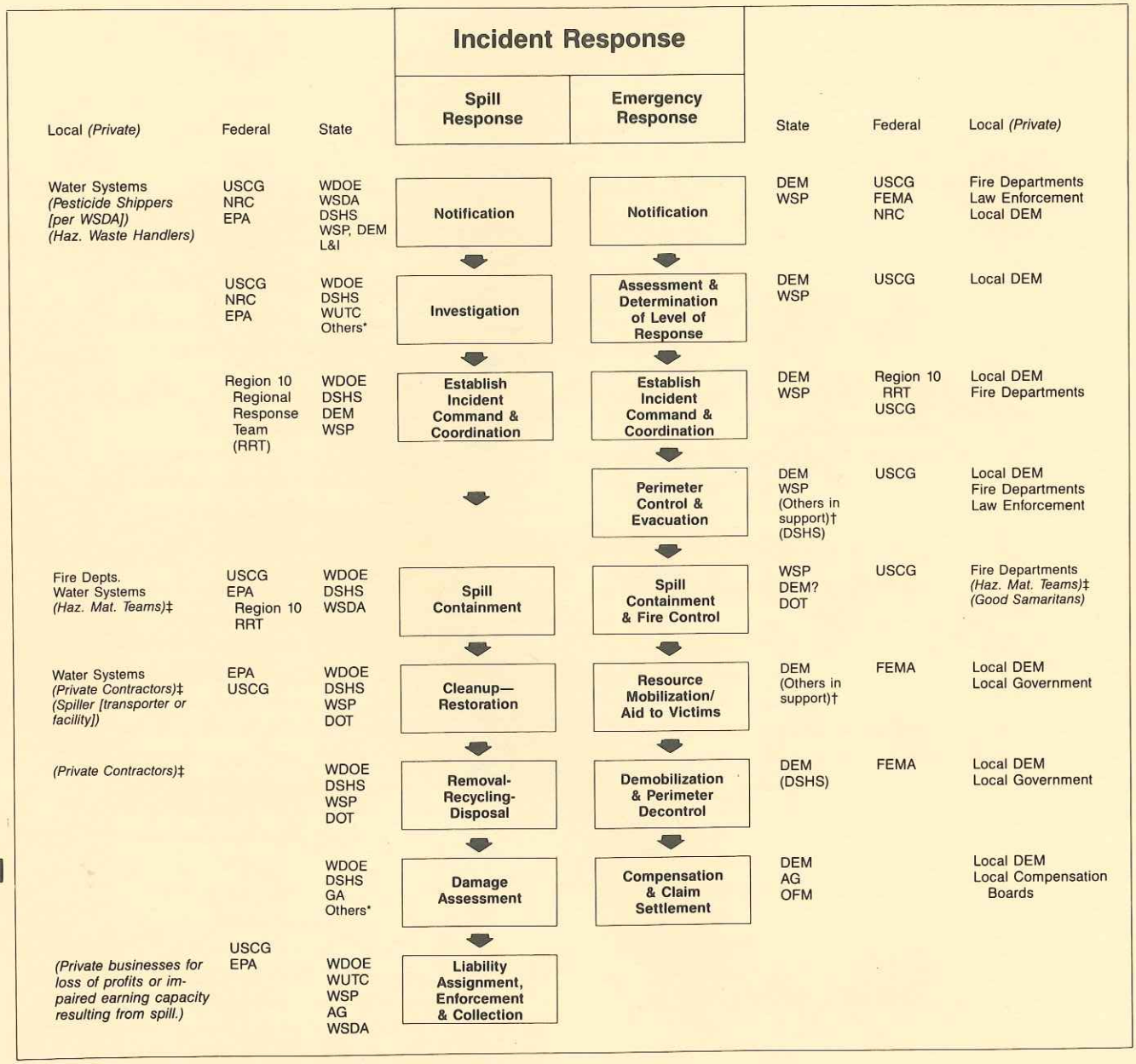
i. WUTC can detect hazardous materials spills through inspection of loading areas for common or contract carriers, but does not have such jurisdiction for private motor carriers of hazardous materials. The Washington State Patrol can open and inspect motor carriers' shipments of hazardous materials in transit, but does not have the authority to inspect their loading areas.

ii. In commercial pesticide application, it does not appear that the Department of Agriculture's enforcement powers over commercial pesticide applicators extend to notification requirements for pesticides spilled as a result of emergency dumping from an aircraft, or as a result of rinsing out pesticide containers or application equipment. (WAC 16-228-185)

iii. Notification of routine dumping of hazardous materials dumping does not seem to be required for hazardous household wastes (including household pesticides), or for commercial generators of hazardous wastes whose monthly or batch outputs fall below regulated minimums (generally under 400 pounds per month or per batch for WDOE, although some extremely hazardous wastes may be regulated at 1/100th that amount).

c. Procedural issues in hazardous materials incident discovery and notification:

i. Both emergency response (DEM) and spill response (WDOE, DSHS) agencies maintain telephone numbers for reports of hazardous materials incidents but notification procedures in effect



***Note:** Other state agencies have statutory responsibilities to respond to hazardous materials spills affecting the public resources they manage (e.g. DNR, Dept. of Game, Dept. of Fisheries). See also Appendix C-5-5 for legal analysis.

†Note: See Appendix F-1 for a partial list of private spill response and cleanup contractors.

‡Note: DEM has memoranda of agreement with several state agencies to provide support in the event of a disaster, pursuant to the Washington State Emergency Operations Plan or the Disaster Preparedness Plan. (Similar memoranda of agreement are proposed for hazardous materials emergency response, pursuant to the current draft of the Washington State Contingency Plan for Hazardous Materials Emergencies.) These agencies include: DOT, State Fire Marshal, Parks and Recreation Commission, Dept. of Game, Dept. of Fisheries.

for each local jurisdiction may vary. In practice, a local jurisdiction may consider it sufficient to notify one state agency of an incident, and leave it to that state agency to notify others as appropriate. Unless enough information is gathered by the first state agency the second will have to recontact the local jurisdiction directly to know how to respond.

2. Emergency Response:

In general, local emergency response policies and procedures may vary from county to county, and, within a given county, for different cities, towns and fire districts. The Department of Emergency Services' Washington State Contingency Plan for Hazardous Materials Emergencies describes DEM and other agencies' policies and procedures for state and federal support to local emergency management, but is otherwise only a planning and training guide for local jurisdictions. At present, approximately 81 local jurisdictions have identified local incident command agencies to DEM, but the extent to which their local contingency plans conform to the DEM plan has not been examined in this study. Therefore it is not yet possible to identify specific policy overlaps and gaps among these plans, but general jurisdictional and procedural issues can be identified.

a. Assessment and Determination of the Level of Emergency Response:

i. Potential Jurisdictional Overlap: Both the state DEM and the local jurisdiction can decide whether an incident is beyond local capacity. Despite unclear local authority, the state DEM can make an independent assessment as to whether state or federal level support is apt to be required in a given incident, if DEM is notified and provided with sufficient information. Redundancy in notification requirements is an advantage in this regard.

ii. Potential Gaps in Jurisdiction: Local responsibility for assessing emergency response requirements (particularly for perimeter control and evacuation) may not be clear for local jurisdictions that have not prepared emergency response contingency plans.

iii. Procedural Issues: Unless a disaster or state of emergency is declared (in which case the Governor may invoke emergency powers through DEM), primary authority for determining the appropriate level of emergency response seems to reside at the local level. Depending on how an incident unfolds and what local planning has been done, the local incident commander, may be the local fire chief, police chief, local DEM, or elected executive.

b. On-Scene Command and Coordination for Emergency Response:

i. Potential Jurisdictional Overlap may exist in local political subdivisions that have not done contingency emergency planning.

ii. Another Jurisdictional Issue concerns the preparedness of the local emergency response authorities for coordinating with WDOE, DSHS or local water utility spill response efforts when the state Department of Emergency Management is not involved.

iii. Potential Jurisdictional Gaps in emergency response may exist wherever a local jurisdiction has not designated a local incident command agency.

iv. The Extent of Local Incident Command Authority over a private facility is also not clear.

c. Perimeter Control and Evacuation:

i. Potentials for Overlap and Gaps in Jurisdiction seem to exist at the local level wherever incident command agencies have not been designated and local contingency plans have not been coordinated among neighboring jurisdictions. For example, the evacuation perimeter for an incident in one locality may extend into another locality.

ii. Procedural Issues include how to decide whose technical advice to follow in determining the size of the evacuation perimeter.

d. Spill Containment for Emergency Response:

i. Potential jurisdictional overlap over spill containment authority exists between emergency response and spill response agencies. In practice neither WDOE nor DSHS expects its staff to assume personal risks to contain a spill. But both have authority to contract with a private spill response team for spill containment, as do emergency response agencies.

ii. Potential jurisdictional gaps: In the absence of clear contingency planning, there does not seem to be clear authority for determining whether the spill containment strategy adopted in a particular incident should favor emergency management considerations (e.g., putting a fire out) or spill management considerations (e.g., minimizing the extent to which a toxic substance is washed into permeable soil via fire-control water runoff).

e. Resource Mobilization for Emergency Management:

i. Potential jurisdictional overlaps:
None are apparent. DEM has clear authority to mobilize state resources to help a local jurisdiction with emergency management.

ii. Potential gaps in jurisdiction seem to exist at the local level if disaster preparedness plans are not in place, or if agreed-upon thresholds for disaster mobilization do not apply in local plans to hazardous materials incidents. However, the state DEM has direct coordination authority for emergency management under Chapter 38.52 RCW.

3. Spill Response:

a. Investigation:

i. Potential overlaps in jurisdiction seem to exist wherever more than one agency has spill management responsibilities for the same substance. However, insofar as each agency con-

ducts its own spill investigation to satisfy its own enforcement responsibilities, these investigations seem necessarily redundant.

ii. Potential gaps in jurisdiction: none are apparent for spill response.

iii. Procedural issues: Both WDOE and DSHS can be contacted directly through 24-hour telephone numbers. But it is not yet clear how the timing of a spill response investigation is coordinated with a local emergency response assessment, in the absence of either active state DEM involvement or a detailed spill response contingency plan that dovetails local emergency response procedures.

b. On-Scene Command and Coordination:

i. Potentials for jurisdictional overlap may exist where more than one agency has spill response authority for the same substance (i.e., for a pesticide that is the responsibility of both DSHS and WDOE). Also, WDOE may have jurisdiction for responding to a hazardous substance spill which, because of its potential effects on public health or the local water supply, may also come under the jurisdiction of DSHS, the local health department and the local water utility.

ii. In general, spill response jurisdictions may conflict with emergency response jurisdictions, wherever a local government has incident command authority for emergency response. This jurisdictional overlap does not seem to exist on state and interstate highways, to the extent that the State Patrol's incident command procedures do not seem to include spill containment. Nor does this jurisdictional overlap seem to exist in coastal waters, where the U.S. Coast Guard has both spill response and emergency response authority.

iii. Potential gaps in jurisdiction: none are apparent.

c. Cleanup and Restoration:

i. Potential jurisdictional overlap: Both DSHS and WDOE have cleanup authority for pesticide spills, and in conjunction with local health departments, authority to clean up spills of hazardous substances that threatened

public health. (The spiller is responsible for cleanup. DSHS and WDOE can define cleanup, require it, and contract for it directly if the spiller can't or won't comply.)

ii. Potential gaps in jurisdiction: The department of Agriculture's regulations do not provide for enforcement of reimbursement of cleanup costs incurred by DSHS for the spill of a pesticide by a Department of Agriculture regulated pesticide business. Chapter 70.104 RCW provides for a hazardous pesticide spill to be cleaned up by the spiller or DSHS at the spiller's expense but WSDA finds that refusing to pay for cleanup is not a violation under WSDA law.

iii. Procedural Issues: It is not clear whether or how Federal Superfund payments for cleanup and restoration costs could be secured unless either WDOE or EPA authorized cleanup in advance.

iv. In practice, it would seem that DSHS or a local water utility would try to delegate direct contracting for cleanup to WDOE or EPA which have funding for cleanup under state or federal superfunds.

d. Removal and Disposal:

i. Potential overlaps or gaps in jurisdiction: The Washington Department of Agriculture has enforcement authority for the disposal of pesticides by its licensees, along with WDOE, where those pesticides also fall under WDOE's jurisdiction as hazardous wastes. Disposal authority for hazardous substances in a pesticide incident is granted to DSHS under Chapter 70.104.040 (2)(a) RCW. But WDOE would have overlapping authority in such an incident (plus authority over DSHS disposal as a hazardous waste generator). Otherwise, WDOE seems to have clear hazardous waste disposal authority.

ii. Potential gaps in jurisdiction: WDOE's authority for hazardous waste disposal is limited to amounts over certain minimum thresholds (generally 400 pounds per month or per batch). Household hazardous wastes do not seem to be under WDOE's jurisdiction in Section 173-303-071 WAC unless there is an imminent hazard.

iii. Procedural issues: Some delay in disposing of the hazardous waste collected from a spill site may result from manifesting requirements for shipment of the waste, and for clearance by the waste disposal or recycling facility to accept the waste.

C. INCIDENT FOLLOW-UP

1. Damage Assessment:

a. Potential jurisdictional overlaps:

i. Both WDOE (or EPA) and the public owner or manager of a public resource have authority and responsibility for conducting a damage assessment in the event of damage to that resource as a result of a hazardous materials incident. State agencies in this category would seem to include the departments of Fisheries, Game, General Administration, Natural Resources, and Parks and Recreation. Local jurisdictions would include local water utilities, in cooperation with DSHS.

ii. Both WDOE and DSHS have damage assessment responsibility for spills of certain pesticides which represent a hazard to public health.

iii. In addition, the Washington State Patrol has damage investigation responsibilities whenever motor carriers (except farmers) were responsible for incidents on public highways. WUTC also has damage investigation responsibilities for both motor carrier and rail incidents.

b. Potential gaps in damage assessment authority: None are apparent.

c. Procedural issues: While it is possible that one agency could use another agency's damage assessment in the preparation of its own findings each agency seems likely to conduct its own investigation in accordance ith its own established procedures.

2. Liability Assignment, Enforcement and Collection:

a. Potential jurisdictional overlaps: None are apparent. Each agency enforces its own regulations.

b. Potential gaps in jurisdiction:

i. WUTC does not have the enforcement authority for private carriers that it has for common or contract carriers.

ii. DSHS, while it has broad public health responsibilities, does not seem to have enforcement authority to require cleanup by the responsible party in the event of a radioactive materials spill, or collection authority to secure reimbursement for cleanup costs incurred.

c. Procedural issues: Each agency's enforcement procedures in a hazardous materials incident seem relatively fixed by its own internal procedural requirements and its particular statutory enforcement requirements.

3. Reporting: The information base for evaluation and planning and training depends on reporting.

a. Potential jurisdictional overlaps: None are apparent. Each agency's reporting requirements seem based on its own activities. WUTC publishes annual reports of "Heavy Truck - Hazardous Materials Accidents." DSHS reports radioactive materials incidents to the Nuclear Regulatory Commission. WDOE and WSDA provide reports to EPA.

b. Potential gaps in jurisdiction: No state agency seems to have authority or responsibility for preparing integrated reports of hazardous materials incidents managed by other agencies except for the transportation accidents reported by WUTC. WDOE does not publish an annual report of hazardous material spills. DEM does not publish a report of hazardous emergencies. Neither state agency nor federal agency reports are aggregated by locality to aid local planning.

c. Procedural issues: Different agencies record different information about hazardous materials incidents. In preparing summary data, each agency uses categories of hazardous materials and other incident contingencies that are largely incompatible for interagency summary report purposes. For most agencies involved in spill response reporting is geared to the larger framework of its general regulatory reporting requirements and not to its role in a hazardous materials incident management system. Emergency responders' reports are likewise not compiled for use by others in the hazardous materials incident management system.

i. State agencies have no regular procedures for providing hazardous materials incident information by local jurisdictions to those local jurisdictions.

ii. Assembling integrated hazardous materials incidents reports would now require extensive reconstruction of different agencies' summary reports from case files, or changes in internal reporting procedures, or both.

4. Evaluation:

a. Potential jurisdictional overlap: None seems apparent.

b. Potential gaps in jurisdiction: No state agency seems to have authority or responsibility for the evaluation of hazardous materials incident management statewide, with the possible exception of the Governor's Hazardous Materials Advisory Board through Executive Order 8309. The state DEM could prepare an evaluation study as part of the hazard analysis mandated under Chapter 38.52 RCW and could define its planning and coordination role to include evaluation. Similarly, WDOE could define its coordination authority under Chapter 70.105A RCW to include evaluation.

c. Procedural issues: It is not yet clear what procedures the Governor's Hazardous Materials Advisory Board may use for the evaluation of the statewide hazardous materials incident management system. To date four committees have begun meeting: Manufacturing and Use, Transportation, Mitigation Preparedness, and Response and Recovery.

5. Prevention: Although the prevention of hazardous materials incidents is actually a parallel, interrelated system to the incident management system, a brief review of jurisdictional gaps and overlaps in prevention is appropriate here.

a. Potential jurisdictional overlaps:

i. WDOE and the Washington Department of Agriculture have overlapping authority for the prevention of hazardous materials incidents involving the commercial use of pesticides.

ii. WUTC and the Washington State Patrol have overlapping responsibility for the prevention of hazardous materials incidents in motor carrier transportation. The Washington Department of Agriculture has overlapping incident prevention authority for the transportation of certain pesticides.

b. Potential jurisdictional gaps:

i. WUTC does not have the regulatory authority for the prevention of hazardous materials incidents by private motor carriers that it has for common or contract carriers. Specifically, WUTC cannot inspect the loading areas of private carriers. Placarding is still required under USDOT regulations.

ii. Local boards of health seem to have authority to regulate the disposal of household hazardous wastes and commercial hazardous wastes below WDOE and EPA minimum amounts under the Solid Waste Management Code (RCW 70.95). However, local regulations vary in the extent to which they control toxic and hazardous substances.

c. Procedural issues:

i. From an internal agency perspective, the question of how much limited staff time to devote to planning and preparing for incident management, and how much to devote to incident prevention, involves trade-offs in resource allocation.

ii. Although this report focuses on hazardous materials incident management, it should not be assumed that the reductions in risk to the environment and to public health and safety is better accomplished through quick and effective incident management than through incident prevention.

D. CONCLUSION:

Managing hazardous materials incidents has required public agencies to assume wider responsibilities. Regulatory agencies have had to assume spill response roles. WDOE's Contingency Plan for Spill of Oil and Hazardous Substances began as simply an oil-spill response plan. An oil spill is not apt to have the urgent public health risks that a hazardous materials incident may involve. And a hazardous materials incident has greater potential for emergency response, requiring coordination with public safety agencies.

Similarly, the public safety agencies--the fire departments and law enforcement agencies--are faced with new difficulties in responding to hazardous materials incidents. Their personal safety as well as public safety are exposed to greater risk. How they handle the immediate emergency in a hazardous materials incident may have great future consequences for public health and the environment.

The emergency management agencies—state DEM and the local departments of emergency management--began with civil defense roles, and were geared to managing natural disasters, "acts of God" in which questions of liability were immaterial. Now they must prepare for man-made hazards, hazardous materials incidents of potentially disasterous scale. Not only is the immediate threat to public health of potentially great concern, but so are questions of lingering public health and environmental consequences and questions of who is liable.

Both WDOE and DEM have been granted coordination authority for managing hazardous materials incidents through separate legislation. This study has clarified the distinctive spill response and emergency response roles in hazardous materials incident management, which may help future legislation and agency planning to clarify jurisdictional and procedural boundaries in incident response.

By attending to the full scope of the hazardous materials incident management system--legislation agency planning and resource allocation, contingency planning, training, reporting, and evaluation, as well as incident response--it may be possible to integrate spill response and emergency response efforts into a smoothly functioning system involving state, local, and federal agencies, as well as private industry.

This report has identified the major policies in effect for hazardous materials incident management and the major jurisdictional gaps and overlaps at each stage of incident management. By working at developing the whole incident management system and strengthening its relationship to incident prevention, public risk may be reduced and public confidence increased.

APPENDIX:

*A. Chronology of Hazardous Materials Incidents in Southwest Washington Reported to DOE and DES

*B. Preliminary Quantitative Analysis of Recent Hazardous Materials Incidents in Washington State (Prepared by Thom Lufkin)

C. STATE AGENCIES

1. Department of Agriculture
2. Department of Ecology
3. Department of Emergency Services
4. Office of the State Fire Marshal
5. Department of Fisheries
6. Department of Game
7. Department of Labor and Industries
8. Department of Natural Resources
9. Washington State Parks and Recreation Commission
10. Washington State Patrol
11. Department of Social and Health Services
12. Department of Transportation
13. Washington Utilities and Transportation Commission
14. Washington State Commission for Vocational Education

D. FEDERAL AGENCIES

1. Federal Emergency Management Agency
2. Environmental Protection Agency
3. Nuclear Regulatory Commission
4. U.S. Department of Transportation

E. LOCAL GOVERNMENT

1. Local Departments of Emergency Services
2. Fire Departments
3. METRO
4. Puget Sound Council of Governments

F. PRIVATE SECTOR

*1. Private Hazardous Materials Teams
2. CHEMTREC

*G. BIBLIOGRAPHY

*Note: Only appendices A, B, F1, and G have been published for distribution with this study due to length of the other materials and the limited audience for the detail they contain. The complete appendia is available to legislative staff, legislators, and public agency representatives upon request. Additional copes will have to be made by special arrangement with the Washington State Institute for Public Policy.

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