THE ROLE OF VIRGINIA LOCALITIES IN HAZARDOUS WASTE MANAGEMENT

by

Bibb Chilton Edwards

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APPROVED:

Dr. W. David Conn, Chairperson

Dr. John Randolph

Richard Yearwood, Ph.D.

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The handling of hazardous wastes -- their transportation, storage, treatment, and disposal -- has become a significant public issue in Virginia and the nation. The results of mismanagement of these wastes have prompted the passage of governmental regulations to reduce the risks to public health and the environment. However, regulation has taken place primarily at the federal and state levels of government, leaving the proper role of local governments ill-defined.

Citizens, concerned that current regulations may be inadequate or poorly administered, have encouraged localities to adopt generally negative positions toward both public and private hazardous waste management activities.

This paper evaluates the issues involved, the current role of local governments in hazardous waste management, both in Virginia and nationwide, and suggests that localities should carefully evaluate more positive local hazardous waste management options. Based on criteria developed in the paper, several options are suggested for consideration.

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, Virginia Manufacturers Association, Richmond, Virginia

, Virginia Manufacturers Association, Richmond, Virginia

Director of the Virginia Project, Environmental Defense Fund, Richmond, Virginia / Co-Chairperson, Virginia Toxics Roundtable

, Industrial Services Representative, Division of Industrial Development, Commonwealth of Virginia

Director of Research, Division of Industrial Development, Commonwealth of Virginia

, Former Owner, Love's Container Service, Dillwyn, Virginia

Safety, Health, & Environmental Affairs Manager, E.I. duPont de Nemours & Co. Inc., Richmond, Virginia / Co-Chairperson, Virginia Toxics Roundtable

, Institute for Environmental Negotiation, University of Virginia, Charlottesville, Virginia

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, Governmental Refuse Collection & Disposal Association, Silver Springs, Maryland

, former Hazardous Materials Officer, Office of Emergency and Energy Services, Commonweath of Virginia

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Chapter I

INTRODUCTION TO STUDY

Hazardous waste management (HWM), "...the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery and disposal of hazardous wastes",[1] has become a significant public issue in recent years. As damages from inadequate HWM practices have become evident, citizen support for public regulation of hazardous wastes has grown. The enactment of RCRA in 1976 attempted to provide a framework for "cradle to grave" supervision of private HWM practices. RCRA intended the development of a national system of uniform state regulations. Virginia adopted the first round of its Hazardous Waste Management Regulations in 1980.

Also in 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), better known as Superfund. This Act attempted to provide the authority, mechanism, and funding for the upgrading of inactive hazardous waste facilities or dumps found to be endangering the public health or the environment. However, implementation at the federal level of both RCRA and Superfund has proceeded unevenly and amid controversy.

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[1] The Resource Conservation and Recovery Act, (RCRA), PL 94-580, sec. 1004 (7) (1976).

Congress recognized the difficulty of federal regulation of such a large and decentralized activity when it chose to authorize and encourage implementation of RCRA by the states. However, state governments have had difficulty in obtaining the staffing and resources necessary to provide the comprehensive programs and enforcement envisioned by Congress. As a result of relying primarily on a regulatory approach without insuring adequate monitoring and enforcement, responsibility for the reaching of RCRA's goals has largely depended on voluntary compliance by those handling the nation's hazardous wastes.

As governmental regulation has developed "from the top down," the role of local government has remained ill-defined and largely unexplored.[2] Damage from inadequate HWM practices is usually confined to the localities where the mismanagement has taken place. Local public and private costs from improper HWM practices have often been substantial. Local citizens and officials are usually the first to recognize threats to public health and the environment. Yet, local go-

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[2] For example, a recently published book, Hazardous Wastes in America, Epstein, Brown, & Pope, (San Francisco Ca.: Sierra Club Books, 1982), "...the most detailed and exhaustive study yet available...," virtually ignores any reference to local governments. However, on a more positive note, the Commonwealth of Virginia has recently sponsored the publication of "A Guide For Local Government To Assist In Understanding Their Role In Hazardous Waste Management," (RAM, Inc., 1983).

vernments have often felt that they had neither the authority nor the mandate to act to protect their citizens from the local mismanagement of hazardous wastes. Dependent upon the ability and inclination of federal and state agencies to administer and enforce appropriate regulations, the fiscal distress now plaguing many localities has discouraged the development of local programs. Indeed, localities nationwide have played but one consistent role during recent years: providing a forum for public outcries concerning past and planned HWM activities. In fact, localities often have positioned themselves against federal and state agencies engaged in developing HWM programs and facilities.

However, some localities throughout the country, including some in Virginia, have begun to recognize the need for more positive local government involvement in HWM issues. The purpose of this study is to evaluate the role currently played by local government in hazardous waste management and to suggest appropriate local HWM programs for Virginia localities. After an introduction to hazardous wastes -- definitions, scope, regulations, and issues -- this study outlines HWM programs and policies currently being undertaken by local governments. These have been identified through interviews, reviews of the literature, and survey. The pro's and con's of local involvement in HWM are then discussed.

Criteria are then suggested that may be used by a locality to determine its HWM options. Twenty possible local HWM options are then presented, and conclusions drawn.

It is intended that this study be useful to local and state officials as they consider what role, if any, localities should have in the public regulation and supervision of hazardous wastes in Virginia.

Chapter II

HAZARDOUS WASTES

The ability of men to reshape their environment through the modification of natural processes and the manufacture of useful products from natural materials has been a major factor in the development of civilizations. Yet as beneficial as these activities have been, real, if often subtle, dangers have sometimes resulted. Humans, and other forms of life, have become exposed to substances that have been concentrated, modified, and increasingly, created, by man. Many can pose substantial and unacceptable dangers. Some of these materials may be toxic - causing death - even in minute concentrations. Others can cause illness, genetic damage, or cancer. Some can easily explode, produce dangerous gases, or cause fires. When the risks are judged to be too great we have labeled these materials "hazardous" and subject to special regulation.

While humans have always been faced with exposure to hazardous materials, the continuing industrial revolution has greatly increased their volume. Used as raw materials in the manufacture of modern products, these substances have become widely spread. The capacity of the environment to dilute or disperse these substances, reducing their danger, has in

many cases been exceeded. In addition, the introduction of millions of tons of synthetic chemicals over the past 40 years - many with unknown long term effects - has added a new and disquieting dimension to the problem. The well documented dangers from chemicals such as TRIS, PCB's, and DDT have forced limitations to be placed on their manufacture and use. Congress enacted the Toxic Substances Control Act (TSCA) in 1976 to provide better controls over these dangers.

While still a considerable problem, proper control over hazardous materials is made somewhat easier by their value. Those using these substances, as raw materials or finished products, have some incentive to keep them under control. The same cannot be said for hazardous substances that have lost their value or have been created as useless by-products. These substances have become wastes. Not surprisingly, their owners have traditionally sought to dispose of them as quickly and cheaply as possible, often with disastrous results.

2.1 DEFINITIONS

As commonly defined,[3] a Hazardous Material is any material that exhibits certain toxic, flammable, explosive, reactive or similar characteristics which could threaten public health or the environment. Hazardous materials are generally comprised of:

1. Hazardous Substances - Usually raw products used in the manufacture of goods or products, and
2. Hazardous Wastes - Materials exhibiting a hazardous characteristic, which have been discarded and no longer have economic value.

Thus the difference between a hazardous substance and a hazardous waste hinges on whether the owner plans to use or discard it. These distinctions become quite important because, in many cases, hazardous wastes are regulated separately and differently from hazardous substances.

2.1.1 Characteristics

Congress, in enacting RCRA, defined a hazardous waste as:

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[3] Webster's and common usage would reverse the definitions for hazardous substances and hazardous materials. However, for clarity, the terms will be used as they most often appear in the literature and federal publications.

[4] A solid waste, as defined by RCRA, is "...solid, liquid, semisolid, or contained gaseous material...."

> a solid waste[4] which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality, or an increase in serious irreversible, or incapacitive reversible illness, or pose a substantial present or potential threat to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

RCRA required the United States Environmental Protection Agency (EPA) to develop and promulgate criteria for identifying the characteristics of hazardous waste. In 1980 EPA published the four criteria it would use to identify a hazardous waste:[5]

Toxicity - wastes that, when improperly managed, may release toxicants in sufficient quantities to pose a substantial hazard to human health or the environment

Ignitability - wastes that pose a fire hazard during routine management

Corrosivity - wastes requiring special containers or segregation from other wastes because of their ability to dissolve toxic contaminants

Reactivity - wastes that tend to react spontaneously, to react vigorously with air or water, to be unstable to shock or heat, to generate gases, or to explode

RCRA regulations also listed 239 substances that are, by definition, hazardous when discarded. Further, the regulations allow a handler of a waste to simply declare it hazar-

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[5] Radioactive wastes were specifically omitted from RCRA.

dous and subject to regulation.

EPA stated that the identification process should depend on widely available and uncomplicated testing methods. Thus, EPA omitted several possible characteristics, including carcinogenicity, mutagenicity, teratogenicity, bioaccumulation potential, and phytotoxicity. EPA felt that current testing procedures for these characteristics were either insufficiently developed, too complex or lengthy, or too dependent on highly skilled personnel and special equipment to be consistently valid or reliable. EPA also felt that existing knowledge did not allow the identification of numerical threshold levels at which wastes exhibiting these properties would become hazardous. Both of these administrative decisions have brought charges that the identification process is, at best, incomplete.

2.2 SCOPE

The amount of hazardous substances and hazardous wastes produced each year is unknown. The lack of requirements for recordkeeping and the various and changing definitions of what is, or is not, hazardous have made estimates unreliable. Industries using these materials tend to be secretive. However, it is generally understood that the amount generated each year is quite large. Recent estimates quoted by the

Office of Technology Assessment place U.S. generation at between 255 million and 275 million metric tons (tonnes) of hazardous wastes each year, more than a tonne for person in the nation. However, only about 40 million tonnes of this total are encompassed by federal definitions.[6] EPA has estimated 750,000 generators and 10,000 transporters of hazardous wastes nationwide.[7] An EPA contractor has also estimated that of an estimated 32,000 to 51,000 disposal sites that may contain some hazardous wastes, 1,000 to 2,000 may pose significant risks to human health and the environment.[8]

In Virginia estimates of generation have varied from 1.50 million tonnes per year[9] to 104,000 tonnes per year.[10] As a result of RCRA regulations that became effective in 1980, 882 generators, 186 transportors, and 230 treatment, sto-

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[6] U.S., Congress, Office of Technology Assessment, Technologies and Management Strategies for Hazardous Waste Control, OTA-M-197, (Washington D.C.: U.S. Government Printing Office, 1983), p. 119. Hereafter known as OTA Report.

[7] U.S., Environmental Protection Agency, Attack on Hazardous Wastes: The Challenge of the 1980's, Pubn. SW-845 (Washington D.C.: U.S. Government Printing Office, 1980).

[8] Fred C. Hart Associates, Preliminary Assessment of Cleanup Costs for National Hazardous Waste Problems, Contract # 68-01-5063, (Washington D.C.: EPA, Office of Solid Waste, 1979), p. 25.

[9] National Wildlife Federation, 1980.

[10] Malcolm Pernie, Inc., Survey of Hazardous Waste Generators in the Commonwealth of Virginia, (Richmond Va.: Virginia State Department of Health, 1982), p. 1.

rage, and disposal (TSD) facilities initially applied for permits to operate within the Commonwealth.

Producers of hazardous wastes include hospitals, research facilities, governments, and the largest of all, industry. Major waste-producing industries are: primary metals, organic chemical and related industries, textiles, inorganic chemicals, petroleum refining, and rubber and plastics.

2.3 DISPOSAL TECHNIQUES

Approximately 80% of the hazardous wastes generated in the U.S. are managed on-site where they are produced. The remaining 20% are transported to municipal landfills, ocean dumping sites, or commercial, off-site treatment, storage and disposal (TSD) facilities. There are approximately 100,000 on-site facilities and only 110 or so off-site facilities, usually located in or near industrial areas.[11] In 1980, EPA listed the options for managing hazardous wastes from the most to the least desirable. They were:

1. Source Reduction - Minimize the amounts generated by modifying the industrial process

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[11] Sidney M. Wolf, "Public Opposition to Hazardous Waste Sites: The Self-Defeating Approach to National Hazardous Waste Control Under Subtitle C of the Resource Conservation and Recovery Act of 1976." Boston College Environmental Affairs Law Review, 8, (1980), p. 476.

2. Waste Exchange - Transfer the wastes to another industry that can use them
3. Resource Recovery - Reprocess the waste to recover energy or materials
4. Source Separation - Separate hazardous from nonhazardous wastes at the the source, thus reducing costs of handling, transportation, and disposal
5. Treatment - Incinerate the wastes or subject them to other treatment that makes them nonhazardous
6. Containment - Dispose of the wastes in a secure landfill that is located, designed, operated, and monitored, even after it is closed, in a manner that protects life and the environment

2.4 PROBLEMS AND ISSUES

2.4.1 Landfilling

Generators of hazardous wastes have traditionally, and not unexpectedly, sought to dispose of their wastes at the least possible cost. While the technology has generally been available to treat, store, and dispose of hazardous wastes in a reasonably low risk manner, until recently there have been few economic or legal incentives to use these methods. Such techniques can cost 10 to 40 times more than questionable methods like simple dumping, ponding, or burial. Therefore,

by far the most common solutions to the problem of hazardous wastes have been pits, ponds, lagoons, or landfills. EPA has estimated that 80% of all hazardous wastes are so managed. But these methods can hardly be described as disposal. EPA recently estimated that 90% of landfill sites were nonsecure and failed to meet federal safety standards. In a 1977 EPA survey of on-site land disposal areas, toxic chemicals were found leaching into groundwater in unacceptable concentrations in 43 of 50 cases. Given that many hazardous wastes remain dangerous many years after landfilling, the EPA admission that:

> the regulation of hazardous waste land disposal must proceed from the assumption that migration of hazardous wastes and their constituents and by products from a land disposal facility will inevitably occur.[12]

has disquieting implications for communities that rely on groundwater for water supplies.

A recent EPA study indicated that capacity utilization of alternate technologies was poor. Low market demand, plus regulatory uncertainty and siting opposition, has discouraged investment in TSD facilities and innovative technology. While there has been some movement toward encouraging alternate, less risky forms of HWM through the regulatory process, the long term dangers from landfilling are likely to

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[12] U.S., Federal Register, Vol. 46, No. 24, Feb. 5, 1981. p. 11129.

be with us for many years.

2.4.2 Midnight Dumping

While considerable ecological and human damage has been caused by improper HWM by large corporations, much attention has been focused on the activities of the smaller generators and waste disposal companies. On-site disposal is economically infeasible for many small generators. Some have been more than happy to contract to the lowest bidder, and have their wastes and their responsibilities hauled away. This has led to a proliferation of small waste disposal companies. While many such companies have made good faith attempts to dispose of these wastes properly, some have had neither the expertise, resources, nor inclination to do so.

With no requirement to keep records of the source, composition, and disposition of these wastes, and with economic pressure to keep expenditures low, too many handlers have found it easy and profitable to dump wastes in municipal landfills, rivers, sewers, along roadsides, vacant lots, and farmland. Trailers filled with hazardous cargo have been found abandoned in parking lots, forcing localities to accept the costs and risks of disposal. Dubbed by the media "Midnight Dumpers," many of the offenders have disappeared when the effects have been noticed and the time has come to

pay for damages and cleanup. Whether these damages have been the result of ignorance - as in Times Beach, Missouri - or deliberate violation of the law - as in Warren County, North Carolina - until very recently regulations that could protect the health and safety of citizens were incomplete or non-existent. Recently upgraded HWM standards, especially the RCRA-mandated manifest system of tracking wastes, and increased public awareness of the dangers of such practices, may have a discouraging effect on illegal dumping. However, the rising cost of compliance with new HWM regulations and questionable enforcement capability may encourage some waste handlers to skirt the law.

2.4.3 Siting of Commercial Off-site TSD Facilities

It is generally agreed that new commercial off-site TSD facilities are necessary if the goals of RCRA are to be met. The rising cost of disposal as RCRA regulations become effective, for both on and off-site operations, is thought likely to force many marginal facilities to close. Convenient facilities are said to be necessary to reduce the excessive costs that many generating industries must absorb as they ship wastes to the few existing facilities. More and closer facilities are also thought to reduce the temptation and likelihood of illegal dumping. Accordingly, EPA esti-

mated in 1980 that 50 to 125 new facilties would be needed within the next 5 years. However, citizens living in a community where a facility is being planned often feel that they have little to gain and much to lose.

While increased governmental regulation of HWM facilities should mean a higher level of public health and environmental protection, the growing awareness of past hazardous waste mismanagement and governmental regulatory turmoil has increased local resistance to the building of new facilities. Local opposition to the siting of such facilities has given rise to the NIMBY[13] Syndrome and LULU's.[14] Local opposition has become so effective that the siting process has come to a virtual halt. More than one observer has described the siting issue as "The most difficult problem in dealing with hazardous wastes...."[15] Citizens have often enlisted the aid of local governments to oppose both private and state efforts to site TSD facilities. Localities have responded with zoning controls, operating restrictions, and court injunctions. Local governmental meetings have served as forums to express citizen concerns and focus media atten-

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[13] (N)ot (I)n (M)y (B)ack (Y)ard

[14] (L)ocally (U)nwanted (L)and (U)ses

[15] For an example see Russell F. Rhodes, "Planning for Hazardous Waste Management," Journal of Environmental Health, Vol. 45, No. 1, July/August 1982, p. 17.

tion. Local politicians, representing their constituents, have worked to discourage state intervention.

Some states, including Virginia, recognizing the benefits of new facilities for industrial development, public health, and environmental reasons, have included authority in their HWM Regulations for state ownership and/or operation of TSD facilities. In addition, 25 states have adopted laws to establish formal procedures for the siting of new facilities. Virginia's General Assembly, in response to the Buckingham County siting failure,[16] directed their Solid Waste Commission to study the need for siting laws in Virginia and recommend possible legislation for consideration in the 1984 session. However, these state activities have injected their own element of uncertainty into the siting process. Despite recent state involvement, construction and permitting of new HWM facilities are still at a virtual standstill.

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[16] For more information about the Buckingham incident and siting problems see R. Collins and E. Waters, "Hazardous Waste Management in Virginia," Newsletter, Institute of Government, University of Virginia, Vol. 59, No. 4, December, 1982.

2.4.4 Emergency Response

Given the amount of hazardous substances being handled each day, emergency situations, often called episodes, invariably occur. The most common types of episodes result from motor vehicular, rail, and water-borne transport accidents.[17] In addition, spills, or accidental releases from industrial facilities, including TSD facilities, are all too common. As during other forms of disaster, natural or man-made, local government is almost always the first line of defense in protecting public health and environmental quality.[18] Fire departments, emergency medical services, police, and public works departments are frequently called upon to render services under difficult and often novel circumstances.

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[17] Virginia reported 2,993 hazardous materials highway incidents from 1971 to 1981 to the U.S. DOT, resulting in 10 deaths and 45 injuries. 125 rail incidents were reported during the same time period with 31 injuries. R. L. Rawls, writing in Chemical and Engineering News, Vol. 58, No. 47, (1980), estimated one truck in ten and one freight train in three carries hazardous materials.

[18] Although Superfund authorizes the federal government to respond directly and quickly whenever there is a release or threat of release of a hazardous material into the environment that presents an imminent and substantial danger to public health, welfare, or the environment, EPA policies have minimized this role. However, as a result of a recent internal evaluation of Superfund by EPA and new leadership, these policies are now being revised. See "EPA to Speed up 'Superfund' Cleanup Effort" Roanoke Times & World-News, 14 May, 1983.

While many of the tasks that need to be performed in a hazardous substance episode are not much different from those needed in other disasters, there are important differences. All too often these differences have led to inappropriate responses, causing additional injury, death, liability and costs.[19] For the most part little attention has been given to providing the training and equipment needed for localities to sucessfully deal with hazardous materials episodes. In addition, while localities have been struggling to cope with new EPA, federal Department of Transportation (DOT), and state regulations regarding hazardous waste episodes, few seem aware of the RCRA implications for local government. Observers have generally concluded that the expertise, planning, and coordination necessary for appropriate local response to both hazardous materials episodes and regulatory requirements are generally lacking.[20]

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[19] For a good discussion of hazardous materials incidents in Virginia see "What Now" and "Hazardous Materials... And Then Some," C. W. Ramsey, former Hazardous Materials Officer, Office of Emergency and Energy Services, Commonwealth of Virginia, in Virginia Town and City, Vol. 15, Nos. 3 & 4, March and April, 1980.

[20] See K.J. Tierney, "Community and Organizational Awareness Of And Preparedness For Acute Chemical Emergencies," Journal of Hazardous Materials, 4, (1981), pp. 331-342.

2.4.5 Regulatory Uncertainty

For public regulation of private activities to be effective the regulated community must have reasonable, consistent regulations that allow planning for orderly compliance. Public support for regulatory agencies depends upon the perception that the agency has both the ability and inclination to insure compliance. Unfortunately, HWM regulation since the passage of RCRA has featured none of these requirements.

EPA administration of RCRA, under the Carter administration judged slow and inept by many, has suffered from almost constant turmoil under the leadership of President Reagan's first EPA administrator, Ann Gorsuch Burford. Allegations of mismanagement of RCRA/Superfund have led to Congressional investigations and the resignation or firing of virtually all the agency's top leadership, including Mrs. Burford. Having taken office with the goals of regulatory reform and the "New Federalism," the Reagan administration sent mixed signals to the nation, creating a climate of uncertainty within the regulated community and distrust among environmental observers. Regulations have been placed under 'regulatory impact analysis,' suspended, reversed, retracted, delayed, and revised until neither the public nor the regulated community knows what to expect next. Enforcement of RCRA regulations had become so diminished that Congress

initiated investigations.[21] While the budget for hazardous waste programs has fared better than most programs in the recent EPA cutbacks, critics have argued that EPA has deliberately underestimated the resources necessary to carry out RCRA mandated programs.[22]

In 1978 the Division of Solid and Hazardous Waste Management's Bureau of Hazardous Waste Management (BHWM) was created within the Department of Health to develop and administer Virginia's Hazardous Waste Management Regulations, as encouraged under RCRA. Although the BHWM has developed the capability necessary for it to receive authorization to administer the first phase of a RCRA equivalent HWM program, personnel and budget constraints have limited its ability to provide comprehensive protection from hazardous waste mismanagement.

The BHWM also has serious public relations problems resulting from the Buckingham County siting failure. The BHWM was seen by many as an agent of the hazardous waste disposal industry and in opposition to the wishes of the citizens of

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[21] U.S., House, Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, Hazardous Waste Enforcement, 97th Congress, 2nd Session, Committee Print 97-NN, (Washington D.C.: U.S. Government Printing Office, December 1982).

[22] National Wildlife Federation, Shredding the Environmental Safety Net: The Full Story Behind EPA's Budget Cuts, (Washington D.C.: National Wildlife Federation, February 1982).

the County. Having the dual mandates of regulation and promotion of TSD facilities, many see the BHWM has having to serve two conflicting purposes. In addition, the current involvement of the BHWM with the possible siting of a low-level nuclear disposal facility in the state has added to the distrust and confusion.

The other state agency closely associated with hazardous waste issues, the State Water Control Board, has come under increasing criticism in its handling of pollution cases. The recent forced resignation of its Executive Director on the heels of allegations of collusion with VEPCO concerning a PCB oil leak in Chesterfield County has done little to reassure citizens that the state has the willingness to enforce the regulations it has so recently adopted.

Despite the generally competent and well-meaning efforts of these state agencies, the Commonwealth has yet to demonstrate its willingness to allocate the resources necessary to provide an active and comprehensive HWM regulatory program.

2.4.6 The "Small Generators" of Hazardous Wastes

Both existing Virginia and federal regulations provide some exemptions for those who generate less than 1000 kilograms of most hazardous wastes per month. These small generators are exempted from the notification, recordkeeping, and re-

porting requirements required of larger generators. However, they must either treat or dispose of their wastes in an on-site facility or insure delivery either to a permitted TSD facility or a sanitary landfill. These exemptions were granted for practical administrative reasons, not because of any evidence that there were quantities below which the wastes were not dangerous.[23] The Office of Technology Assessment has recently stated that "millions of tons of federally exempted hazardous wastes (ends up in) sanitary landfills," where it poses "substantial risks."[24] This situation can easily become a major problem for localities which own and operate such landfills. Since a particular landfill may receive wastes from many small generators, the total quantity entering the landfill may be substantial. If landfills choose to accept these wastes they then must accept the liability these waste imply. If they choose to ban these wastes, they may find themselves encouraging illegal dumping.

Unfortunately, because small generators are "out of the system," the magnitude of the impacts of the small generator exemption is unknown. Under current federal and state regulations this condition is likely to continue. Again, the lo-

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[23] U.S., Federal Register, Vol. 45, No. 98. May 19, 1980, p. 33104.

[24] OTA Report, p. 3.

calities are faced with the consequences of state and federal regulatory decisions and private HWM activities.

Chapter III

CURRENT LOCAL HWM ACTIVITIES

Generally, localities are now playing reactive and defensive roles in HWM. While reaction to emergencies has been a traditional local government function, the other roles have proven novel and challenging.

3.1 EMERGENCY RESPONSE

3.1.1 Transportation Accidents

While threats to public health and environmental damage from hazardous materials[25] can occur from long term exposure to small quantities, the most dramatic dangers have often arisen as a result of accidental discharge during transport. As with other types of accidents, these episodes bring response from the traditional local agencies: police, fire departments, and emergency medical units. However, when hazardous materials are involved the results are often non-traditional.

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[25] Although hazardous substances are found in much greater volume than hazardous wastes and generally present greater danger, until the threat of injury or death is over emergency response procedures are the same. In addition, in most cases a hazardous substance becomes a hazardous waste upon release into the environment. As such it become subject to hazardous waste regulations.

Since emergency response has traditionally been a function of local government, many staffed partially or entirely with volunteer personnel, many localities have learned painful lessons in modern day emergency response. To quote a recent publication prepared for the Virginia Department of Health, Division of Solid and Hazardous Waste Management:

> Spills or other sudden releases probably represent the single most important hazardous waste management issue which local governments are likely to face. Unfortunately, history has shown that many such incidents could have been handled better. Mismanagement of spills can result in unnecessary loss of life, personal injury, property damage, and environmental abuse.
>
> Every jurisdiction that has a highway, railroad, trucking terminal, industrial plant, etc. has the potential for a hazardous material or waste incident at any time. How any such incident is managed determines to a large extent the ultimate costs and consequences....the management of such occurrences, at least during the critical phases, is basically the responsibility of local government.[26]

While these potentials for disaster have been understood by local officials, the episodic nature of these events and the fiscal constraints facing localities have served to retard local efforts to improve hazardous materials accident response capability. Those Virginia localities which have accepted the responsibility of preparing for hazardous ma-

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[26] Residuals Assistance & Management Inc. (RAM), A Guide for Local Government to Assist Them in Understanding Their Role in Hazardous Waste Management, n.p., April 1983, p. 28.

terials accidents "...have often worked without any real perspective and their goals have been frustrated by a lack of cooperation from other local governments and state agencies."[27]

While progress has been slow, the Commonwealth is beginning to provide the coordination, training, and equipment to local agencies attempting to improve their hazardous materials accident response capability. 1981 was the first full year of operation of the state's Hazardous Materials Response Team, attached to the Office of Emergency and Energy Services. Operating from the State Police Headquarters in Richmond with one full-time officer and limited equipment, the unit is the lead state agency in hazardous materials accident response. While the unit has some capability for dealing directly with incidents, and has done so when requested by local officials, its most important mission has been the development of a coordinated state program of assistance to localities in preparing and planning for accident response.

The Virginia localities that have taken the lead in hazardous materials accident response, predictably, have been those that have perceived the need based on the likelihood

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[27] C. W. Ramsey, "What Now," Virginia Town & City, Vol. 15, No. 3, March 1980, p. 5.

of incidents[28] and that have the funds to allocate. Working primarily through fire departments, the cities of Newport News, Harrisonburg, Roanoke, Virginia Beach, and Covington, and the counties of Augusta, Chesterfield, Henrico, and Fairfax are said to have made the greatest strides in developing appropriate response capability.[29]

3.1.2 Non-Transportation Accidents

Since hazardous materials transportation accidents usually occur on public land and endanger those using transportation corridors, the timely response of local agencies is expected. However, even in incidents on private property, such as a manufacturing site or TSD facility, local agencies may be called upon.

Hazardous materials accidents vary considerably in their dimensions and danger. Most occurring on industrial sites are handled either by internal response brigades or by private disposal companies under contract to the owner of the materials. While it may be easy to forget during an emergen-

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[28] This capability has not always developed where there seems to be the greatest chance of accidents. See Price, Schmidt, and Kates, Multi Modal Hazardous Materials Transportation in Virginia, (Blacksburg, Va: Virginia Polytechnic Institute and State University, 1981).

[29] From interviews of Michael M. Cline, Operations Division, Office of Emergency and Energy Services, Commonwealth of Virginia, Roanoke Times & World News, May 11, 1982 & March 31, 1983.

cy, cleanup is generally the responsibility of the owner, not the government. There are two cases, however, when local agencies may become involved, even on private property.

- local emergencies -

Under the "Emergency Services and Disaster Laws" of Virginia a "man-made disaster" is defined in part as:

> injurious environmental contamination which threaten or cause damage to property, human suffering, hardship or loss of life.[30]

The Code defines a "local emergency" as:

> the condition declared by the local governing body when in its judgement the threat or actual occurrence of a disaster is or threatens to be of sufficient severity and magnitude to warrant coordinated local government actions to prevent or alleviate the damage, loss, hardship or suffering threatened or caused thereby;...

Local involvement, then, is indicated if in the judgement of local officials a local emergency exists. This involvement usually occurs in the first two of the three basic phases of an emergency:

1. Critical - when there is actual or imminent damage or danger to life or public safety, and
2. Containment - when the immediate threats have passed and emphasis is placed on elimination of danger to property or the environment.

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[30] Virginia, Code of Virginia - 1950, 44-146.16.

The third phase, Clean-up, is generally the responsibility of the owner. However, too often, overanxious local governmental units have taken it upon themselves to become involved in this phase and have incurred liability for inappropriate actions.

- RCRA required contingency plans -

Under federal and state regulations, all TSD facilities must have a contingency plan which specifies actions to be taken during a hazardous waste emergency. The plan must describe arrangements between the owner/operator and local police, fire departments, hospitals, contractors, and state and local emergency response teams. Responsibility is placed on the owner/operator to make these arrangements. Local governments and emergency service agencies must also be given the opportunity to participate in the development of these plans. The facility owner is then required to furnish copies of the plan to all those who may be called upon in an emergency.

These provisions imply a potentially strong and active role for localities which have a TSD facility. However, facilities with "interim status" permits, currently all facilities in Virginia, are not required to file these plans with EPA or the BHWM. Until these facilities are reviewed as part

of the final permitting process, local governments are the only responsible outside parties to evaluate their quality. It is also possible that the local responses called for in these plans may be beyond the ability of local agencies. Lanier Hickman, Executive Director of the Governmental Refuse Collection and Disposal Association has written:

> However, much of local government is not prepared for this [emergency response] role. Local government does have the tradition of responding to emergency occurrences, but their ability to deal with the far more sophisticated requirements of coping with a hazardous waste emergency has not been appreciated on the part of either state government, EPA, or DOT. In discussions we have held with local government, we frequently find that they are not aware of this provision of RCRA or whether their industries have complied with the emergency preparedness and contingency plan provision of the regulations.[31]

3.2 OPPOSITION TO SITING AND OPERATION OF HWM FACILITIES

Localities have tended to be tolerant of the on-site TDS facilities of established local industries that provide jobs and strengthen the tax base. However, the siting or expansion of commercial off-site facilities invariably has led to substantial, and most often overwhelming, local opposition. Citizens have called upon their local governments for pro-

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[31] H. L. Hickman, "Hazardous Waste Management and Local Government," Proceedings From the Technical Sessions - GRDGA 20th Annual International Seminar & Equipment Show, n.p., October 1982, p. GS-16. Hereafter called GRDCA Proceedings.

tection from the anticipated dangers. Localities have responded with ordinances and lawsuits designed to discourage the planned activity. Because few localities generate enough hazardous waste to justify a commercial off-site facility by themselves, the benefits of a commercial off-site facility are usually state or region wide. However, in the case of HWM facilities, the interests of the regional many consistently have lost to the fears of the local few.

Opposition to siting proposals or operational changes usually begins with those owning property adjacent to the proposed site. Organizations are formed, petitions circulated, outside experts hired, and letters written to the media, regulatory agencies, and local, state, and federal officials. Local landowners involved in the project often incur the wrath of neighbors. Public meetings associated with the project provide further opportunity for public opposition to attract media attention. These actions alone are often enough to halt a project.

The second level of opposition involves influencing elected officials who must approve some phase of the project - permits, zoning requests, development assistance, etc. Local officials often find it easier to agree with a vocal group of constituents rather than consider the proposal of "outsiders" on its own merits.

The third level of opposition involves the enactment of local ordinances or zoning restrictions that either ban the activities planned for the facility or so regulate the operation of the facility as to render it impossible to operate. This may include restrictions on transport of hazardous wastes, siting, place of origin of wastes handled, financial requirements, or hours of operation. While many of these ordinances have been poorly written and of questionable legality, they have served to formally express what is considered to be the will of the community.[32]

The fourth level of opposition involves lawsuits or requests for injunctive relief in state or federal courts. Often local governments have initiated these actions or have become party to them. While numerous grounds for suit can be found in the wide variety of statutes and precedents of common law, this approach has not enjoyed much long term success.[33] However, again as a delaying tactic causing the owner to reconsider his plans, these suits have been effective.

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[32] Many Virginia localities have enacted or are considering such ordinances. Some have been the subject of HWM siting studies or are being considered for a possible low-level nuclear disposal facility.

[33] The Buckingham County case in Virginia, and the Wilsonville case in Illinois, are examples of successful applications of this approach.

The final level of local opposition are tactics that violate the law - cases of civil disobedience, threats against property and life, and vandalism.[34] Those appearing at public meetings have often been surprised at the level of hostility of facility opponents. A recent study conducted for EPA has stated:

> The controversies surrounding particular sites or facilities have reached levels of stridency impossible to convey in reports such as this one. In one case studied, an angry mob was prepared to blow up a facility, but was convinced not to. There were two reports, impossible to confirm, of threats of death or physical harm to key individuals or their families. In one case the threat was reportedly made to a facility sponsor, in another to a local official who opposed a facility.[35]

Given the possibility of such a reception in a locality, it is not surprising that so few facilities have been proposed in the past few years, let alone built.

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[34] This tactic is more common than one would expect. Recent incidents include Bayou Sorrel, Louisiana; Wilsonville, Illinois; Warren County, North Carolina; and the Buckingham incident here in Virginia.

[35] Centaur Associates, Siting of Hazardous Waste Management Facilities and Public Opposition, Pubn. SW-809, (Washington D.C.: U.S. Government Printing Office, 1979), p. III.

3.3 COMPLIANCE WITH FEDERAL AND STATE REGULATIONS

The responsibility for HWM, as we have seen, is placed firmly on private industry with governments playing a regulatory role. However, local governments have traditionally collected solid wastes and owned and operated solid waste disposal facilities, usually dumps or landfills. Given the tendency of all solid wastes to flow "downhill" to the lowest common demominator - the disposal facility - it is likely that all localities providing solid waste services have handled hazardous wastes, and may continue to do so. Thus, local governments become directly involved in the business of hazardous waste management.

As potential or actual handlers of hazardous wastes, local governments have had to decide when to declare themselves subject to the new HWM regulations. Lanier Hickman has observed:

> It is probably safe to assume that for the most part, local government decided to opt themselves out of the role of owning and operating hazardous waste disposal facilities.[36] To do this, of course, required local government to determine what wastes were coming into their facilities that would qualify as a hazardous waste and then take appropriate steps to stop the entrance of those wastes into their disposal facilities.[37]

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[36] In Virginia no localities are currently "in the system" as owners/operators.

[37] GRDCA Proceedings, p. GS-14.

In making these determinations the locality must make numerous policy decisions concerning standard operating procedures. Given the ability of permitted sanitary landfills to accept small quantities of otherwise hazardous wastes under the "small generator exemptions," these procedures become quite important when liability for potential public health and environmental damages is considered.

Superfund regulations also affect localities that operate, or have operated, solid waste disposal systems. Under Section 103 (c), by June 9, 1981 all who have ever transported or received a hazardous waste or substance for disposal must have notified EPA. While municipal landfills were expressly exempted from notification requirements if they had received conventional solid wastes only, many landfills may have unknowingly accepted hazardous waste in the past. In the absence of records indicating the presence of hazardous waste in a landfill, localities seem to have chosen not to file.

A second Superfund related activity is working with state and federal officials in evaluating sites for possible Superfund cleanup. If cleanup using federal funds is indicated, the local role in the evaluation of alternatives, public participation, and coordination of activities may become substantial. Depending on the alternative chosen by EPA the

local involvement with a Superfund site may just be beginning once the cleanup has finished. Long term monitoring or maintenance of the site may well become a local responsibility.

Finally, localities have often been surprised to discover the degree to which they handle hazardous materials and waste as a result of routine activities. While it is doubtful that small localities would discover hazardous wastes in substantial quantities, large city or county governments may be surprised by a complete inventory. Public Works, Parks & Recreation, and Public Schools often use and dispose of industrial chemicals. The recent discovery of a surprising amount of hazardous chemicals in school science laboratories in Mecklenburg County, Virginia may indicate that local governments own more hazardous substances and waste than previously supposed.[38]

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[38] "Schools to Purge Hazardous Chemicals," Richmond Times-Dispatch, September 26, 1982, p. F-1.

3.4 COMMUNITY RIGHT-TO-KNOW

The industrial secrecy surrounding the production, use, and disposal of hazardous substances has prompted several states and a few localities to enact right-to-know legislation. Initially sought to improve working conditions for industrial employees, right-to-know legislation is also supported by environmental groups concerned with release of these materials into the environment. Not content with the limited information gathered and disclosed at the federal level, Connecticut, Maine, Michigan, New York, California, and Virginia[39] have passed such legislation. In addition several localities, including Santa Monica, California, Philadelphia, Pennsylvania, and Jersey City, New Jersey, have passed their own ordinances. While these ordinances vary and have yet to be fully tested by the courts, they are providing to local governments information that promotes better monitoring of local HWM activities.

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[39] The Virginia law, passed in 1976, requires disclosure of information on certain chemicals to a specially appointed Board. While pioneer legislation, its scope is limited compared to recently enacted laws in other states. The liability provisions for state employees have seriously limited full use of the information gathered. See "Toxic Chemical Data Virtually Ignored," Richmond Times-Dispatch, October 31, 1983, page A-1.

3.5 "HUNT-THE-DUMP"

One legacy of past mismanagement of hazardous wastes is an unknown number of closed or abandoned dump sites which may contain hazardous wastes. The location and contents of the majority of these sites are also unknown, as are their long term environmental effects. Even before Superfund legislation required disclosure of past HWM activities, environmental and conservation groups, sometimes with the aid of EPA, had sponsored 'Hunt-the-Dump' activities. Citizen handbooks have been written, local workshops held, and public information/education campaigns undertaken through the media.[40] Citizens were encouraged to identify and report suspected dump sites to appropriate officials. Some local governments, often at the request of community groups, have also become active in the search process. While these activities are conducted informally in most localities, Jersey City's Tex Aldridge, working part-time, has demonstrated how effective one local employee can be in site identification and HWM regulation enforcement.[41]

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[40] See Conservation Council of Virginia, Waste Alert! - A Handbook for Citizens on Toxic Wastes and Water Pollution Problems, 1982 or Environmental Action, Inc., and the Sierra Club, Hunt the Dump, 1980, as examples of publications produced under such programs.

[41] "Tex Targets Toxics," Exposure, Environmental Action Foundation, No. 17, April-May 1982, p. 7.

Chapter IV

CRITERIA FOR EVALUATION OF LOCAL HWM POLICIES

Local officials can no longer justify the absence of a local HWM policy by claiming ignorance or that "it can't happen here." Reports of public health and environmental damage in communities both large and small throughout the country have become almost routine. If a locality chooses not to become involved in HWM issues, its citizens should expect a conscious, well founded decision, made after carefully weighing the alternatives.

Accordingly, this paper makes the following assumptions:

1. Hazardous waste management is a significant issue for localities and their governments.
2. Local governments have the responsibility to seek to insure the health, safety, and welfare of their citizens.
3. There are appropriate areas of local government involvement in HWM. And,
4. Localities should carefully explore their options in developing a local HWM policy, choosing activities best suited for their situation.

In order to evaluate the criteria by which possible local activities can be judged, the pro's and con's of local involvement need to be explored.

4.1 WHY LOCALITIES MAY WISH TO DEVELOP LOCAL POLICIES

4.1.1 Protection of Public Health, Safety, Welfare

The United States Constitution establishes two levels of government - federal and state. Some powers are reserved to each level while others are shared. Under the Tenth Amendment various powers, collectively known as the police powers, are reserved to the states. These include the power to regulate private activities in the interest of public health, safety, and welfare; the power to tax and spend both for the public welfare and the maintenance of government; and the power to acquire, manage, and dispose of property for public purposes. These powers, as transferred to the localities by state constitutions, form the basis for local authority to improve hazardous waste management practices.

Virginia localities, as creatures of the state operating under authority delegated by the Commonwealth, have their functions and powers established in the Virginia Constitution and by laws enacted by the General Assembly. Consequently localities can enjoy large areas of responsibility, or have their activities limited, depending on the wishes of the Commonwealth.

The Code of Virginia - 1950 in 15.1-510 provides that

> Any county[42] may adopt such measures as it may deem expedient to secure and promote the health, safety, and welfare of the inhabitants of such county, not inconsistent with the laws of this State.

While such measures are constrained by constitutional limitations, citizens may rightfully expect local government to be involved in promoting their health, safety, and welfare. This mandate has resulted in localities becoming involved in many areas, including police and fire protection, building and fire codes, emergency response, zoning, industrial development, water supply, waste disposal, and planning. Many hazardous waste issues are closely related to these existing local government functions, creating both citizen expectations and legal precedent. Thus involvement in HWM issues can be seen as a logical and legal extension of existing local activities.

4.1.2 Inadequate State/Federal Legislation and Enforcement

Despite recently passed federal and state laws and the flurry of new regulations, it is questionable whether their intended effects have filtered down to the local level, making significant improvements in private HWM activities. Indeed, there are some who believe that, at least in the short run,

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[42] Similar language applies to municipalities in 15.1-838.

RCRA has made things worse.[43] Given the constraints on state and federal regulatory agencies, and the shortcomings of existing legislation and regulations, some localities may decide that the health, safety, and welfare of its citizens are not being protected by these higher, but more remote, levels of government. Given the growing interest of citizens in HWM issues, local governments may wish to take the lead in establishing appropriate local HWM policies rather than play a reactive role as local HWM issues emerge.[44]

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[43] For example see William Goldfarb, "The Hazards of Our Hazardous Waste Policy," Natural Resources Journal, 19, (1979), pp. 249 - 260, or Wolf, "Public Opposition to Hazardous Waste Sites: The Self-Defeating Approach to National Hazardous Waste Control Under Subtitle C of the Resource Conservation Act of 1976."

[44] It is instructive to note that in all the citizen handbooks reviewed for this paper - Hazardous Waste in America, Epstein, Brown, & Pope, (1982);, Hunt the Dump, Environmental Action, Inc., & Sierra Club, (1980); A Hazardous Waste Primer, League of Women Voters Education Fund, (1980); Waste Alert!, Counservation Council of Virginia, (1982); and The Toxic Substances Dilemma, National Wildlife Federation (1980) - active local governmental programs were not mentioned. All seemed to assume that local governments were only marginally interested in HWM issues and would assign higher priority to the interests of industry.

4.1.3 Local Efforts May Complement Existing Regulations

Current HWM regulations depend upon the establishment of a system of permits granted to HWM handlers who comply with facility and operations standards, and the establishment of a "paper trail" for hazardous wastes that ensures responsibility for proper disposal. This approach relies on a high level of cooperation by hundreds of thousands of individual waste handlers. However, the limited monitoring and enforcement capability of EPA and Virginia's Bureau of Hazardous Waste Management may encourage some to avoid their responsibilities under the law. Knowledgeable and interested local government officials and numerous local employees could serve as a deterrent to those otherwise willing to risk non-compliance.

While there are reasonable arguments for consistent state and nationwide HWM regulations, it is also reasonable to assume that regulations adequate in one community may not be so in another. Local officials may be in the best position to evaluate local HWM needs, assist in monitoring compliance with state regulations, and undertake appropriate local programs. While these activities cannot conflict with state or federal regulations or violate constitutional limitations, they may fill in the gaps between universal regulation and local regulatory needs.

4.2 WHY LOCALITIES MAY NOT WISH TO DEVELOP LOCAL POLICIES

4.2.1 Legal Constraints

Two legal areas of concern face localities attempting to regulate private HWM practives using ordinances based on the police power. The first are constitutional constraints:

1. The Public Interest - any governmental intervention in private affairs must be applied in the public interest. While the legitimate areas of what constitutes the public interest can often be found in precedent, extensions of these areas or attempts to define new ones often require lengthy judicial review.
2. Due Process - All governmental activities must take place in accordance with accepted procedures applied without discrimination.
3. Just Compensation - No property can be taken for public use without just compensation. In some cases a local regulatory activity can be successfully argued to be a "virtual taking" because it diminishes the value of a piece of property. In these cases the community must compensate the owner.

The second area of concern is possible conflicts with federal or state laws and regulations. Localities often may legally enact restrictions more stringent than state regula-

tions except where direct conflicts between local and state objectives occur. However, states can preempt some fields of local regulation when state needs are judged to transcend local concerns.

Given these constitutional questions, localities may fear they could become involved in protracted and expensive legal battles. A recent EPA sponsored report stated:

> Many local governments still are timid in their enactment of environmental statutes and land use controls, fearing to intrude in any way on the traditional ethic that what an owner does with his own land is his own concern, especially where he wishes to profit from it financially. This ethic is not confirmed by constitutional law, but it dies hard. [However,] local governments generally have more power than they are willing to assume. Controversy in this area of the law has reduced the initiative many communities have shown.[45]

4.2.2 Relations with Local Industry

Lanier Hickman of the GRDCA has written:

> Local government is involved in hazardous waste management. That involvement is based in tradition; upon expected roles of local government in solid waste management and emergency services; and because of the interest of local government regarding the economic success of their industries and commercial enterprises.[46]

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[45] M. R. Alford & J. F. Hudson, Improving Environmental Quality Through The Use Of Local Ordinances And Regulations, Pubn. EPA 600/5-79-006 (Washington D.C.: U.S. Government Printing Office, March 1979), pp. 4-5. Emphasis in the original.

[46] GRDCA Procedings, p. GS-13, Emphasis added.

Although seldom addressed as in issue in HWM literature, there is often a strong symbiotic relationship between local governments and local economic interests. While it may be argued that this is a proper manifestation of the republican form of government, local governments may become sensitive to the narrow, profit motivated goals of their local industries at the expense of other obligations. Dependent on these industries for jobs, citizens may find it easy to accept the idea that whatever is good for local industries is also good for the community. They may accept lower environmental quality and increased public health risks rather than challenge "the hand that feeds them."[47] Thus local air pollution can become "the smell of money."[48] Local government, dependent on the property taxes and payrolls of local industries have on more than one occasion turned a blind eye to possible adverse impacts of local industries.

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[47] Michael H. Brown in Laying Waste: The Poisoning of America By Toxic Chemicals, (New York, N.Y.: Pantheon Books, 1979), describes several cases of local under-reaction allegedly caused by a protective attitude toward local industries. The relationship between Hooker Chemical and Plastics Corporation and the city of Niagria Falls, N.Y. and the resulting Love Canal national emergency is one relationship examined.

[48] Thanks to the people of West Point, Virginia, home of Chesapeake Corporation's kraft paper mill, for this quote.

Given these conditions it is widely thought that localities generally lack the will to exert their authority over local industry by enacting meaningful and necessary regulations.

Besides protecting existing local industries, local governments often compete with each other for new industry. Many localities have industrial development committees, and make investments in local public facilities in order to attract industrial growth. Given the competitive economic climate, few localities are thought to be willing to institute unilateral HWM regulations or controls and risk discouraging industrial growth.

Given these political realities, it is not surprising that local elected officials and citizen groups are often pleased when state or federal governments take some issues out of local hands.

4.2.3 Lack of Financial and Personnel Resources

Upon first examination, any meaningful local HWM activity may seem a technically complex and expensive undertaking. The current fiscal distress of many localities makes it difficult for them to justify appropriation of existing funds for any new regulatory program. Further, the current political mood of the country suggests little general support

for new taxes that could fund increased government regulations. Federal and state agencies, charged under existing law with undertaking various HWM regulatory programs, are seen as better able to secure the necessary funds and expertise to discharge these responsibilities. Therefore, it is not surprising that local governments feel often that they have neither the funds nor technically qualified personnel to become involved in hazardous waste programs.

4.3 CRITERIA

Local governmental officials evaluating local HWM options may wish to use the following criteria developed within the context of the issues mentioned above. While the weights assigned to each criterion will depend on local conditions, they can serve as a framework for a comparative assessment of local programs.

1. Effectiveness - To what degree is it likely that the proposed policy will have the effects intended? What undesirable effects may occur?
2. Legality - Will these policies draw legal challenge? What delays, costs, and results can be anticipated?
3. Total Cost - Does the locality have the funds to sustain the program or policy for a period of time sufficient to measure its effectiveness?

4. Cost Effectiveness - Is the proposed activity likely to achieve its goals at the lowest cost compared to other options that can achieve the same goals?
5. Potential Liability - What risks to the locality can be anticipated?
6. Use of Available Resources - Does the option make good use of existing local infrastructure and resources? What new capabilities may be required?
7. Political Acceptability - Can the option gain support from politicians, taxpayers, and the regulated community?

Chapter V

POSSIBLE LOCAL OPTIONS

Local governing bodies, in determining what role to play in hazardous waste management, may wish to consider the following options. Some of these options have already been tried in one or more communities; others follow naturally from existing authority and activities. A brief speculative analysis is offered; however, since local conditions vary, the desirability of each option must be decided by those best acquainted with the locality's conditions and goals.

Local HWM activities can be divided into three categories:

1. Direct Regulation of Hazardous Waste Management Practices.
2. Development or Modification of Local Programs, Policies, and Procedures. And,
3. Cooperative Programs.

5.1 DIRECT REGULATIONS

5.1.1 Banning of Hazardous Waste Disposal Activities

Several Virginia localities have enacted ordinances prohibiting disposal of hazardous wastes in any manner.[49] As

[49] For example, see "An Ordinance Providing For The Health And Welfare Of The Citizens And Residents Of The County

these ordinances are likely to be held invalid under the Commerce Clause of the U.S. Constitution, some localities have attached provisions to these ordinances designed to severely restrict a disposal facility's siting or operations. The intent of these restrictions is clearly to make siting or operation virtually impossible.[50] These conditions may be held as constituting a "virtual taking," making compensation to the owners necessary. In addition, many communities have used conditional permits issued under zoning ordinances to limit the development of commercial off-site facilities.

The considerable Constitutional objections aside, some of these ordinances are poorly written, using imprecise language and definitions that also invite challenge. Several ordinances include transportation restrictions that would be extremely difficult to enforce.[51] Several ordinances seem hastily copied from adjacent localities to convince an uneasy public that the local Board or Council was "doing

Of Lunenburg, Virginia, By Prohibiting and Regulating The Collection and Disposal Of Nuclear And Dangerous Chemicals, And Providing For The Violation Thereof." County of Lunenburg, Virginia, 1980.

[50] "Mecklenburg Bans Toxic Waste Dumps," Richmond Times-Dispatch, April 12, 1983, p. B-3.

[51] For example, Carroll County, Virginia bans the transportation of nuclear and hazardous wastes, not produced locally, through the county. How this would be enforced on Interstate 77, which bisects the county, is unclear.

something" about hazardous wastes. By focusing on only one aspect of HWM issues - local disposal - these ordinances may encourage a false sense of security, especially if the governing body thinks that, once these ordinances are enacted, its HWM problems will disappear.

5.1.2 Operating and Reporting Requirements

A second level of regulation includes operating and reporting requirements a locality may impose on a handler of hazardous wastes that are designed to insure proper waste management, not prevent facility operation. However, this approach also contains much uncertainty.

As originally passed, RCRA required state HWM programs to be "equivalent to" and "consistent with" the federal program. However, in the 1980 reauthorization of the Act an amendment was added stating that: "[RCRA shall not]

> be construed to prohibit any state or political subdivision thereof[52] from imposing any requirements, including those for site selection, that are more stringent than those imposed by

[the federal government.]" This amendment, while widening the door for local regulations, has created a potential for conflict that has yet to be resolved.

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[52] Emphasis added.

Industries may also successfully challenge the authority of localities to enact any HWM regulations based on the authority granted to the Department of Health in Virginia Code 32.1-177. This specific authority to regulate solid and hazardous wastes in the state may be held in a state court to preempt the general "health, safety, and welfare," authority granted to counties.

Local HWM ordinances have additional problems. They may require technically complex and detailed regulations, calling for a level of expertise not normally found in local government. If poorly written, local regulations could be subject to the same legal challenges that have been directed toward EPA during its rule making processes. Also, local enforcement is likely to be costly, requiring the creation of a new administrative structure and the hiring of additional personnel.

5.1.3 Right-To-Know and Report Sharing Requirements

Right-to-know has its origin in concern for worker access to information about hazardous materials in the workplace. Enacted in the absence of strong federal requirements by both states and localities, and varying considerably, right-to-know has also come to mean community right-to-know. Currently, information about HWM within a locality is ac-

quired by local governments second or third hand, and is seldom timely. Many localities have incorporated right-to-know requirements within their fire codes, citing emergency response needs. Others, like Chesterfield County, Virginia, have established voluntary data banks to aid in emergency response.

Report sharing routes copies of reports and data currently furnished to state and federal agencies to appropriate county officials. This requirement informs waste handlers of local interest in their activities, and in doing so, encourages compliance. In addition, these requirements should give the locality a better understanding of local HWM issues, resulting in more appropriate local programs, policies and procedures.

These "sunshine laws" for hazardous waste management, which have the advantage of being relatively low cost and encouraging a cooperative atmosphere between industry and government, seem on relatively stable legal ground. While the issue of trade secrets will always be of concern, the largest area of uncertainty now is the entrance of the federal government into the picture. If the Occupational Safety and Health Administration's new "communication of hazard" regulations become effective, states and localities may be faced with the familiar federal preemption question.

5.2 LOCAL PROGRAMS, POLICIES, AND PROCEDURES

5.2.1 A Hazardous Waste Emergency Response Plan

Local governments have long developed appropriate plans, agencies and facilities for various kinds of emergencies. However, the introduction of hazardous materials into emergency situations has strained the ability of local units to respond properly. The painful lessons learned by some localities from inappropriate responses to hazardous materials emergencies and the requirement for local involvement in HWM facility contingency plans have encouraged many communities to develop hazardous materials emergency plans. Besides improving coordination during an emergency, these plans also serve to identify new procedures, personnel, and equipment needed for adequate response. This identification is the first step in securing the funds necessary for their procurement.

The development of a hazardous waste emergency plan is a generally low cost and politically popular activity. It also has the potential for a great return on its investment in the probable reduction in loss to property and life in event of an emergency. A well drawn plan also helps to insure that a locality will not be held liable for damages in the aftermath of an hazardous waste emergency.

5.2.2 Search for Abandoned Dumps

Despite recent Superfund activity and numerous news reports about abandoned or illegal dump sites containing potentially harmful hazardous wastes, there is currently no coordinated effort to identify and evaluate such sites in Virginia. Although Virginia has recently applied for an EPA grant of $150,000 to study approximately 70 sites already identified, the new site identification must rely on complaints by citizens, local governments, environmental groups, and incidental discoveries by other state agencies.

Localities may wish to sponsor a local search program. Local officials and public employees, who know their locality and citizens better than state or federal agents, may be able to identify potential sites more cost efficiently, if they are given proper training. Such a program could be conducted on a scale appropriate to local conditions and the availability of resources. Because of the greater local knowledge and interest in the community of those conducting the search, and the ability of localities to sustain the operation, the long term results may be more beneficial than the typical "one-shot" operations of state or federal agencies.

5.2.3 Small Generator Identification Programs

The small generator exemptions, while perhaps justified on a national or state scale, may present serious problems for some localities and regions. If hazardous waste generation for a particular area is spread among many small generators, the total amount of wastes left partially regulated under RCRA and state HWM Regulations may be be considerable. Localities may decide to identify "small generators" within their community. Besides reminding these generators of local interest, this survey may provide a significant data base if the locality, or state, later wishes to modify its policies.

5.2.4 Training Programs for Local Employees

Local governments have at their disposal everyday county employees who could play many important roles in improving local hazardous materials management. Once trained, either as participants in a local program or as the "eyes and ears" of local government, these employees could, during their routine work, notice and report cases of HWM regulatory violations; recognize the tell-tale signs of an abandoned dump; respond to citizen complaints about hazardous materials; and inform citizens about hazardous materials. Local police, firemen, public works personnel, sanitary workers, emergency

response personnel, public health officials,[53] and zoning enforcement officers could provide high quality-low cost community surveillance.

5.2.5 Analysis of Current Landfill Operations

As owner of a sanitary landfill, a locality must develop policies concerning the acceptance of hazardous wastes. Under the small generator exemptions some hazardous wastes may be landfilled in small quantities if prior permission is granted by the facility owners and the Department of Health. If the landfill accepts some hazardous wastes it is necessary that landfill employees are properly trained to handle that type of waste, appropriate records are kept, and landfill operations and monitoring are designed to minimize risks from these wastes. Training is also necessary if hazardous wastes are banned, so that employees will know what wastes to exclude from the landfill.

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[53] Recently EPA sponsored the development of a model training course, Hazardous Materials in the Community: The Role of Local Health Officials, by the Department of Environmental Science, Cook College, Rutgers University. This course will serve as the foundation of a 2 1/2 day seminar for graduate school educators sponsored by the American Public Health Association, May 23-25 1983. The course and seminar are intended to further the development of state and local educational programs for local public health officials.

5.2.6 Analysis of Local Transportation of Hazardous Wastes

Several Virginia localities have attempted to ban the transportation of hazardous wastes through their jurisdictions.[54] While such local bans may be unconstitutional and unenforcable, they do illustrate legitimate local concern about hazardous materials transport. However, due to the numerous existing federal and state laws regulating hazardous materials transportation, additional local regulations may not be practical. A recent analysis of transportation regulations has stated:

> Hazardous materials transportation is an extremely complex issue for legislative examination, relating to questions of interstate commerce, public health and safety, federal/state regulatory schemes, and emergency response. A maze of government regulations exists as a result of hazardous materials transportation. More than any other issue with environmental implications, hazardous materials transportation is tied to a wide range of federal laws and regulations.[55]

Perhaps more useful would be an analysis of local transportation corridors serving hazardous waste transporters. The results of such an analysis could provide information that

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[54] See "An Ordinance Governing Storing, Processing and Disposal of Nuclear Wastes In The County Of Carroll, Virginia, And Penalties For Violations," Carroll County, Virginia, February 10, 1983, as an example of such an ordinance.

[55] The National Conference of State Legislatures' Solid and Hazardous Waste Project, Hazardous Waste Management: A Survey of State Legislation 1982, (Denver Colorado: National Conference of State Legislatures, 1982), p. V-A-2.

would better enable local emergency response teams to plan for emergencies; suggest additional criteria for zoning and the siting of public facilities; and may indicate areas where localities wish to consider upgrading facilities or rerouting of traffic. The survey also would have the effect of reminding hazardous materials transporters of local interest, thus encouraging compliance with federal and state laws. The previously referenced Price, Schmidt, and Kates study, Chapter 3, footnote No. 28, may be useful in determining the usefulness or the possible structure of a local analysis.

5.2.7 Increased Monitoring of Water Systems

Public health and environmental damage from mismanagement of hazardous wastes often involves ground and surface water contamination. As owners of public water systems, localities may incur substantial costs if water supplies become tainted. While public water systems are routinely tested for some contaminants, localities may wish to increase the scope and frequency of water quality monitoring. These tests will increase costs, but they can easily pay for themselves if unusual concentrations of chemicals are detected. Such testing also provides baseline data that could be invaluable in establishing cause and effect in the event of future hazardous waste mismanagement.

5.2.8 Survey History of Local Public Facility Sites

In recent years a disturbing number of abandoned chemical dumps have been recognized as hazards only after they have been sold or given to a governmental agency. Love Canal is only the most famous of these sites. Oakland, California and Philadelphia, Pennsylvania have recently discovered chemical dumps under schools and playgrounds.[56] Localities may wish to investigate the ownership and use of lands that they have obtained within the last 35 or 40 years.

If the locality owns a closed landfill, or has sold a closed site for private development, it may wish to determine if wastes now considered hazardous could have been disposed in the facility. Such an analysis is especially necessary if the land is currently being used for sensitive uses, as residences, schools, or places of public assembly.

5.2.9 Development of Siting Policy for New Public Facilities

Localities may consider incorporating into their policies for public land acquisition an ownership and land use search. Such a procedure may detect the presence of abandoned dumps or land contamination as a result of previous uses prior to purchase and use for public facilities.

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[56] National Public Radio, "All Things Considered," May 11, 1983.

5.2.10 Update Zoning Regulations

The regulation of land use through zoning is now a widely accepted role of local governments. Local zoning regulations for industrial siting and adjacent land uses - both buffering and contiguous use requirements - should be studied in light of new knowledge of the risks associated with the migration of pollutants from industrial sites. Martin Jaffe writing in Planning:[57]

> Just as local governments have learned to direct growth away from known natural hazards like floodplains, so too must they begin to consider similar strategies for man-made hazards like chemical waste sites.

While it may be easy to develop regulations for commercial off-site TSD facilities and known on-site generators, the lack of information about "small generators" makes good zoning difficult. This illustrates the HWM information needs of a locality as it attempts to protect the health and safety of its citizens.

5.2.11 Modify Industrial Development Policies

Many communities have programs to attract new businesses and encourage existing ones to expand. However, because industries vary in their use of hazardous substances and generation of hazardous wastes, the hazardous materials involve-

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[57] M. Jaffe, Planning, Vol. 47, No. 4, April 1981, p. 14.

ment of an industry should be an important factor in public industrial development decisions.

Some communities have chosen to discriminate against the development of off-site, commercial TSD facilities, favoring industries that may have an on-site facility performing the same functions. Off-site facilities are seen importing wastes from outside the locality, creating risks of transportation accidents. Also, commercial TSD facilities generally have smaller payrolls and pay less local taxes than a manufacturing industry. Such discrimination may be politically wise, but short-sighted from a regional or state view.

While perhaps not politically popular, a locality meeting good siting criteria for a commercial TSD facility may wish to encourage such a siting, thus insuring adequate waste management for existing industry and providing an incentive for new industries to develop. With proper planning industrial hazardous wastes could be generated, treated and disposed within the same industrial park, thus insuring both proper disposal and reduced transportation accident risks. The question of whether the facility would accept wastes from outside the community could be addressed in a number of ways, depending on the circumstances.

Whatever the local policies developed, localities should consider the forseeable HWM impacts of any new industry before committing its support or approval.

5.2.12 Promote Non-Landfill HWM Options

Hazardous wastes need not be buried in the ground. Alternative technologies exist and are continually being improved. Yet, current governmental policies and market conditions have made it difficult for these technologies to be developed. Localities which have a need for a TSD facility but find land disposal unacceptable may wish to provide incentives for industry to encourage the development of the alternative technologies.

While some of these incentives may be more applicable at the state or federal level, localities can provide some financial incentives as modifications of fee structures, tax incentives, and bonds for financing of alternative facilities. Perhaps the easiest and most welcome incentive to the HWM industry would be the lack of substantial local opposition from localities once a facility is proposed.

Recently Mecklenburg County, North Carolina made its preferences clear when it prohibited all new hazardous waste disposal facilities but permitted the siting of plants that use new technology for "neutralizing" or recycling wastes under special use permits in general industrial districts.[58]

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[58] Planning, Vol. 48, No. 11., November, 1982, p. 7.

5.2.13 Develop Policies for Siting Attempts

In enacting recent HWM regulations many states, including Virginia, have given broad authority to a designated state agency to permit or license hazardous waste facilities proposed by industry. However, local opposition to these facilities has resulted in a virtual standstill in facility siting. Recognizing the need to involve local government in the decision making process, siting legislation that calls for considerable local involvement is now being studied or has been enacted by many states. Such legislation is now under consideration by the Virginia General Assembly.

This new legislation may provide opportunities for negotations between localities and the owner of a proposed facility concerning permits, operating conditions, taxes, compensation, zoning restrictions, and other related matters. Localities may wish to anticipate the possible issues involved before siting proposals are made to better prepare for these negotiations. The development of local expertise in HWM issues, local siting conditions, and availability of consultants or mediators may improve the ability of localities to deal effectively with state and industry representatives in the highly charged political atmosphere that often surrounds siting proposals.

5.2.14 Lobby for Increased State Aid & Enforcement

While Virginia is not considered a strong "Home Rule" state, localities are often able to exert strong influence on state government. Many members of the General Assembly have served in local government and well understand local concerns. Localities, either individually or through their associations, may wish to encourage improved state involvement in coordination and support of emergency response, training programs for local officials, public awareness programs, and in other areas where localities may not have the authority, expertise, or funds to operate efficiently or effectively.

Having actively promoted the establishment of HWM facilities, the Department of Health's Bureau of Hazardous Waste Management is now perceived in many localities as a state agency indifferent or hostile to local concerns. While their involvement in siting may be sharply reduced with the passage of siting legislation, the BHWM's previous association with siting issues may make it difficult for them to obtain the necessary resources to develop an adequate level of regulatory and enforcement activities. Because localities would benefit from effective state regulatory programs, lobbying in support of the BHWM and its activities may be appropriate.

5.3 COOPERATIVE PROGRAMS

5.3.1 Cooperative Agreements with State Agencies

Existing governmental HWM regulations and policies require or encourage little coordination between local governments and their state and federal counterparts. The possiblity that local governments may be able to enter into cooperative agreements with federal or state agencies to support existing regulations seems to be largely unexplored. While such arrangements may be difficult due to the wide variation in local governmental capabilities and conflicting perspectives on HWM issues, and the long tradition of friction between localities and the state, this lack of cooperation may hamper necessary public oversight of private HWM activities.

Given the limited state resources currently supporting HWM regulations, localities may wish to explore with state officials those areas of common interest where localities may assist state agencies. If these programs are voluntary or include state funding to offset local costs, state officials may be able to make good use of the large number of interested and capable local employees. Such programs could reduce the antagonism that currently exists between some localities and state government and aid in the development of a more coordinated public response to HWM issues.

5.3.2 Explore Regional Cooperation

Hazardous waste management is an activity that requires more than a local perspective. Regulations in one locality or state may affect the HWM practices in another. Economies of scale may make it necessary for one community to import wastes from another to insure the economical operation of an innovative and effective treatment facility. Just as solid waste management programs may lend themselves to regional cooperation, localities may find it advantageous to work closely with neighboring localities in development of their HWM policies. Virginia's Planning District Commissions, already involved in the development of regional solid waste plans, may be appropriate agencies to coordinate these activities.

5.3.3 Coordinate Local Volunteer Groups

Within most localities are numerous volunteer groups that play important community service and quasi-governmental roles. While these groups vary widely in their composition and abilities, they may provide competent and low-cost volunteers capable of assisting localities with local HWM activities.

Local groups may serve as the focus of local public awareness and educational efforts. Programs on hazardous

waste issues may be presented at their regular meetings. In turn, groups may undertake community awareness programs of their own. Citizens who are more aware of HWM issues may be able to report incidents of mismanagement or identify abandoned dump sites. Informed citizens are also better able to make rational decisions in the event of emergency situations or local HWM controversies.

Groups with environmental orientations may undertake projects aimed at identification of abandoned sites, surveying local hazardous waste generators, or collecting other data useful to local officials. They may also provide citizen support for local HWM activities during the development of local budgets.

Another possible benefit are projects that groups may initiate as a result of becoming interested and knowledgeable in waste related issues. Recycling drives, anti-litter campaigns, cleanup projects, and projects concerned with other public health and environmental issues may be encouraged by localities working with local groups.

A potentially valuable use of volunteers may be the establishment of an informal group of local chemists that may be called upon for advice in the event of a chemical materials release or accident. Such informal networks have been established and used in Chesterfield County, Virginia using

personnel from the local DuPont plant. However, due to the possiblity that liability may be incurred by companies whose employees give bad advice, several corportions have been reluctant for their employees to become involved. If the state's "good Samaritian" law[59] is amended to include advice given about chemicals to the types of emergencies covered, such local groups may be able to provide a valuable service in a time of crisis.

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[59] Code of Virginia - 1950 (8:01 - 225, A1, as amended) exempts from liability for civil damages acts of commission or omission those rendering assistance to appropriate authorities in incidents involving the use, handling, transportation, transmission, or storage of natural or liquified petroleum gas.

Chapter VI

SUMMARY AND CONCLUSIONS

The problems associated with the manufacture, use, and disposal of hazardous materials have proven to be more technically and politically difficult than was commonly supposed just a few years ago. With reports of willful and unintentional mismanagement of hazardous wastes and governmental regulatory chaos filling the headlines, citizens have grown more apprehensive and skeptical of attempts to find practical solutions to our HWM dilemmas. As a result, many citizens, governments, and private interests have resorted to fault-finding and responsibility shifting. Local governments, ignored in early HWM regulatory schemes, and often feeling powerless to be part of the solution, have become part of the problem. By their refusal to cooperate with the development of new and better HWM facilities, localities may be prolonging our current HWM difficulties, deferring enormous costs to coming generations. By adopting adversary postures local governments may be helping create an atmosphere that will inevitably bring heavy-handed state or federal involvement and loss of the influence localities could have had.

Effective governmental regulation of private hazardous waste management activities calls cooperation and a division of labor among the three levels of government. Each has the ability to play the complimentary roles best suited to it:

Federal
* Establish appropriate national HWM standards
* Provide funds for remedial activities
* Support research & development of innovative policies and technology

State
* Enforcement of regulations
* Coordination of local/regional activities
* Collection of data

Local
* Provide surveillance of local HWM activity
* Coordinate emergency response
* Insure appropriate local land use
* Collection of data

There are some signs that local governments are beginning to understand and accept more positive roles in HWM. Although limited in scope, these activities may play an important part of a comprehensive and cooperative system of governmental oversight of private HWM practices. This paper has presented some local activities already being tried in some localities, and suggested others. While direct regulatory activities may be inappropriate, legally suspect, or

beyond the capabilities of some local governments, there seems to be a considerable number of policies, programs, and procedures that local governments may undertake that could better insure the health, safety, and welfare of its citizens. While there are doubtless areas that have not been discussed in this paper, it is hoped that the ideas and issues raised will encourage localities to seriously consider local HWM issues and explore their proper role.

Hazardous waste management is, in the final analysis, in the hands of private industry. But whether past public health and environmental damage have been the result of ignorance or malevolence, these private activities have often led to great public harm. Citizens have empowered their governments to safeguard them from such harm, and should expect protection. Yet, appropriate levels of protection are still lacking.

Once a locality has decided to accept some local HWM responsibility the first step is to gather data about local hazardous waste practices, available local resources, and the extent of current known problems. Once this has been done the locality must determine how, and to what degree, they should become involved. To aid localities in this evaluation, a matrix is presented in Appendix A that includes both the twenty local options suggested in this paper and the

criteria proposed for local evaluation. The format of the matrix is left open. It may be adapted as a simple checklist or a more formal evaluation matrix, complete with weighted indices and numerical scoring. Localities may wish to use a version of this matrix as a analytic tool in their decision-making process.

Even if federal, state, and local governments are able to reduce the current level of discord, it is clear that government alone cannot insure the appropriate disposition of hazardous wastes. Citizens have the right to expect both industry and governments to work togther to reduce the risk to public health and environmental damage. Citizens have the responsiblity to provide governments with the support necessary to provide the desired level of protection. Without a partnerhip between industry, all levels of government, and citizens, the problems of hazardous wastes will continue, causing public health and environmental problems now and for many years to come. Local governments, close to their citizens and industries, and to the damage from hazardous waste mismanagement, may be the best place to begin this parter-ship.

Appendix A

HWM OPTION EVALUATION MATRIX FOR LOCALITIES

	EFFECTIVENESS	LEGALITY	TOTAL COST	COST EFFECTIVENESS	POTENTIAL LIABILITY	RESOURCES	POLITICAL ACCEPTIBILITY	
BANNING HWM ACTIVITIES								
OPERATING/REPORTING REQUIREMENTS								
RIGHT-TO-KNOW								
EMERGENCY RESPONSE PLAN								
SEARCH FOR ABANDONED DUMPS								
SMALL GENERATOR ID PROGRAMS								
EMPLOYEE TRAINING PROGRAMS								
LANDFILL OPERATIONS ANALYSIS								
TRANSPORTATION ANALYSIS								
MONITORING WATER SYSTEMS								
PUBLIC FACILITIES SITE CHECK								
SITING POLICIES - NEW FACILITIES								
UPDATE ZONING REGULATIONS								
INDUSTRIAL DEVELOPMENT POLICIES								
NON-LANDFILL HWM PROMOTION								
SITING POLICY DEVELOPMENT								
LOBBY FOR INCREASED STATE EFFORT								
COOPERATIVE AGREEMENTS WITH STATE								
REGIONAL COOPERATION								
LOCAL VOLUNTEER GROUPS								

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