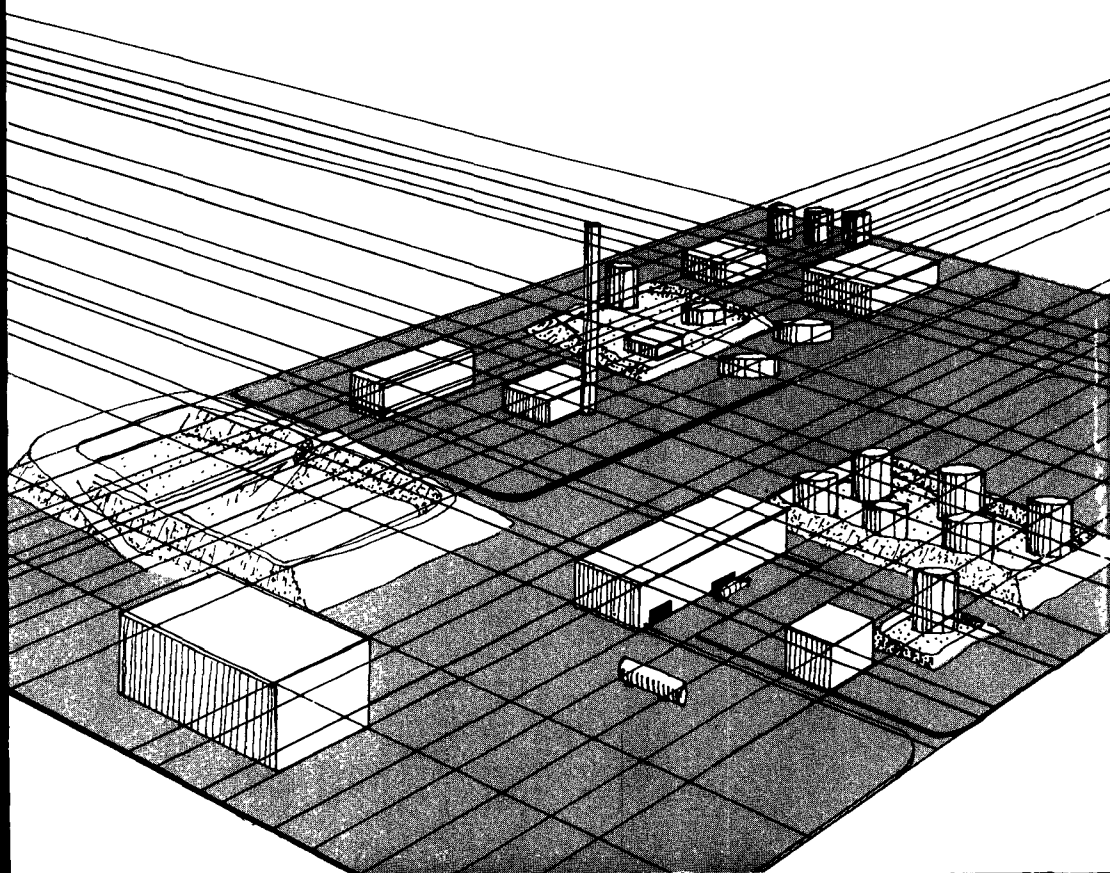


Solid Waste



Using Compensation and Incentives When Siting Hazardous Waste Management Facilities



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**Using Compensation
and Incentives
When Siting
Hazardous Waste
Management Facilities**
A Handbook

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Chapter 1

Introduction

This handbook is one in a series designed to improve the process of siting new facilities to manage hazardous waste. Participants in this process need to be aware of all the technical facts, all the difficult, but necessary, trade-offs, and all the techniques that can be used to address local concerns. This handbook discusses two of those techniques: *compensating people and communities* for costs they bear because of a facility in their locality, and *providing incentives* to localities for hosting a facility to manage hazardous waste. No attempt is made to recommend a plan for participants to follow, particularly regarding the complex process of negotiating. The handbooks on consulting with the public and on environmental mediation will discuss some of those techniques in greater detail. This handbook provides information on compensation and incentives without prejudging their usefulness in specific siting situations; it attempts to show how these techniques can be valuable in overcoming many siting problems. The techniques discussed assume that the facility already meets all Federal and State requirements.

WHY IS SITING CONTROVERSIAL?

Adverse effects occur when the *characteristics* of a specific facility interact with the *conditions* existing at the site where the facility is located. Thus, a facility with a capacity of 200,000 gallons per day may stimulate 40 trucks coming and going to the facility each day. Site-specific access conditions and land use characteristics will influence the severity of this traffic impact and the perception of its significance. There may be few adverse effects in a heavily industrialized community with existing good access to the facility. In a suburban location, on the other hand, traffic may be a critical issue.

Obviously, the effects of a facility to manage hazardous waste are very site specific and depend on local concerns. In general, however, the public is concerned about environmental quality, health, quality of life, economic issues, and burdens to public services. Potential effects include those shown in Exhibit 1. These impacts may affect surrounding landowners, the host community, and neighboring communities. Even when public concern centers on identifiable potential effects of facilities, the community often views these effects differently from "experts." The public emphasizes the uncertainty of risks and questions the ability of Government, industry officials, or *anyone* to ensure long-term safety.

Exhibit 1. Potential Adverse Effects Associated with Hazardous Waste Facilities

Physical Impacts:

Traffic—Increased traffic from waste haulers and employees of the facility; increased possibility of traffic accidents and spills; increased wear on local roads

Noise—Created by facility construction and operation and by increased traffic

Air Pollution—Emissions from incinerators; fugitive dust from landfills

Odors—From the transport, processing, and storage of wastes

Economic Impacts:

Property Values—Decreased property values in the immediate vicinity of a facility and along routes traveled by transport vehicles

Real Estate Development—Restricted or foregone real estate options resulting from actual or perceived physical impacts and risks associated with a facility

Public Services—Increased expenditures for highway maintenance, for fire and emergency spill response, and for facility inspections and monitoring

Tax Revenues—Lost revenues resulting from property value declines and foregone real estate development

Social Impacts:

Community Image—Identification as "dumping ground" for wastes; may have other effects as well, such as changes in the quality of life and the movement of population

Aesthetic—Conflicts in visual fit with setting, and changes in visual identity, particularly from incinerators

Risk and Uncertainties:

Ground- and Surface-Water Pollution—At and around the site during and after operation and offsite from transport spills

Fire/Explosions—At the site during and after operation and disposal, and offsite from transport spills

Public Health—Long-term unknown adverse effects from accidents and long-term exposure

The construction of hazardous waste management facilities (HWMFs) also provides positive benefits to individuals, groups, the community, and society as a whole. For example, properly regulated facilities help eliminate "midnight dumping" and provide environmentally sound disposal. These benefits, however, often are distributed outside of the host community. Like other controversial facilities, such as prisons, power plants, and airports, HWMFs have widespread societal benefits and concentrated local costs and impacts.

WHAT CAN BE DONE?

Many of the adverse effects listed in Exhibit 1 can be prevented or reduced; that is, they can be mitigated. Mitigation represents the first line of defense in addressing local concerns and will reduce the need to provide compensation and incentives. Mitigation may involve, for example, redesigning a facility to provide extra protection against ground-water pollution or noise. For a more detailed discussion of mitigation, see Appendix A.

Compensation and incentives may be used to respond to any remaining adverse effects by redistributing the costs and benefits that result from a hazardous waste facility. Compensation and incentives are not required by the Resource Conservation and Recovery Act (RCRA), but may make hazardous waste facilities more acceptable to the host and neighboring communities.

Compensation is a tool for developers and States to repay (not exclusively monetarily) individuals, local governments, and groups for facing unavoidable, intangible, and unpredictable adverse effects. It is a means of dealing with impacts that remain unmitigated even after strict regulatory requirements are met. Compensation does not generate new costs: it redistributes siting burdens back to the generators of hazardous waste.

Incentives (as used in this handbook) provide benefits above the costs associated with a hazardous waste facility. If people are fully compensated for the impacts of a facility, incentives will make them better off than they were before the facility siting. It is a technique that may make facilities desirable by demonstrating a developer's or State's goodwill.

The distinction between incentives and compensation, however, is not always possible to make. It is almost impossible, for example, to determine the precise, "correct" amount of compensation to apply in a siting situation. The distinction can be useful in deciding what response to make in many situations. Exhibit 2, using some typical impacts, illustrates the difference between the techniques.

Compensation and incentive payments are never bribes, secret contracts to act against the public interest for personal gain. Compensation and incentive payments are public agreements to accept a benefit in exchange for bearing the burden of a local hazardous waste facility.

Exhibit 2. Sample Responses to Typical Facility Impacts

<i>Impact Issues</i>	<i>Compensation Examples</i>	<i>Incentive Examples</i>
<i>Truck traffic</i>	<i>Improve or partly maintain roads; provide traffic light(s)</i>	<i>Completely maintain roadways</i>
<i>Aesthetic impact</i>	<i>Offer direct cash payments to affected individuals/groups</i>	<i>Build an aesthetically pleasing park</i>
<i>Ground-water pollution risk</i>	<i>Provide liability insurance</i>	<i>Develop additional water supplies</i>
<i>Loss of wildlife area</i>	<i>Provide fund for endangered wildlife</i>	<i>Build additional recreation area</i>
<i>Property value decline</i>	<i>Provide land value guarantees and direct payments</i>	<i>Buy and provide additional property to affected residents</i>
<i>Uncertainty about potential damages</i>	<i>Provide performance bond liability insurance, emergency response fund; provide tipping fees to community</i>	<i>Purchase or provide guarantees or backing of municipal bonds</i>
		<i>Donate to local charitable organizations</i>
		<i>Provide free disposal service to local industry</i>
		<i>Clean up existing waste site</i>

Chapter 2

Compensation Techniques

Why compensate? All potential adverse effects of a new facility cannot be eliminated, even with strict regulatory requirements and additional mitigation. The remaining impacts result from *technical problems*, such as the difficulty of predicting the type and magnitude of impacts because of a lack of knowledge; *uncertainty*, because some occurrences, such as tornadoes and truck accidents, occur by chance; and *economic reasons*, because it may be cheaper to pay for some consequences than to analyze, estimate, and avoid them. Compensation guarantees that no citizen is penalized by those remaining impacts for living in a community that provides a service for an entire State or region.

Compensation addresses unavoidable effects, intangible effects, and uncertain effects. Unavoidable effects may include increased traffic in the vicinity of the hazardous waste facility or the destruction of valued open space. Intangible effects are difficult to measure—community image and the quality of life, for example. Effects caused by uncertainty, such as risk-related issues, are difficult to predict reliably.

The four types of techniques applicable to compensating for these effects from siting HWMFs are the following:

- monetary payments
- in-kind replacement of affected resources or services
- contingency funds and insurance
- land value guarantees and payments

Each of these four techniques is discussed below.

MONETARY PAYMENTS

Compensation can be in the form of a cash payment to an affected individual, group, or community. (Monetary payments for land value declines are discussed later.) These payments are in addition to any applicable Federal requirements.

Monetary payments to an affected individual or community provide the recipient with a great deal of flexibility. They allow the *recipient* to decide how to deal with the costs suffered because of the HWMF. In this sense, they are easier to administer than other forms of compensation. While giving the recipient flexibility, *monetary payments* are also more susceptible to accusations of “buying off” the recipient. It is particularly important to have a direct connection between the burden of the recipient, the payment, and the disbursement of the payment to offset the burden.

Monetary payments are generally best suited to effects that are measurable and for which costs can be defined. For example, if a community will need two additional local health agents to monitor the HWMF, these costs are easily calculated and can be compensated. Negative community image and risk are not as easily priced, but are still suitable for specific monetary payments. The Connecticut and Kentucky waste-based tipping fees (see the case example in Exhibit 3) illustrate the suitability of monetary payments for dealing with these intangible effects. These approaches recognize the great difficulty in defining impacts and costs and, therefore, simply assume that adverse effects are related to the amount of revenues generated at a HWMF and charge compensation based on gross receipts. The host community then deals with the issue of distributing these revenues to compensate its citizens for both tangible and intangible adverse consequences.

Monetary compensation can be either a one-time or a continuing payment. *One-time payments* are in cash (or its equivalent) and are sometimes made through a device called "tied impact payments" that are linked to certain identified impacts. States may " earmark " funds to communities, for example, so that they can be used only for certain activities like road improvements or recreation. Developers can also earmark funds through their agreements with communities. Developers, for example, can even offer to reimburse communities for consultant and administrative expenses necessary to evaluate and respond to the developers' proposal. One-time payments are also appropriate when purchasing property at fair market value. This method contrasts with land value guarantees discussed in the fourth part of this chapter. *Continuing payments* may take the following forms:

- *Property Tax Payments:* Taxes above those normally required for property of comparable value because of higher tax rates, higher assessment percentages, or accelerated payments
- *Payments in Lieu of Taxes:* For both publicly and privately owned/operated facilities, these are negotiated payments that address the specific costs of a facility. In the case of a private facility, they may be the sole source of payments. Payments in lieu of taxes for a publicly owned/operated facility generally require enabling legislation.
- *Gross Receipts Taxes:* These taxes are paid to communities in addition to normal property taxes and may be paid through a negotiated arrangement or set formula (see Connecticut example in Exhibit 3).

Exhibit 3. Monetary Compensation Payments

Case Examples: State Requirements

A 1980 Kentucky law (KRS, Chapter 68) requires that HWMF developers pay 2 percent of their gross receipts to the host county's general fund.

Connecticut (Public Law 80-472) requires HWMF operators to pay the host community based on the following formula:

- \$0.05/gallon of hazardous waste received on a quarterly basis; or
- payment in accordance with the following table, whichever is greater:

Quarterly Gross Receipts		
Over	Not Exceeding	Payment as Percent of Gross Receipts
\$ 0	\$1,250,000	10.0
1,250,000	\$2,500,000	5.0
2,500,000		2.5

Exhibit 3. Monetary Compensation Payments—Continued

A 1980 Massachusetts law (Massachusetts Hazardous Waste Facility Act, Chapter 21 D of the General Laws) requires HWMF developers to negotiate with "local assessment committees" in the siting of HWMFs. These siting agreements may specify developer-provided compensation, such as monetary payments to the community. The Massachusetts legislation also enables abutting communities to petition the Massachusetts Hazardous Waste Facility Site Safety Council for the establishment of developer-paid compensation.

Other Case Examples:

In the mid-1970s, the Washington Public Power Supply System provided \$12 million in compensation to 44 different taxing districts for public facility and public service impacts projected to occur from its nuclear power plant construction. The State of Washington's Energy Facility Site Evaluation Council served as a mediator during the negotiations. Such payments are commonplace in the development of energy facilities.

Other Possibilities:

Provider	Recipients			
	Host Communities	Abutting Communities	Individuals	Groups
Developer	Property taxes	Tied-impact payments	Tied-impact payments	Tied-impact payments
	Payments in lieu of taxes	Lump-sum payments	Lump-sum payments	Lump-sum payments
	Gross receipts taxes	Tipping fees		
	Tipping fees			
	Tied-impact payments			
	Lump-sum payments			
State	Tied-impact payments	Tied-impact payments	Lump-sum payments	Lump-sum payments
	Lump-sum payments	Lump-sum payments		
	State-local aid adjustments	State-local aid adjustments		

- **Tipping Fees:** These are fees that are levied on the facility and are based on each unit of waste (truckload, pound, cubic yard, gallon) accepted at the facility.
- **Adjustments to State-Local Aid Formulas:** States have assistance programs to funnel aid to communities that can be adjusted and used as a transfer mechanism for monetary payments. In addition to these specific programs, many States provide general revenues to localities based on population, local tax base assessments, and other factors. The presence of a facility may affect the community's share from these funds.

Of all the payment schemes, tipping fees and facility taxes are the easiest to negotiate, calculate, and collect. The other approaches are more responsive to actual impact costs, but often require difficult calculations and distribution schemes. Landfills, which have a limited lifespan, will, of course, produce less revenue from tipping fees than incinerators, processing, or transfer facilities unless the fees are correspondingly greater.

The costs of continuing payments must be calculated differently from one-time payments. Payments in the future are worth less than their face value today and must be adjusted when comparing the two approaches. This process of finding the present value of future payments (called discounting) is illustrated in Exhibit 4.

Some communities may come to depend on continuing payments as a source of revenue. In these cases, the community may be more willing to reach compromises to keep facilities open or to approve expansions.

Because the magnitude of effects may change, communities may want monetary payment schemes reviewed after a period of time. A conversion provision can be included in the basic agreement requiring a periodic review to renegotiate the terms and conditions of the monetary payment scheme. An example is contained in the model binding agreement in Chapter 5. Although compensation agreements based on continuing payments offer a document that may be easier to negotiate, additional one-time payments can be negotiated as needed.

There are several combinations of providers and recipients involving the State and the private developer as potential providers, and communities, individuals, and groups as recipients. The monetary payment transfer mechanism will vary depending on the provider and recipient. Exhibit 3 illustrates the appropriateness of particular mechanisms for different combinations of provider and recipient.

The above comments indicate the complex trade-offs between the different types of monetary payments. A combination or mix of monetary payments is probably a useful approach to consider in developing compensation schemes. See Exhibit 5 for an example.

Exhibit 4. Present Value of Future Monetary Payments

Definition:

The present value (PV) of future costs or payments is the amount of money that, if invested today, would provide an equivalent stream of income. In reality, there is no one current rate of interest on investments, but the rate at which one must borrow money is generally acceptable.

Example: Present Value of Known Annual Payments

Tipping fees are expected to total \$25,000 per year, each year for 20 years. They are worth \$156,475 today, using a 15 percent rate of interest (find the multiplication factor in the table below):

$$\$25,000 \times 6.259 = \$156,475$$

Example: Annual Payments to Pay Known Amount of Compensation

Total compensation required is \$215,000. The developer and community agree to spread the payments over 10 years using a 10 percent rate of interest. The annual payments are \$34,988, as follows:

$$\$215,000 / 6.145 = \$34,988 \text{ per year}$$

Exhibit 4. Present Value of Future Monetary Payments—Continued

Example: Choosing Between Alternatives

A developer of a hazardous waste facility and a community are considering the costs of two different compensation packages. They evaluate the two packages by making the following calculations:

	Compensation Alternative 1	Compensation Alternative 2
Project Start-up:		
New firetruck to host community	\$80,000	
Lump-sum payment to property abutters	45,000	\$45,000
Payment to host community to up-grade access road	300,000	
	<u>\$425,000</u>	<u>\$45,000</u>
Continuing:		
Tipping fee to host community	\$50,000/year	\$110,000/year
Tipping fee to neighboring communities	10,000/year	10,000/year
	<u>\$60,000/year</u>	<u>\$120,000/year</u>
Present Value (assuming a 20-year planning period and 10 percent interest)		
$PV_1 = \$425,000 + \$80,000 (8.513)$	$PV_2 = \$45,000 + \$120,000 (8.513)$	
$= \$425,000 + \$510,780$	$= \$45,000 + \$1,021,560$	
$= \$935,780$	$= \$1,066,560$	

PRESENT VALUE OF \$1 ANNUITY

Years of Payments	Rate of Interest						
	5%	6%	8%	10%	15%	20%	25%
5	4.329	4.212	3.993	3.971	3.352	2.991	2.689
10	7.722	7.360	6.710	6.145	5.019	4.192	3.571
20	12.462	11.470	9.818	8.513	6.259	4.870	3.954
30	15.372	13.765	11.258	9.427	6.566	4.970	3.995
50	18.256	15.762	12.233	9.915	6.661	4.999	4.000

IN-KIND REPLACEMENT/RESTORATION ACTIONS

Instead of providing a monetary payment to a community or an affected party, the provider can offset the burdens it imposes by replacing the affected resource or service. See Exhibit 6 for examples. Again, this compensation is beyond Federal requirements. This technique is most appropriate for those impacts that a developer or the State is able to provide directly. For a private developer, this ability may be limited. In general, the HWMF developer will be better able to provide nonconstruction-related items, such as training and property

Exhibit 5. Example of Joint State/Developer Monetary Payments for a Private HWMF

Provider	Recipients		
	Host Communities	Abutting Communities	Individuals
Developer	Tipping fee of \$0.05 per gallon of disposed waste, renegotiable every 2 years (intended to cover quality-of-life impacts)	One-time lump-sum payment based on changes in assessed value after one year and adjusted for an inflation rate of 10%	Annual tied-impact payment to cover costs of third-party ground-water monitoring
	Tipping fee of \$2.00 per truck entering facility for maintaining secondary roads		
State	Annual adjustment on State-local highway aid formula to increase local share by 3% for maintaining primary roads	Annual lump sum of \$10,000 to three adjacent communities	

The major advantage of in-kind compensation is that it is visibly linked with specific effects, unlike monetary payments that seem less directly connected. Second, it is particularly effective in muting bribery or payoff criticisms. Some of the drawbacks to this technique include the following:

- In-kind replacement actions are less able to address intangible issues, such as quality of life and community stigma problems. The mere presence of a facility in a community may raise the community image problem. A developer can do very little to compensate directly for this issue using in-kind replacements.
- The developer or the State may not be able to provide some of the in-kind services and resources shown in the examples; it may be a lot easier to simply pay the host community money
- The host community may not want the provider involved in replacing resources or services. Communities may wish to handle these functions themselves.
- Similarly, an affected resident may also prefer to receive straight monetary payments rather than some comparably valued resource.
- Some in-kind services and resources lend themselves to one-time compensation, but other service impacts of the HWMF may be recurring and require long-term continuing cost commitments.

Exhibit 6. In-Kind Replacement/Restoration Actions

Case Examples:

The Tennessee Valley Authority (TVA) uses this technique in the siting of its nuclear and coal-fired power plants. For example, in the mid-1970s, TVA negotiated a very complex compensation agreement with several communities, the State of Tennessee, and the Nuclear Regulatory Commission for the construction of a nuclear facility in Hartsville, Tennessee. TVA agreed to, among other things, construct traffic improvements and education facilities. TVA also agreed to provide TVA expertise to local officials to resolve housing and planning impact issues.

In the siting of two nuclear generating stations in Skagit County, Washington, Puget Power agreed to construct a fish hatchery. The hatchery would productively use warm water from the plant's cooling system and would provide fish for the restocking of Washington rivers. This action served as a restoration technique addressing fish kills on the Skagit River.

Other Possibilities:

Provider	Recipients		
	Host Communities	Abutting Communities	Individuals
Developer or State	Repaving or rebuilding access roads	Reconstructing transportation routes	Training in emergency procedures
	Providing specialized firefighting equipment	Training local firemen and police	Replacing or restoring property
	Training local firemen and police		
	Replacing or restoring property, vegetation, wetlands, etc.		

CONTINGENCY FUNDS AND INSURANCE

Contingency funds and insurance are promises to pay for adverse consequences that cannot be reliably predicted and are unlikely to occur. As discussed previously, even with strict regulation, some risk will always remain. The contingency funds and insurance discussed in this section would be in addition to any that might be required by law and would provide communities with additional assurance that should an accident or default occur, adequate money will be available to compensate for adverse impacts. Contingency arrangements for property value losses are discussed in the next section because of their special importance in HWMF siting.

Contingency funds can guarantee operator performance or protect against unexpected events. *Performance requirements* could include operating, maintaining, and closing a facility using standards that exceed legal requirements. The cost of meeting these requirements can be often calculated in advance. *Unexpected events*, such as accidents, fires, and spills, on the other hand, cannot be predicted, but their occurrence might pose significant environmental or public health issues. This section focuses on financial arrangements for unexpected events; alternative contingency and performance mechanisms are briefly described because they are sometimes used interchangeably. Some of the mechanisms are:

- *Letter of Credit*: This is an irrevocable engagement by a bank, at the request of a hazardous waste facility operator, that it will honor demands for payment by a regulatory agency. Letters of credit are generally limited to performance requirements, such as closing a facility.
- *Surety Bond*: This mechanism is a contract by which a surety company is answerable for the default or debts of a facility operator. The surety company agrees to satisfy these responsibilities if the operator does not act in accordance with the terms of the surety bond.
- *Hazardous Waste Trust Fund*: This is a versatile financial mechanism that can fund the operation or maintenance of a facility, the cleanup of accidents, or the payment of personal damage claims.
- *Emergency Response Fund*: This technique funds the cleanup of accidents and pays damages related to unexpected hazardous waste events.
- *Liability Insurance*: This is a means for covering the costs associated with accidental and unexpected occurrences in the operation of a facility. Rather than pay continuing fees into a trust or emergency fund, operators pay a premium to an insurer who guarantees financial responsibility for paying claims brought against the insurer.

There are a number of ways of financing contingency funds. They can be supported by States or developers, or both. The funds can be financed by one-time payments, payments that continue over a period of years, or by supplemental payments as they are needed. Contingency funds and insurance can cover a single facility or many facilities. For example, a State could appropriate one lump sum from its general fund or appropriate an incremental amount annually. A State could have bond issues on a one-time only or periodic basis. Alternatively, a State could tax hazardous waste generators, transporters, or facility operators. The facility owner could also make a lump-sum payment before opening the facility, pay into a State-operated fund on a waste processed basis, reimburse the fund for expenditures, or a combination of the above. The examples cited in Exhibit 7 illustrate some of these arrangements.

Regardless of the financing approach used for contingency funds, State-operated funds offer a distinct advantage over developer-operated funds. Developer-operated funds require a mechanism for determining when the situation warrants expenditures from the fund, and what those expenditures should be. This could be decided by a third party, such as a court, the State, or a mediator. Instead, the community and developer could negotiate whenever an event occurs.

Exhibit 7. Contingency Funds and Insurance

Case Examples:

New Jersey established a spill compensation fund in 1976 (Chapter 41 of the Acts of 1976, amended Chapter 73, Acts of 1980). It is a non-lapsing revolving fund financed by a per-barrel tax on all hazardous waste facilities in the State. The fund authorizes the Department of Environmental Protection (DEP) to take remedial actions if the discharger does not take action. DEP has wide discretion in responding to events. Any discharger who fails to comply with a DEP directive is liable for three times the cost of removal. Money may be disbursed from the fund for a number of purposes, including waste removal costs and damage costs (including loss of income, damage to real or personal property, restoration of natural resources, or loss of tax revenue). The fund can also be used to pay for cleanup of sites that are abandoned or pose an imminent hazard. Revenues to date are between \$10 and \$15 million per year—virtually all of it from tax levies. Revenues are expected to increase to \$50 million per year in the near future. As the fund has become more publicized, more claims are being made by persons affected by hazardous waste accidents. There is a \$1.5 million limitation per site on the fund.

Tennessee requires applicants to post a performance bond to ensure availability of funds in the event of abandonment, insolvency, or other inability of the applicant to meet site requirements. All forfeited bonds are deposited in a special Hazardous Waste Trust Fund that the State can draw on. Funds can be used for removal and disposal of hazardous wastes, reclamation of sites, detoxification, and perpetual care of abandoned sites. Third-party claims cannot be made against the fund.

Michigan established a Hazardous Waste Service Fund (Act 64, Section 43) to allow the State to deal with hazardous waste emergencies. The State is authorized to spend money upon a finding of "actual or potential environmental damage." Seed money in the form of a \$1 million appropriation was used to establish the fund. Costs are to be recovered by litigation against responsible parties. The Department of Natural Resources is in the process of promulgating rules to determine methods of payment from the fund.

Other Possibilities:

Provider	Recipients		
	Host Communities	Abutting Communities	Individuals
Developer	Trust fund for perpetual monitoring Emergency response fund	Emergency response fund	Personal liability insurance Emergency response fund State guarantees for liability insurance pools Hazardous waste compensation fund

Exhibit 7. Contingency Funds and Insurance—Continued

Other Possibilities: Fund Coverage

Events	Impacts
Transportation-related spills or accidents	Property damages
Incidents at the facility (explosions, accidental ruptures)	Health damages
Failure of mitigation measures (lining ruptures)	Natural resource damages
Monitoring	Economic damages (such as loss of work, loss of business)
Postclosure accidents	Temporary or permanent relocation costs
	Costs of incident management and control
	Costs of long-term monitoring

In this case, however, valuable response time may be lost and the potential for tension between the community and hazardous waste facility operator increases.

Experience with contingency funds has been almost exclusively with State-operated funds. This arrangement has worked well in those States with funds. It has avoided the problem of developer discretion in using the funds and has allowed for remedial response as well as payment of damage claims. The real problems with State-operated funds have arisen with attempts to obtain developer reimbursement of the funds.

LAND VALUE GUARANTEES

While empirical evidence is fragmentary and often conflicting, a noisome facility, such as a HWMF, is likely to stimulate some degree of property value loss in a certain area around the facility, depending on the uses of adjacent land. Such impacts are also possible, to a lesser extent, along routes heavily traveled by waste haul vehicles. Changes in property values reflect many of the other impacts raised in this handbook—noise, traffic, risk, and odors. As these impacts are unlikely to be completely mitigated, some type of guarantee to reimburse for property value declines is likely to be a common compensation request in new hazardous waste facility siting. The virtues of land value guarantees are (1) that the expected cost to the facility operator is low, because he believes he is unlikely to cause significant property value declines, and (2) that property owners are protected against potentially large losses. See Exhibit 8 for land value guarantee examples.

A corollary impact to property value effects suffered by individuals and corporations is the tax base loss in a community. Decreased property values mean lower tax receipts and revenues for a community. This section discusses alternatives for compensating property value and tax base losses.

Exhibit 8. Land Value Guarantees

Case Examples:

During deliberations for moving the capital of Alaska from Juneau, legislation was passed in the Alaska legislature authorizing the State to purchase property at a fixed percentage of present value if property owners were not able to sell their houses within a certain period of time.

In Montgomery County, Maryland, the developer of the White Flint Mall offered to abutting property owners a property value compensation guarantee. The developer hired an appraiser to appraise the pre-Mall values of the approximately 10 properties. According to the agreement signed by the developer and the landowners, if property owners wanted to sell their property within 5 years, and the price offered fell below the preproject appraised value, then the developer would (1) pay the difference, or (2) buy the property. It is unlikely that the compensation guarantee will have to be exercised. Property values have, in fact, increased.

Other Possibilities:

Provider	Recipients	
	Communities	Individuals
Developer	Pay the present value of the future taxes on the lost value	Pay difference in value less the present value of the future taxes on the lost value
	Pay annual taxes on the lost value, adjusted for inflation.	Guarantee current value (or index value to inflation) only if property is sold. Developer can purchase the property or pay the difference between the sale price and the current (or indexed) value

Other Possibilities: Ways to Implement

To Estimate Property Value Declines:	To Establish Impact Area:
Use experienced appraiser	Use experienced appraiser to set boundaries
Use formula based on current value and housing price index; compare to appraised value	Consider adjacent landowners only
Compare to similar house or group of houses unaffected by facility	Landowners submit certified appraisals of loss in value; developer compensates and reimburses only for appraisals that show losses
Negotiate value	Negotiate with local groups
	Select reasonable distance

Exhibit 8. Land Value Guarantees—Continued

<i>When to Compensate</i>	<i>Methods to Ensure Implementation</i>
<i>Compensate automatically after 1-5 years of operation</i>	<i>Establish developer-funded preproject trust fund</i>
<i>Compensate only upon sale of property</i>	<i>Establish binding agreements with each designated preproject property</i>
<i>Compensate immediately after all owner construction and/or operation approvals are obtained</i>	

There are two means for compensating property value losses of individuals: purchase of the affected property at fair market value; or some method of cash compensation reflecting the decreased property value. States are not appropriate providers of this type of compensation because it may require purchasing property for the primary purpose of making restitution to individuals for non-State actions (unless the State is the developer). Compensation should probably be paid only once, generally after the facility is in operation but before a fixed period has elapsed. The single compensation payment reduces the administrative load and avoids double-counting. Delaying compensation payments until after the facility is in operation avoids the payment of short-term property value losses generated by construction. Finally, a time limit on compensation claims (for example, 5 years) reduces the administrative load, minimizes problems of calculating land inflation over long periods, and decreases uncertainties about costs.

Only those individuals who owned property before the introduction of the HWMF should be eligible for compensation for property value losses. Once a facility is introduced into an area, property values will adjust to reflect the impact of that facility; thus, individuals who purchase homes in the impacted area after the facility is introduced will already have been implicitly compensated by the market through the reduction in the price they pay for that home. In short, if an individual with full knowledge chooses to purchase a home next to an HWMF, the State or a developer should probably not be obligated to compensate that individual for having made that choice unless conditions have changed.

Accompanying property value losses are tax base losses to a community. If the impact area surrounding a new HWMF declines in total property value, for example, by \$80,000, and the local tax rate is \$1.50 per \$100 of assessed valuation (and assuming 100 percent assessments), the locality will lose \$1,200 in tax revenues the first year, and corresponding amounts each following year. When these amounts are significant, it may be appropriate for the developer to pay the locality the present value of the stream of lost property taxes, and deduct that amount from the compensation given to individual property owners. Alternatively, the developer could choose to make continuing, as-needed payments rather than a one-time cash payment.

Chapter 3

Incentives

Why use incentives? Unlike mitigation or compensation techniques that address costs or impacts incurred in the siting of a HWMF, incentives need not be directed at specific impacts. Incentives (as used in this handbook) are benefits in addition to compensation, which addresses specific adverse effects. Incentives may induce participants to resolve a siting controversy when compensation alone might fail.

There are obviously a fine definitional line and often little operational difference between compensation and incentives. The examples shown in Exhibit 9 are representative of incentives. Undoubtedly, additional variations on donation recipients and on the types of additional public services and amenities could be provided in a particular community.

In situations where the developer or State has responsively addressed adverse effects using mitigation and compensation, incentives may be appropriate given the following considerations.

- The use of incentives can demonstrate commitment to a community by showing that the developer or State is willing to perform beyond the minimum requirements. Thus, if the loss of open space is an issue, then providing more, or better quality, parkland than was lost would be an incentive that might resolve the dispute.
- Incentives that are unrelated to impacts should be based on a careful assessment of needs in the community. An offer to donate land for a park may have no strategic or goodwill value if the area has adequate recreation resources. An offer to accept local industrial waste for free, however, may be done for little cost to the developer and have tremendous political and economic value in a community where local industry finds it difficult or expensive to dispose of its hazardous waste. Similarly, a rural area with few public amenities or services is more apt to positively respond to such incentives as donated police equipment, firetrucks, or recreation facilities.
- The goodwill from using incentives during the operation of a facility is an important factor in keeping a facility in business.

The most important consideration in the use of incentives is their potential to raise suspicions that the facility is worse than it really is, or that the developer is somehow acting unethically. There may be a greater likelihood that incentives will be accepted if the community or potential recipient suggests them first.

The facility developer or State has considerable flexibility in using incentives. A provider must essentially make a judgment on what the siting market requires in

Exhibit 9. Incentive Techniques

Case Examples:

Wes-Con, Inc. used several incentives in the siting and operation of a hazardous waste disposal facility in an abandoned missile silo complex in Grandview, Idaho. The site covers more than 100 acres. Wes-Con offered several incentives to the local area, including use of Wes-Con's firefighting equipment (the area is rural and had no existing equipment); the use of its first aid equipment; and the use of its well water to local cattlemen. The county and the area cattlemen, however, have not used any of these offers since the Grandview site began operations in 1973.

Wes-Con also received permission to site a hazardous waste disposal facility in 1977 in a nearby missile silo complex in Bruneau, Idaho. It has not yet developed this site as a facility to manage hazardous waste and is contemplating alternative uses for the site. The success in getting approval for the Bruneau site, however, is attributable, in part, to Wes-Con's successful use of incentives at its Grandview site. During the operation of its Grandview site, Wes-Con made donations to local charities and recreation events (totaling \$15,000) and provided free pesticide disposal service to area farmers. The free disposal service has an estimated value of \$5,000 per year. In addition, Wes-Con has hired its employees locally, provided emergency disposal service during natural disasters, and volunteered the use of its heavy equipment to local residents.

Chemical Waste Management, Inc., which operates a disposal facility in Livingston, Alabama, donated an ambulance to the community. Kansas Industrial Environmental Services, which operates a land disposal facility in Furley, Kansas, supplements local snow plowing efforts with its own equipment.

Bob's Home Service, which operates a hazardous waste landfill in Wright City, Missouri, provides free solid waste disposal services to residents along the county road leading to the landfill area.

Other Possibilities:

Provider	Host Communities	Recipients	
		Individuals	Groups
Developer	Waste disposal for free or at a reduced rate*	Jobs for local residents*	Waste disposal for free or at a reduced rate for local businesses*
	Public services and amenities: firetruck, parks, recreation areas, road improvements	Donations to charities*	
	Additional taxes		
	Cleanup of an abandoned site		
	Purchase of municipal bonds at above-market rates		

*generally unrelated to specific impacts

Exhibit 9. Incentive Techniques—Continued

Provider	Host Communities	Recipients	
		Individuals	Groups
State	<p>Additional public services and amenities: firetruck, ambulance, parks, recreation areas, road improvements</p> <p>Additional State funding in other categorical programs</p> <p>Cleanup of an abandoned site</p> <p>Co-location of a desirable State facility</p>		

terms of the type and amount of incentive. How much should the provider pay in incentives? It is not possible to answer that question here, but two factors should be considered:

- Long-term monetary payments to the community (tied to the amount of waste being disposed) that are in addition to compensation may be more expensive than one-time incentives such as the donation of public amenities.
- In-kind services will generally be the least expensive incentives, and may have an equal strategic value. These include free disposal services to local industries and the sharing of facilities and equipment (for example, firetrucks).

It is generally inappropriate for the States to require a private developer to provide benefits beyond what is required to compensate for actual adverse effects. Although States have wide latitude in what they can require of a private developer, as discussed in Chapter 4, requirements for incentives are not likely to be favorably received by a developer who has carefully provided a fair compensation package. Private developers generally oppose States' requiring incentives from developers. They feel that incentives are basically a concern of the developer and the community. The private sector is not opposed, however, to States' providing incentives to supplement the private developers' incentives. As seen in Exhibit 9, there are a number of potential opportunities for the State to use incentives in HWMF siting. If States provide incentives, they should be careful to explain to the public the legitimate State purpose involved.

Chapter 4

State Roles

States face difficult decisions in their attempt to site new facilities to ensure that adequate capacity is available to treat and dispose of hazardous waste. The role each State chooses for itself will be tailored to the problems it faces and its ability to address them. When considering the usefulness of providing compensation or incentives to communities and individuals, States can provide an atmosphere that allows and perhaps encourages them, can require them of developers, can directly provide them, or can assume a passive role. This chapter discusses the two active State roles and the important issues States should consider in implementing either approach. Although the approaches are discussed separately, States can use some combination of approaches to suit their special needs. Appendix B contains the legislative language from several State laws that provide for compensation and incentives

SHOULD STATES DIRECTLY PROVIDE COMPENSATION OR INCENTIVES FOR PRIVATE HWMFs?

Do States have the *legal authority* to provide compensation or incentives? The power to tax and spend in the public interest is a fundamental right possessed by every State. States are free to determine what goods and services they will provide and how they will be financed. Indeed, States routinely make payments to citizens and communities in pursuit of a wide range of public goals. Highway and school aid, urban rehabilitation, welfare grants, and tax abatements are all forms of State expenditures. In each of these areas there is no legal doubt that such expenditures are authorized.

In general, the test of State power to spend is not whether the State will benefit from the expenditure, but whether the public interest is served. Although the courts will normally not interfere with a determination that the public purpose is served by compensation or incentive expenditures, States can ensure the validity of compensation and incentive expenditures by structuring arrangements so that payments are made after all State regulatory approvals are obtained. This approach will help to ensure that the public interest is indeed being served by the State expenditure.

Do States expose themselves to added liability by directly providing compensation or incentives? Providing compensation or incentives to facilitate the siting of a HWMF will not normally subject the State to liability for damages even if that decision proves to have unexpected consequences for the community or

neighboring property owners. Under the rule of sovereign immunity, the courts have held that a State is immune from liability for its acts, particularly if the acts involve discretion. The decision to provide compensation or incentives to a community to facilitate the siting of a hazardous waste facility is the type of discretionary activity that immunity rules protect. Unless a State expressly binds itself to guarantee the safety of a HWMF, it will be immune from suit. This is true even if the State was negligent in making its decision.

Several reasons follow why States may want to provide compensation and incentives directly.

- State provision of compensation and incentives may be an effective inducement to both developers and communities in aiding the siting of facilities that benefit the State as a whole.
- Any State provision of compensation or incentives may help to resolve differences between communities and the developer and thus help to shorten the siting process.
- State authority to override local vetoes is not a panacea. Even in States with these provisions, compensation and incentives may still play an important role in resolving siting issues.
- State compensation or incentives may be the only way in those States with strong home rule laws that States can get facilities sited.
- State provision of incentives or compensation may lessen the perception of unethical payoffs between the developer and a community.

Several reasons why States may want to avoid directly providing compensation and incentives follow:

- State provision of compensation and incentives may be viewed by private developers as public interference with the competitive structure of the hazardous waste facility industry within a State and among States.
- Some view direct State involvement as an unnecessary subsidy of the private sector. In short, compensation costs are considered to be part of the cost of doing business and are, therefore, the responsibility of the private sector.
- State involvement may set a political precedent for payments for other public and private facilities. This concern has been voiced by a number of State hazardous waste officials. If States wish to limit this possibility, special language can be written in the compensation legislation that argues the extraordinary circumstances surrounding hazardous waste facility siting.
- State compensation or incentive payments may *undermine the credibility of the State regulatory role* in the siting and operational review of HWMFs. This is an important argument and one that is of concern to many State hazardous waste agencies. The fact that States would be providing compensation and incentives to *communities and individuals* rather than to *developers* minimizes, however, potential conflict of interest in State roles. There is also precedent for State aid to and regulation of a particular party. For example, States subsidize municipal wastewater treatment plants and the same State agencies regulate them. States provide a number of subsidies, such as economic development loans to private industry, and also regulate their activities. One precaution that States could implement to minimize conflict-of-interest charges is to have a State agency separate from the regulating agency be responsible for the compensation activities.

- Many States are constitutionally prohibited from making long-term monetary or special privilege commitments. Thus, annual payments would have to be legislatively enacted each year.
- Although State-provided compensation or incentives will help to relieve some of the economic burden on private developers, it does allow generators of hazardous waste to escape part of the cost of handling their waste and to place it on others. Unless a separate tax is imposed on waste facilities, the opportunity to induce generators to produce less waste is lost.

WHAT STATE FINANCING METHODS COULD BE USED?

Three sources for financing State-provided compensation or incentives are the following:

- State moneys from the general funds
- fees or taxes on private facility operators or waste generators
- grants or loans from Federal agencies

These approaches are summarized in Exhibit 10.

A number of specific State statutory constraints, such as limits on bonding, affect the finance decision. States should also consider the equity and hazardous waste disposal market impacts of their financing decision. Sole reliance on State general funds burdens all of the State residents and may act as a subsidy to out-of-State hazardous waste generators who dispose in the facility associated with the compensation. These effects can be eliminated by a State-imposed tax or fee on all hazardous waste facilities or by having similar programs in adjacent States.

Because of potential inter-State effects in hazardous waste disposal, States may want to consider formal inter-State compensation and incentives arrangements, for example, agreement on the levels of compensation and incentives and their requirements, and joint funding of common compensation funds. These arrangements could be made through separate memoranda of understanding among State agencies, through regional commissions, or through special, newly developed hazardous waste commissions. RCRA expressly allows for inter-State agreements and organizations for hazardous waste management.

SHOULD STATES REQUIRE PRIVATE FACILITY DEVELOPERS TO PROVIDE COMPENSATION OR INCENTIVES?

In general, States have the power to require private developers to provide compensation. In the absence of a statutory provision expressly limiting such power, an agency or board, authorized by State law to issue permits for siting HWMFs, may impose certain conditions on its approval of applications for such permits. Among these may be a requirement to compensate the community or

Exhibit 10. Alternative Financing Methods for State-Provided Compensation

Method	Definition	Uses/Examples	Issues
General obligation bonds	These bonds are backed by the "full faith and credit" of the issuer and are generally financed by taxes and/or revenues from user charges.	These are suitable for compensation that involves one-time capital expenditures.	These bonds typically carry lower interest rates than revenue bonds. Amount of indebtedness capable of being incurred might affect the use of this mechanism.
General operating revenues	These funds may come from a variety of State sources, such as miscellaneous fees, fines, and taxes.	These are suited to recurring compensation costs or capital costs. They can also be set-aside money for sinking funds that can be used for specific compensation projects.	The use of general operating revenues distributes compensation costs to both users and nonusers. Sinking funds, much like a private savings account, use past revenues to fund current projects.
User charges	These are revenues generated from the use of a project or service and are based on actual or surrogate measurements.	The State may collect these from disposers or operators of a facility to finance capital and recurring compensation costs.	User fees and charges are designed to maximize the "earned rewards" principle by charging users for services received. Product prices will reflect the increased disposal costs and will tend to reduce the amount of waste produced. Higher disposal costs may also require an increased emphasis on enforcing against illegal dumping.

**Exhibit 10. Alternative Financing Methods for State-Provided
Compensation—Continued**

Method	Definition	Uses/Examples	Issues
Generator fees/taxes	These taxes would be levied on all generators of hazardous waste based on amounts generated.	New Jersey funds a Spill Compensation Fund from taxes on transfers of chemical and petroleum products within the State. Revenues are between \$10-15 million per year.	The advantage of generator taxes is that they place the financial burden on parties responsible for creating hazardous wastes. This approach not only spreads compensation costs throughout society but also stimulates reduced waste generation.
Revenue bonds	In this type of bond, payments are derived strictly from charges for services provided.	These are also generally used for capital costs, particularly in cases where charges can be easily matched with the compensation provided. They are also useful where statutory limitations prohibit additional debt via general obligation bonds.	These bonds typically carry higher interest charges than general obligation bonds.
Grants/loans	These are cost-sharing sources outside the jurisdiction. They are generally used to finance a portion of the capital costs of a project.	The State may be able to obtain grants/loans from the Economic Development Administration or regional commissions. In addition, Federal categorical grants, such as highway money, could be used to finance in-kind compensation.	By subsidizing a portion of the capital costs, grants and loans will, of course, reduce the State's share of compensation costs. This may be critical to political acceptability of a compensation measure. Cost-sharing programs, however, may impose conditions that may be unacceptable to the State.

individual property owners for losses they will suffer as a result of the facility's location.

Indeed, courts have approved "required dedications" of land and money to compensate for the adverse consequence of a development when such dedications were made conditions of permit issuance. The only limit that has been placed on such requirements is that the funds or other property demanded must be intended for a purpose related to the use to which the property will be put, and must not be so great as to be regarded as unreasonably onerous in light of that use. Thus, as long as compensation requirements are limited to payments that approximate the likely damages that will be caused by the facility, they are likely to be legally permitted.

The fact that permitting authorities have considerable latitude in formulating compensation requirements does not mean that their discretion is unfettered, however. Their powers are limited by principles of due process and equal protection, as well as by the provisions of any State administrative procedure act that applies. A board's actions may thus be overturned, for example, if compensation conditions are imposed in some instances and not in others, unless there is a rational explanation of this difference.

In the absence of discrimination or specific arbitrary and capricious conditions that violate constitutional or administrative law principles, a permitting authority may feel free to impose conditions requiring payment of compensation in proportion to the damages actually expected to be imposed by the facility.

Both Connecticut and Kentucky have recently passed legislation requiring private facility developers to provide compensation to communities on a formula basis. Massachusetts, also, has passed legislation requiring developer-provided compensation, but has left the amount to be negotiated between the developer and the community. Several positive features of States' requiring developers to provide compensation are:

- Requirements for compensation and incentives will force hazardous waste generators to "internalize" more of the costs of producing their products and to tend to make business decisions that better serve the public interest.
- State requirements for developer-provided compensation or incentives tend to legitimize the concepts. Specific State requirements in the amount of the payments, such as those mandated in Connecticut and Kentucky, tend to mute charges of bribery or illegal payoffs.
- State requirements are also likely to standardize the negotiation process and therefore provide some "ground rules" to help speed up the siting process.

In addition to these supportive arguments, a number of concerns have been voiced by States and the private sector about State compensation and incentive requirements:

- New facilities may be at a competitive disadvantage compared to existing facilities, perhaps making new sites financially unattractive. One solution is to establish an incentives and compensation fund, supported by both new and existing facilities. In either case, increased enforcement may be necessary to ensure that illegal dumping does not increase.
- Specific monetary payment requirements may make it difficult for facilities to obtain private capital financing. Specific formula approaches are, in effect, continuing liens on a facility's revenues.

- Requirements for specific types or amounts of compensation remove some of the flexibility of the developer and recipient to reach mutually agreeable solutions.
- It is generally inappropriate for the State to require a developer to provide benefits above that required to redress actual or potential adverse effects. Incentive requirements appear to be questionable on legal grounds.

Given the potential controversial nature of State compensation requirements, States should incorporate the views of private developers and the general public in developing compensation programs.

Chapter 5

Binding Agreements

It will often be important to potential recipients that promised compensation or incentives will be legally required, particularly if the obligations will continue into the future. Developers may also need a way to demonstrate their trustworthiness and commitment. One method is for the developer to formally and legally pledge his performance in a contract with the recipients. Where possible and appropriate, the developer will generally prefer a promise of support or a promise to refrain from opposition from the recipient in exchange for the developer's pledge. In order to guarantee the performance of both parties, a mechanism to bind them to their agreement is desirable.

In siting HWMFs, two points will color negotiations over compensation and incentive agreements:

- Agreements between local governments and developers to support the siting of a facility are, of course, not binding on the residents of communities. Thus, for some adverse impacts, the developer will have to develop agreements with individual residents or groups. Even agreements with groups may not prevent minority factions in the group from using legal means to oppose a facility siting.
- Local governments cannot contract away their right to control hazardous waste facilities, such as through zoning, occupancy permits, and building permits. Thus, a developer will find it impossible to gain the promise he seeks most—a guarantee that he can build and operate his facility. Rather, the agreement is more of a mechanism for developers to demonstrate their commitment.

In the following sections, two model agreements are discussed, one agreement between a developer and a community, and one between a developer and a private citizen

MODEL AGREEMENT BETWEEN A COMMUNITY AND A FACILITY OWNER

The annotated model agreement below sets forth section by section a number of provisions for mitigation, compensation, and incentives to the "City of Zenith" for potential and certain impacts of a HWMF to be constructed and operated by "Babbit Waste Systems, Inc." Therefore, care must be taken that the City of Zenith gives consideration for all of these promises.

In a contract such as the model agreement, the necessary consideration might conceivably take the form of a promise to accept the facility or not to oppose it.

Note that no such promise appears in this agreement. Even if one did appear, it might be null and void because it exceeded the city's power, because a city ordinarily may not contract away its right and duty to serve the public interest.

Alternatively, the contract might include a promise to forgo any legal remedies that may be available against the owner to obtain damages for the adverse impacts of the facility. That promise is also not made in the model agreement (and indeed is explicitly rejected in the proviso of paragraph IV.A.), because few cities would likely be willing to agree to it.

Another alternative would be for the agreement to recite all of the harms possibly to be suffered by the city and to state that the site owner's promises are to compensate for those harms. This approach was not taken for two reasons: (1) in reality, it would be merely another form of a promise of forbearance such as is rejected in paragraph IV.A., and (2) because many of the impacts recited would not be actionable in court (for example, because they would not render the facility a nuisance), a promise to forgo legal action might be illusory and thus not proper consideration.

A fourth alternative is to tie certain promises to certain harms and thereby to trade forbearance from action *for those harms only* for the compensation agreed to. This approach is explicitly taken in paragraph I.A. However, this is only a partial solution, and the model agreement emphasizes this fact by reciting a list of harms in the preamble much longer than those to be compensated under paragraph I.A.

The alternative selected, therefore, is to make the entire agreement contingent upon some action by the city, rather than any promise. That action is the passage of a resolution supporting the site owner's application, but it could as well be a resolution approving the site, if such a resolution were part of the necessary regulatory procedure. Thus, paragraph V.A. makes the compensation agreement a unilateral contract that does not go into effect until one side—the city—has completed its obligation under it. If the city does not pass the necessary resolution, the contract is not effective. If it does, that action is adequate consideration for all the promises made by Babbit Waste Systems, Inc.

Sections I, II, and III of the model agreement contain a few examples of compensation, mitigation, and incentives that can be included in the agreement. Many more examples, of course, could be devised

Model Compensation Agreement
between

*The City of Zenith
City Hall
Room 101
Zenith, Winnemac*

and

*Babbit Waste Systems, Inc
101 Main Street
Zenith, Winnemac*

WHEREAS Babbit Waste Systems, Inc plans to build a hazardous waste management facility (HWMF) on a site that it owns in the City of Zenith, and that is located at _____ ; and

WHEREAS the construction and operation of the HWMF will result in increased traffic in the City of Zenith, requiring additional expenditures by the City of Zenith for traffic control and road maintenance; and

WHEREAS the construction and operation of the HWMF may result in odors, noise, and/or air pollution and thereby cause damage to the residents of Zenith and to public facilities owned by the City of Zenith; and

WHEREAS the construction and operation of the HWMF may result in adverse impacts on the beauty and quality of the environment of Zenith and thereby lower property values and reduce the property tax base of the City of Zenith; and

WHEREAS the construction and operation of the HWMF may result in ground- and/or surface-water pollution and thereby cause damage to the public water supply owned and operated by the City of Zenith, and

WHEREAS the construction and operation of the HWMF will result in the need for additional expenditures by the City of Zenith for public services, facility inspections, and ground- and surface-water monitoring, and

WHEREAS the construction and operation of the HWMF may increase the risk of other damages to residents of Zenith and/or to the City of Zenith, and

WHEREAS Babbit Waste Systems, Inc. has agreed to undertake the mitigation measures specified in this agreement, and

WHEREAS Babbit Waste Systems, Inc. has agreed to compensate the residents of Zenith and the City of Zenith for such costs as are specified in this agreement;

The parties have agreed as follows:

I Cash Compensation and Fees

A Babbit Waste Systems, Inc. shall pay the following amounts to the City of Zenith as compensation for the costs that will be imposed on it by the construction and operation of the HWMF

(1) Upon approval of the site by the State Facility Siting Board:
\$ _____, as capital for extensions of local services;

(2) Upon commencement of operation of the HWMF
\$ _____ as compensation for start-up expenses connected with extension of local services.

B Babbit Waste Systems, Inc. shall also pay the following amounts to the City of Zenith

(1) During the two (2) years commencing on the first date of operation of the HWMF, a fee of one dollar (\$1.00) per wet metric ton of waste delivered to the HWMF;

(2) Thereafter, a fee as mutually agreed by the parties from time to time; provided that, if the parties are mutually unable to agree on a fee at any time, the fee shall be set at an amount equal to sixty cents (\$.60) per wet metric ton of waste times the number of whole years that the HWMF has been in operation

Paragraph A of Section I contains conventional tied-impact payments for the capital expenses and start-up costs of servicing the facility. Paragraph B sets up a tipping fee and allows it to be renegotiated from time to time.

II. Provision of Services and Other Compensation

A. Babbit Waste Systems, Inc shall provide, without charge, disposal services for up to _____ kilograms per month of hazardous wastes, as defined by the Resource Conservation and Recovery Act, 42 U.S.C. §6903(5), generated by any party or parties designated by the City of Zenith.

B. Babbit Waste Systems, Inc. shall purchase the site located at _____, or an equivalent alternative site mutually agreed upon by the parties, and construct thereon a recreational facility to be dedicated to the City of Zenith, as further specified in Appendix I to this agreement

As an incentive, paragraph A of Section II promises free disposal services to the City or its designee. Paragraph B promises to dedicate a recreational facility to the City. This promise may be regarded as a compensation device, if there will be some loss of recreation in the city as a result of the facility; it may otherwise be regarded as an incentive. Note that the preamble says nothing about lost public facilities as an impact of the facility. Such a reference could, of course, be incorporated if it were needed.

III. Conditions of Construction and Operation

A. Prior to commencement of construction, Babbit Waste Systems, Inc. shall purchase and maintain insurance coverage for liability to third parties for personal injury and property damage in an amount not less than \$_____ per occurrence.

B. Waste shall be transported to the HWMF only along the route specified in Appendix II to this agreement. No wastes shall be received at the HWMF except during the hours of 9.00 a.m. to 5.00 p.m. Mondays through Fridays. No more than _____ truckloads of waste shall be delivered to the HWMF per day.

Paragraph A of Section III provides for liability insurance, in the event of third-party damage. Paragraph B includes some mitigation measures that will alter operation of the facility.

IV. Additional Compensation in the Event of Breach

A. In the event that any one or more of the conditions stipulated in this agreement shall not be met, the City of Zenith shall be entitled to further compensation for the damage caused by breach of the said condition. The compensation shall be determined according to the procedure described in paragraphs B, C, and D below, provided that the City of Zenith's right to such further compensation shall not derogate from any right to other remedies that may be available to it under law.

B In the event that a dispute shall arise over whether any one or more of the conditions stipulated in this agreement have been met, the question shall be decided by a committee of three experts, appointed according to paragraph C below. The decision of the said committee shall be final and binding on those parties

C. The committee of experts shall be appointed as follows

(1) In the event that Babbit Waste Systems, Inc. rejects a claim by the City of Zenith that any one or more of the conditions in this agreement have not been met, the City of Zenith may demand that the claim be resolved by the committee

(2) Within fifteen (15) days of written demand to this effect by the City of Zenith, each party shall appoint one member of the committee

(3) The third member, who shall act as chairperson, shall be chosen by the two members appointed by the parties, and failing agreement between them, by _____

D. In the event that the committee of experts shall decide that one or more of the conditions stipulated in this agreement have not been met, the additional compensation to which the City of Zenith is entitled under paragraph A. above shall be determined as follows:

(1) The City of Zenith shall submit a claim to Babbit Waste Systems, Inc , who shall respond to that claim within ninety (90) days

(2) If Babbit Waste Systems, Inc rejects the claim, representatives of both parties shall meet, together with a mediator who shall be named by the chairperson of the committee of experts that determined that the condition had not been met

(3) With the help of the said mediator, the parties shall negotiate in good faith and shall attempt to evaluate the further costs imposed on Zenith by breach of the relevant condition

(4) Should the parties fail to reach agreement on this matter, the question shall be submitted to arbitration before an arbitrator who shall be appointed by the mediator

(5) The arbitrator's decision, which will be final and binding on both parties, will stipulate the sum of compensation to be paid, or services to be provided, and the time when such compensation will be paid or services provided.

(6) The arbitrator shall determine which of the parties shall pay the costs of the arbitration

Section IV could be completely removed from the agreement without affecting the substantive obligations under it. The section is purely procedural and establishes a mediation and arbitration procedure for handling breaches of contract conditions. If this provision were omitted, such breaches would have to be litigated. In either event, however, the same substantive rights would be at issue

V. Effective Dates

A. This agreement shall become effective and binding on the parties when the application of Babbit Waste Systems, Inc. for approval of the site is approved by the State Facility Siting Board if, within one (1) month of the signing of this agreement, the Governing Board of the City of Zenith shall have passed the resolution, contained in Appendix III of this agreement, in support of the said application.

B This agreement may be terminated by either party if both of the following conditions are met:

(1) Written notice of the termination, together with a request for a stay of the proceedings on the application of Babbit Waste Systems, Inc. for approval of the site by the State Facility Siting Board, is received by the Board prior to its ruling on the application

(2) Written notice of the termination is delivered by hand to the other party at the office address provided in the heading of this agreement, above.

As noted above, Section V transforms the model agreement into a unilateral contract and solves the problem of consideration. Paragraph A also states that the agreement is not effective unless the site is approved.

Paragraph B is designed to protect the site owner in the situation that the board passes the required resolution but then either it or its members or other community representatives take action to undermine the effectiveness of the resolution. In such a case, the site owner may terminate the agreement if he alerts the Siting Board of the fact in time for it to delay its decision on the application until it has had time to consider the effect of the lack of an agreement. The same paragraph also protects either party in the event that anything else occurs to make the agreement unsatisfactory during the possibly long period of time between the filing of the application for site approval and the ruling on it.

MODEL AGREEMENT BETWEEN A FACILITY OWNER AND AN INDIVIDUAL

The model agreement sets forth a number of provisions for mitigation, compensation, and incentives to "Samuel Dodsworth" for the potential and certain impacts of a HWMF to be constructed and operated by "Babbit Waste Systems, Inc."

The problem of securing proper "consideration" is not as difficult in private compensation agreements as it is in agreements with local governments because private parties may freely agree to support a hazardous waste facility in the future, regardless of the public interests affected. Nevertheless, the best structure for a private compensation contract is the same as for an agreement with the Government—a unilateral contract. Such an agreement does not go into effect unless one of the parties (here, Samuel Dodsworth) completes the action that constitutes the consideration for the other party's promises.

Sections I, II, and III of the model agreement contain a few examples of compensation, mitigation, and incentives that can be included in the agreement.

They differ, of course, from the items contained in the model agreement with the City of Zenith. Some of the provisions, however, are similar.

Model Compensation Agreement

between

Babbit Waste Systems, Inc
101 Main Street
Zenith, Winnemac

and

Samuel Dodsworth
1 Rosebud Lane
Zenith, Winnemac

WHEREAS Babbit Waste Systems, Inc. plans to build a hazardous waste management facility (HWMF) on a site that it owns, located at _____ adjacent to property located at _____ that is owned by Samuel Dodsworth (the "abutting site")

WHEREAS the construction and operation of the HWMF will result in increased traffic on Rosebud Lane in front of the abutting site; and

WHEREAS the construction and operation of the HWMF may result in odors, noise, and/or air pollution and thereby cause damage to Samuel Dodsworth and to the abutting site, and

WHEREAS the construction and operation of the HWMF may result in adverse impacts on the beauty and quality of the environment of Zenith and thereby lower the property value of the abutting site; and

WHEREAS the construction and operation of the HWMF may result in ground- and/or surface-water pollution and thereby cause damage to the well water presently used to supply the abutting site; and

WHEREAS the construction and operation of the HWMF will result in the need for ground- and surface-water monitoring on the abutting site; and

WHEREAS the construction and operation of the HWMF may increase the risk of other damages to Samuel Dodsworth and/or to the abutting site; and

WHEREAS Babbit Waste Systems, Inc. has agreed to undertake the mitigation measures specified in this agreement, and

WHEREAS Babbit Waste Systems, Inc. has agreed to compensate Samuel Dodsworth for such costs as are specified in this agreement;

The parties have agreed as follows

I. Cash Compensation and Fees

A. Babbit Waste Systems, Inc. shall pay Samuel Dodsworth, upon approval of the site by the State Facility Siting Board, the amount of \$_____, as compensation for the annoyance, noise, odor, and other temporary impacts on the abutting site from construction of the HWMF.

B. Babbit Waste Systems, Inc. shall also pay Samuel Dodsworth the following additional amounts for so long as Samuel Dodsworth refrains from bringing suit for any property damage to the abutting site arising out of the operation of the HWMF:

(1) During the two (2) years commencing on the first date of operation of the HWMF, a fee of \$_____ per month;

(2) Thereafter, a fee as mutually agreed by the parties from time to time; provided that, if the parties are mutually unable to agree on a fee at any time, the fee shall be set at \$_____ per month

Paragraph A of Section I contains a single lump-sum fee stated to be a compensation for the major construction impacts of the facility. Paragraph B sets up a monthly fee in exchange for continued forbearance from bringing an action for damages. This fee may be renegotiated from time to time.

II Provision of Services and Other Compensation

A Babbit Waste Systems, Inc. shall provide, without charge, disposal services for up to _____ kilograms per month of hazardous wastes, as defined by the Resource Conservation and Recovery Act, 42 U.S.C. §6903(5), generated by Samuel Dodsworth.

B Babbit Waste Systems, Inc shall purchase from Samuel Dodsworth for \$_____, a buffer strip designated as lot A on the plan attached as Appendix I to this agreement and shall plant thereon a hedge, acceptable to Samuel Dodsworth, and sufficient to form a visual screen between the HWMF and the abutting site.

C. Babbit Waste Systems, Inc. shall reimburse Samuel Dodsworth for the purchase and installation of ground- and surface-water monitoring devices, as specified in Appendix II to this agreement, and shall further reimburse Samuel Dodsworth for monitoring services and maintenance of the said devices in an amount not to exceed \$_____ per year

As an incentive, paragraph A of Section II promises free disposal services to Samuel Dodsworth. Paragraph B promises to create a buffer strip between the facility and the abutting site. This promise is a mitigation device, peculiarly suited for dealing with abutters. Another mitigation device appears in paragraph C, which provides that Babbit Waste Systems, Inc. will pay the costs of ground- and surface-water monitoring on the abutting site.

III. Conditions of Construction and Operation

A. No wastes will be stored or disposed of on the HWMF at locations less than _____ yards from the abutting site or _____ yards from Rosebud Lane.

B. Babbit Waste Systems, Inc shall institute the practices specified in Appendix III to this agreement for the prevention of hazardous waste spills at the HWMF.

Paragraph A of Section III provides for setbacks and sideyards, to mitigate the impact of the facility further. Paragraph B includes additional mitigation measures in the form of spill prevention practices.

IV Compensation for Damages

A Babbit Waste Systems, Inc. shall establish a fund of \$ _____ that will be used to mitigate any effects of the HWMF on individual residents of Zenith, with whom Babbit Waste Systems, Inc enters into agreements substantially similar to this agreement, and to compensate such residents for those decreases in property values that result directly from construction and/or operation of the HWMF.

B Claims for mitigating measures and/or compensation for Samuel Dodsworth shall be decided by an assessment board of three people who shall be appointed in the manner specified in paragraph C below

C The assessment board shall be appointed as follows:

(1) Within fifteen (15) days of submission of a claim to Babbit Waste Systems, Inc., each party to this agreement shall appoint one member of the board

(2) The third member, who shall act as chairperson, shall be chosen by the two members appointed by the parties, and failing agreement between them, by _____

D. After affording Samuel Dodsworth and a representative of Babbit Waste Systems, Inc. the opportunity to be heard on the claim, the assessment board shall determine Samuel Dodsworth's entitlement to compensation and/or mitigating measures. The board may attach whatever conditions it deems appropriate to the award of such compensation and/or mitigating measures.

E The liability of Babbit Waste Systems, Inc under this agreement for all claims submitted by Samuel Dodsworth shall be limited to the sum of the fund established under paragraph A. provided that this fund shall in no way restrict the legal liability of Babbit Waste Systems, Inc for claims not submitted to the assessment board, or for claims that cannot be met because of depletion of the fund

Section IV, unlike the similar one in the public compensation agreement, could not be completely removed without affecting the substantive obligations of the parties. The section establishes a procedure for handling claims arising from operation of the facility and creates a fund to compensate those claims. However, the section permits compensation in instances where the harms caused are not actionable in a court proceeding either as a breach of contract or as a tort. Note that Samuel Dodsworth may pursue a claim under this procedure without disturbing his right to a monthly fee under paragraph I.B. Once the compensation fund is depleted, however, he cannot pursue a remedy without forfeiting his monthly fee.

V Effective Dates

A This agreement shall become effective and binding on the parties when the application of Babbit Waste Systems, Inc. for approval of the site is approved by the State Facility Siting Board if Samuel Dodsworth shall have cooperated with Babbit Waste Systems, Inc. in any hearings before the said Board

B This agreement may be terminated by either party if both of the following conditions are met

(1) Written notice of the termination, together with a request for a stay of the proceedings on the application of Babbit Waste Systems, Inc. for approval of the site by the State Facility Siting Board, is received by the Board prior to its ruling on the application

(2) Written notice of the termination is delivered by hand to the other party at the office address provided in the heading of this agreement, above.

As noted above in the previous agreement, Section V transforms the model agreement into a unilateral contract and solves the problem of consideration. Paragraph A also states that the agreement is not effective unless the site is approved. Paragraph B is designed to protect the site owner in the same manner as the comparable paragraph in the public compensation agreement. In addition, this paragraph diminishes the ambiguity of the word "cooperated" in paragraph A. A court would normally interpret "cooperate" to mean "reasonably cooperate" if the issue were raised before it. However, paragraph B allows Babbit Waste Systems, Inc. to terminate the agreement if it believes that the quality of the cooperation it is receiving is inadequate. Paragraph B also allows Samuel Dodsworth to terminate the agreement if he believes that the cooperation being demanded is too burdensome. The practical impact of paragraph B, if neither party terminates the agreement, is that this fact alone is strong evidence that the cooperation given was "reasonable."

Appendix A

Mitigation Techniques

INTRODUCTION

Why mitigate? Mitigation prevents or reduces adverse impacts. Even though Federal and State regulations require facilities to lessen their possible impacts, there are several reasons why mitigation above that required by regulatory review processes may be appropriate in siting HWMFs.

- It is often cost-effective to avoid impacts rather than to pay compensation or pay for the consequences of an avoidable accident.
- Minimizing impacts will better enable the hazardous waste facility to develop a "good neighbor" track record—which is especially important for staying in business
- Mitigation minimizes the problem of estimating the cost of impacts and negotiating compensation.
- Mitigation may be strategically useful in demonstrating commitment and credibility when negotiating with local groups.

Because mitigation is very site-specific, this section does not cover every mitigation technique that may be appropriate in siting facilities, but it does provide some examples for two generic types of mitigation—changes in the design of facilities and changes in the operation of facilities. Both types of mitigation are appropriate for a wide range of potential impacts, including traffic, noise, air pollution, ground- and surface-water pollution, odors, overall risk problems, and aesthetics.

The research in EPA's *Siting of Hazardous Waste Management Facilities and Public Opposition* suggests that disposal facilities that leave waste in place and relatively intact (landfills, surface impoundments, and injection wells) tend to raise more issues requiring mitigation in the siting process than transfer and storage stations or treatment and incineration facilities.

FACILITY DESIGN CHANGES

Changes to the facility design beyond those required by the permitting agency may include *deletions*, such as decreasing the size of the facility; *modifications*, such as increasing the height of an incinerator stack; or *additions*, such as purchasing additional land to buffer neighboring properties. Facility changes also

encompass changes in the vehicles used to haul hazardous waste to a facility, such as the addition of a spill containment system. See Exhibit 11 for examples of facility design changes.

Some design changes, however, are potentially very costly and may render the proposed facility financially unattractive. In addition, redesigning major features of the facility is more difficult and costly after detailed plans have been prepared. It is especially important, therefore, to involve the local public early in the design process so community concerns can be addressed.

Except where a facility is State-owned, facility design changes beyond permitting requirements are generally inappropriate for States to require and impossible for States to provide. However, there are instances, particularly with respect to offsite impacts, where it may be more practical and feasible for a State to mitigate adverse impacts. For example, the State could purchase a buffer zone or improve the access road to a site without compromising its regulatory responsibilities. While State sharing of this type of mitigation would potentially relieve the economic burden on the private sector, more appropriate State incentives could be used to deal with the issues that this mitigation technique is intended to resolve. These include site banks and facility development loans to the private sector.

Exhibit 11. Facility Design Changes

Case Examples:

In disposing of hazardous wastes in abandoned missile silos, Wes-Con of Grandview, Idaho, the site operator, provides clay lids every 50 feet to help reduce odors and prevent fires.

The City of Indianapolis installed emergency spill containment systems on its sludge-hauling trucks when it developed a landspreading site for sludge disposal.

Other Possibilities:

Add extra or thicker liners for landfills	Increase the number of ground-water monitoring wells
Incorporate larger buffer zones or earth berms to minimize aesthetic and noise impacts	Add condenser to eliminate visible steam from incinerator stack
Increase stack heights to disperse incinerator particulates in more diluted amounts	Enlarge the area for trucks to pull off the highway, slow down, and turn into facility
Construct transfer station in another area and use larger trucks or railcars	Add landscaping and appealing signs and lighting

FACILITY OPERATION CHANGES

Changes to the operation of a facility beyond the requirements of the permitting agency encompass changes in the *onsite operations*, such as operating hours,

changes in *offsite operations*, such as waste hauling routes; and restrictions on the *types of waste* allowed in the facility. When the State is the owner or the operator of a facility, operation changes beyond the requirements of the RCRA permit are clearly legitimate mitigation measures for the State to provide. As a means of stimulating further HWMF operating credibility, the State may also require private operators to fund third-party participation in monitoring.

State operational requirements on private developers, however, must be exercised with some caution. Although operational changes can be an effective and inexpensive way of mitigating impacts, some requirements—such as increased security and monitoring—are not trivial. Unlike design changes, the costs of which may be paid once by the developer, operational requirements may pose *recurring costs*. See Exhibit 12 for examples of facility operation changes.

Exhibit 12. Facility Operation Changes

Case Example: Independent Monitoring

The Boston Edison (BE) Company and the Massachusetts Wildlife Federation (MWF) agreed to an additional variation on arrangements for radiological monitoring at the Pilgrim nuclear power plant in Plymouth, Massachusetts. When attempting to build an additional facility at the existing power plant, BE was confronted by the MWF about the monitoring issue. A settlement agreement was negotiated in 1976 that included, in addition to BE's monitoring program, an oversight advisory committee to administer the monitoring program. This committee comprised members from BE, MWF, and State agencies.

Case Examples: State Ownership and Operations

The Maryland Environmental Service (MES) has legislative authority to operate a number of environmental facilities. These include municipal wastewater treatment facilities, municipal drinking water facilities, solid waste landfills, and hazardous waste facilities. In an attempt to site a hazardous waste landfill in Rossville, Maryland, to dispose of chromium waste from its Baltimore plant, Allied Chemical proposed that MES operate its facility. The HWMF site was eventually rejected by the county for a number of reasons unrelated to MES' proposed operation of the facility.

The Gulf Coast Authority (GCA) in Houston, Texas, is moving quickly toward public operation of a HWMF through a special district arrangement in which waste generators are cooperating with this special authority to jointly finance and own a facility. GCA will operate the facility.

The New York State Environmental Facilities Corporation (EFC) has the authority to own and operate HWMFs. The EFC, however, has not yet exercised this authority. In addition, the EFC has the authority to acquire HWMF sites by eminent domain and to finance the construction of facilities. These facilities may include its own facilities, other State agency facilities, or community-owned HWMFs.

Other Possibilities:

The developer can allow impartial, technically competent, independent parties to monitor and oversee his operation. More important, monitoring by local officials or their own experts (perhaps at the developer's expense) is likely to be the most effective assurance of the developer's

Exhibit 12. Facility Operation Changes—Continued

promises to the community. The implementation requirements for independent monitoring include: financing, a binding agreement, determining monitoring issues (e.g., ground-water, staff training, emergency containment systems), choosing the independent monitor (private laboratory, environmental group, community representatives, a combination of these), and determining the frequency of monitoring and access to the facility.

Operating hour restrictions represent a useful technique for mitigating traffic-related noise impacts and traffic during sensitive hours such as evenings and weekends. There is precedent for this technique in the planned restrictions on airport flight operations.

Waste haul route changes offer opportunities to reduce traffic, traffic-related noise impacts, and risks associated with spills and accidents.

Waste type restrictions at the facility may alleviate fears associated with the handling and disposal of certain wastes. The Wes-Con facility in Grandview, Idaho, does not accept kepones, military poison gas, or pressurized gas, regardless of the suitability of their site for these wastes.

SELECTING MITIGATION ALTERNATIVES

Selecting the appropriate mitigation alternative is obviously not a clear-cut exercise. A hypothetical example is shown in Exhibit 13 to illustrate the difficulty in selecting among possible alternatives. As seen in this example, the selection and evaluation of mitigation measures should consider a number of factors. These factors include:

- cost
- effectiveness
- implementation feasibility
- secondary effects

In most cases, mitigation measures will add costs to the overall project. The magnitude of these costs, of course, depends on the type of impact being mitigated. It is possible to minimize mitigation costs by considering as many mitigation alternatives as possible. For example, in the truck traffic impact example in Exhibit 13 the cost range is fairly large. In general, as shown in the example, it is easiest to compare costs when expressed in present-value form.

Effectiveness refers to the ability of the proposed mitigation measure to prevent or reduce the impact of concern. The level and type of mitigation for a specific impact beyond that required by local or State regulatory agencies may result from the negotiation process between the developer, the State, the community, and the parties affected. In short, the amount of mitigation required may be a very subjective issue.

Like any other project, mitigation measures may face *implementation feasibility* constraints. These may include legal authority problems, administrative feasibility

Exhibit 13. Mitigation Alternatives for Dealing with HWMF Truck Traffic Impacts (Hypothetical Example)

<i>Mitigation Alternatives</i>	<i>Cost*</i>	<i>Effectiveness</i>	<i>Implementation Feasibility</i>	<i>Secondary Impacts</i>
A. Reduce size of facility	\$3,600,000 (lost profits)	Will cut truck traffic by 50%	No special problems except for financial feasibility of a smaller facility	Will require another facility in the metropolitan area to meet hazardous waste disposal needs; higher disposal costs to industry
B. Reroute traffic along different highway(s)	\$750,000 (cost of repairing alternative route)	Will eliminate traffic in residential area; will shift traffic to rural route; difficult to enforce	May shift political opposition to another area; otherwise no special problems	Fewer people affected by rural route, but opposition may be encountered
C. Construct transfer station in another area; use long-haul trucks	\$4,200,000	Will cut truck traffic by 75%	Will be politically difficult unless done in local industrial area	Will require the siting of the transfer station with all of its attendant impacts; increased risk because of extra handling; roadways may deteriorate more quickly
D. Limit operating hours to weekdays, 9:00 a.m. to 5:00 p.m.	\$500,000 (lost profits)	Will eliminate truck traffic during sensitive hours	No special problems	Will concentrate truck traffic in peak traffic hours, thereby increasing traffic accident risk

*These are costs (capital, O&M, lost profits) to the developer or to the State and are expressed in present-value terms on the basis of a 20-year design life for the facility.

issues, and political acceptability problems. In broad terms, implementation feasibility is concerned with the issues shown below:

<i>Implementation Feasibility Criteria</i>	<i>Issues</i>
<i>Legal authority</i>	<i>Whether or not the implementation or institutional arrangements are legal</i>
<i>Administrative capability</i>	<i>Whether the firm or public agency has necessary skills to perform required administrative responsibilities</i>
<i>Political acceptability</i>	<i>Whether the public supports the implementation scheme</i>

Implementation feasibility may be particularly difficult to evaluate if the proposed mitigation scheme involves some type of joint public/private arrangement or action. For example, using the traffic impact example, Alternative B involves rerouting traffic along different highways to avoid residential areas. State and local highway regulations, however, may preclude the use of alternative routes. In this case, implementing a rerouting alternative may simply be infeasible.

Finally, an important issue to consider is the indirect or *secondary impact(s)* that may be induced by the mitigation measure. Simply put, a solution to one problem may lead to another problem. The transfer station alternative (Alternative C) is a good example. This alternative essentially involves siting two hazardous waste disposal facilities instead of one. The additional facility may require as much complex negotiation as the original disposal facility. The traffic rerouting alternative may pose similar indirect impact issues, because the amount of traffic is not being reduced, rather, the problem is only relocated. The example illustrates the trade-offs that have to occur in responding to impacts. The most effective measure—the transfer station alternative—is also the most expensive and is complicated by the political problems of siting another facility. The least expensive option—the limitations on operating hours—does not totally prevent the problem.

Appendix B

Examples of State Compensation Legislation

CONNECTICUT (PUBLIC LAW 80-472)

Sec. 12. (NEW) Within thirty days following the end of each calendar quarter, the owner or operator of a hazardous waste disposal facility shall report to the chief elected official of the municipality in which such facility is located and to the commissioner of environmental protection, on a form furnished by said commissioner, the number of gallons or cubic yards of hazardous waste received by such facility in such calendar quarter, and the gross receipts of such facility in such calendar quarter. The owner or operator shall remit to the municipality, with such form (1) payment in an amount equal to five cents per gallon or three dollars and fifty cents per cubic yard for each gallon or cubic yard of hazardous waste received in such quarter, or (2) payment in an amount determined in accordance with the following table at the percentage applicable to each level of quarterly gross receipts, whichever is greater:

<i>Quarterly Gross Receipts</i>		
<i>Over</i>	<i>Not Exceeding</i>	<i>Payment as Per Cent of Gross Receipts</i>
\$ 0	\$1,250,000	10.0
1,250,000	\$2,500,000	5.0
2,500,000		2.5

If a hazardous waste disposal facility is located in more than one municipality, such owner or operator shall report to each such municipality and such payment shall be made pro rata, based on the number of gallons or cubic yards of hazardous waste disposed of in each such municipality.

KENTUCKY (KRS, CHAPTER 68)

The fiscal court of any county may license off-site waste management facilities located within the county with the imposition of a license fee at a percentage rate not to exceed two percent (2%) per annum of the gross receipts of such a waste

management facility owned or operated by self-employed individuals, partnerships, or corporations. The proceeds from the license fee shall be used to defray the general revenue requirements of the county where the facility is located. For purposes of assessing the licensing fee provided for in this section, off-site waste management shall consist of establishing and operating a facility whose principal purpose is treatment, storage, disposal, or a combination of these activities, but shall not include those treatment, storage, or disposal activities which occur incidental to or which are not otherwise distinguishable from a broader manufacturing operation at the site of said operation.

MASSACHUSETTS (CHAPTER 21D OF THE GENERAL LAWS)

Section 12. No facility shall be constructed, maintained or operated unless a siting agreement shall have been established by the developer and the local assessment committee of a host community pursuant to sections twelve and thirteen of this chapter and said agreement has been declared to be operative and in full force and effect by the council. After said declaration by the council, a siting agreement shall be a non-assignable contract binding upon the developer and the host community, and enforceable against the parties in any court of competent jurisdiction.

The siting agreement shall specify the terms, conditions and provisions under which the facility shall be constructed, maintained and operated if the developer chooses to construct, maintain and operate a facility on said site, including, but not limited to the following terms, conditions, and provisions:

- 1) facility construction and maintenance procedures;
- 2) operating procedures and practices, the design of the facility and its associated activities;
- 3) monitoring procedures, practices and standards necessary to assure and continue to demonstrate that the facility will be operated safely;
- 4) the services to be provided the developer by the host community;
- 5) the compensation, services, and special benefits that will be provided to the host community by the developer, and the timing and conditions of their provision,
- 6) the services and benefits to be provided to the host community by agencies of state government, and the timing and condition of their provision;
- 7) any provisions for tax prepayments or accelerated payments, or for payments in lieu of taxes;
- 8) provisions for renegotiation of any of the terms, conditions, or provisions of the siting agreement, or of the entire agreement;
- 9) provisions for resolving any disagreements in the construction and interpretation of the siting agreement that may arise between the parties; and
- 10) appendices of the compensation to be paid abutting communities established pursuant to the provisions of section fourteen of this chapter.

The siting agreement may also include, but shall not be limited to, the following provisions:

- 1) provisions for direct monetary payments from the developer to the host

- community in addition to payments for taxes and special services and compensation for demonstrable adverse impacts;
- 2) provisions to assure the health, safety, comfort, convenience, and social and economic security of the host community and its citizens;
 - 3) provisions to assure the continuing economic viability of the project; and
 - 4) provisions to assure the protection of the environment and natural resources.

None of the terms, conditions and provisions of a siting agreement shall operate to derogate in any way from the requirements established by any general or special law.

Any financial benefits received by host communities or abutting communities, other than taxes on real or personal property, shall not be deducted from any amounts of state assistance, reimbursements or distributions provided by general and special laws or under the local aid fund established by section two D of chapter twenty-nine.

Section 13. A siting agreement may be established (1) by the signature of the chief executive officer of a host community who has been directed by a majority vote of the local assessment committee of said host community to sign and the signature of any officer of the developer expressly authorized by the developer to sign said agreement, or (2) by arbitration pursuant to section fifteen of this chapter.

Section 14. The chief executive officer of any abutting community may, within sixty days of the determination by the secretary and the council that a preliminary project impact report is in their judgment in compliance with applicable law, petition the council for the establishment of compensation to be paid by the developer to the abutting community for the demonstrably adverse impacts to be imposed upon said community by the construction, maintenance and operation of a hazardous waste facility in a host community. As a condition precedent to the filing of said petition, the chief executive officer shall agree in writing on a form prescribed by the council, and he is herewith given the authority to bind his city or town to such an agreement, that his city or town shall either accept the compensation to be determined by the council or the compensation established by arbitration pursuant to the procedures established in this section in full settlement of any claims for demonstrably adverse impacts imposed by the current proposed project. The chief executive officer shall also agree, as an essential part of said condition precedent, that he will sign an agreement with the developer accepting the amount established by the council or by arbitration pursuant to this section, which agreement shall be a nonassignable contract binding on the abutting community and the developer, and enforceable as such in any court of competent jurisdiction.

The council, after due notice to the developer, the local assessment committee, and the chief executive officer of the abutting community which has petitioned shall conduct a public hearing to determine and establish the compensation to be given to the abutting community by the developer. If the chief executive officer of the abutting community or the developer is aggrieved by the amount of compensation established by the council, either party may appeal to the council to establish an arbitration panel, which shall be comprised of three arbitrators, to resolve the dispute. The council, upon such appeal, shall establish said arbitration panel by appointing one arbitrator selected by the chief executive officer of the abutting community, one arbitrator selected by the developer, and the third an

impartial arbitrator, who shall be selected by the chief executive officer of the abutting community and by the developer and who shall act as chairman of the panel or, if the chief executive officer of the abutting community and the developer agree, a single impartial arbitrator acceptable to the chief executive officer of the abutting community and the developer.

If an arbitration panel or single arbitrator has not been selected within thirty days after an appeal for arbitration has been filed, the council shall appoint the arbitrator or arbitrators necessary to complete the three person panel, which shall act with the same force and effect as if the panel had been selected without the intervention of the council.

The arbitration panel by a majority vote or single arbitrator shall within forty-five days after establishment determine the amount of compensation to be paid by the developer to the abutting community. The council, upon request of the arbitration panel or the single arbitrator, may extend the time for the conduct of arbitration.

The arbitrators or arbitrator, subject to appropriation, shall receive from the council such compensation for each day or part thereof for his services as a majority of the council shall establish. He shall also receive, subject to appropriation, all reasonable expenses actually and necessarily incurred in the performance of his official duties.

The developer shall agree in writing on a form prescribed by the council that, as a condition precedent to the establishment of a siting agreement, he shall accept the amount established by the council or by arbitration pursuant to this section as the amount of compensation he shall pay to the abutting community. The developer shall also agree, as an essential part of said condition precedent, that he will expressly authorize one of his officers to sign an agreement with the chief executive officer of the abutting community, which agreement shall be a nonassignable contract binding on the developer and the abutting community and enforceable as such in any court of competent jurisdiction.

The provisions of chapter two hundred and fifty-one shall govern the conduct of arbitration proceedings pursuant to this section, including the provisions of said chapter for judicial review of an arbitration award.

Appendix C

Bibliography

COMPENSATION CONCEPTS, STRATEGIES, AND IMPLEMENTATION CONSIDERATIONS

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This short paper (20 pp.) presents some of the reasons why compensation techniques are not used more often in the siting of controversial facilities. The author suggests how to overcome some of the obstacles in using compensation.

Bacow, Lawrence S., and Kretzmer, David. *Draft Legislation for an Energy Facility Siting Process Incorporating Compensation*. MIT Energy Impacts Project, Discussion Paper No. 18, October 1979.

In outlining legislation to guide energy facility siting, the authors advocate a siting procedure including compensation agreements between a community and facility for negative effects on the community as a result of facility construction and operation. An Energy Facility Review Board is also recommended to, among other things, ensure compensation agreements.

Bacow, Lawrence S., and Rose, Judah. *Compensating Diffuse Interest Groups for Social Costs*. MIT Energy Impacts Project, Document No. 14, Part B, September 1979.

Discusses usefulness of compensation as a tool for assuaging the concerns of geographically diffuse opposition groups (public interest groups rather than directly affected residents) in siting energy facilities. Identifies key problems of opposition based on ideological benefits and the difficulty of binding compensation recipients to contractual agreements under existing legal rules.

Becker, Jeanne Felbeck. *The Use of Incentives and Compensation to Overcome Public Opposition to the Siting of Hazardous Waste Landfills*. University of Wisconsin, Milwaukee, May 1980.

This paper explores compensation and incentives specifically related to hazardous waste facility siting. Issues, objectives, techniques, and implementation are all thoroughly considered. Additionally, hazardous waste management in Wisconsin is detailed.

Blackburn, Anthony J., et al. *A Comprehensive Policy to Ameliorate Adverse Impacts of Transportation Facilities*. Urban Systems Research & Engineering, Inc., for the Department of Transportation, 1975.

Alternatives for the reduction of the adverse impacts of transportation facilities are reviewed, and techniques including tied and untied assistance payments for the treatment of impacts are proposed. Draft legislation is outlined involving compensation to municipalities and commercial and residential landowners. Detailed development and rationale for the compensation policy are presented.

Booz, Allen & Hamilton, Inc. *Hazardous Waste Management Capacity Development on the Delaware River Basin and New Jersey: A Program Strategy*. Prepared for Delaware River Basin Commission and N.J. Department of Environmental Protection, April 1980.

Presents a hazardous waste development strategy incorporating some compensation techniques including direct cash payments to communities in which facilities are located using tipping fees.

Brenner, Robert D. *Social, Economic and Political Impacts of National Waste Terminal Storage Repositories*. Center for International Studies, Princeton University, January 1979.

Mostly deals with mitigating socioeconomic impacts associated with the construction of nuclear waste storage facilities. Also critiques O'Hare's "auction method," arguing for up-front impact mitigation with cash compensation as a last resort.

Chemical Manufacturers Association. *A Statute for the Siting, Construction and Financing of Hazardous Waste Treatment, Disposal, and Storage Facilities*. No date.

This model siting legislation attempts to address local needs and concerns and to provide a mechanism for selecting and authorizing acceptable sites for hazardous waste management. The key mechanism offered in the legislation is a council of State-oriented individuals and local citizens with the ultimate authority to approve a site. The model legislation is presented with comments and a rationale for each section.

Clark-McGlennon Associates, Inc. Handbook series prepared for the New England Regional Commission's *The Search for Solutions*. November 1980.

Handbooks include:

1. A Decision Guide for Siting Acceptable Hazardous Waste Facilities in New England;
2. An Introduction to Facilities for Hazardous Waste Management: A Handbook on Siting Acceptable Hazardous Waste Facilities in New England;
3. Criteria for Evaluating Sites for Hazardous Waste Management: A Handbook on Siting Acceptable Hazardous Waste Facilities in New England;
4. Institutional Arrangements for Developing Hazardous Waste Facilities in New England;
5. Negotiating to Protect Your Interests: A Handbook on Siting Acceptable Hazardous Waste Facilities in New England.

The last handbook listed above deals with compensation and negotiation techniques for hazardous waste facility siting with an emphasis on the problems/perspectives of New England. It provides answers to many basic questions concerning these techniques—their purpose, usefulness, rationale, and how they can be used successfully in the siting process.

Cole, R. J., et al. *Compensation for the Adverse Effects of Nuclear Waste Facilities*. Battelle Memorial Institute, Human Affairs Center, Seattle, Washington, July 1978.

This paper presents one of the most complete analytical decisionmaking frameworks for incorporating compensation into facility siting. It concerns nuclear waste facilities, but the ideas are widely applicable. Valuable as a complete checklist of issues to consider in developing a compensation program, although many of the individual issues are not well developed.

Ervin, D., and Fitch, J. B. "Evaluating Alternative Compensation and Recapture Techniques for Expanded Public Control of Land Use," *Natural Resources Journal*, Volume 19, No. 1, January 1979.

Thorough presentation of three compensation techniques based on the concepts of "equity" (compensation for sufferers) and "recapture" (funds for compensation should come from windfall gains of "winners"). Techniques include transferable development rights, zoning by eminent domain, and zoning auctions.

Farkas, Alan L. *Addressing Local Opposition to the Establishment of New Hazardous Waste Disposal Sites*. Booz, Allen & Hamilton, Inc., January 1980.

Assesses several roles for States in siting hazardous waste facilities with a brief discussion of States directly providing or requiring private developers to provide compensation. Also considers incentives including statutes and siting boards, postclosure management, public financing of private facilities, and public ownership of facilities.

Hagman, Donald, and Misczynski, Dean. *Windfalls for Wipeouts: Land Value Capture and Compensation*. American Society of Planning Officials, Chicago, 1978.

Long and detailed work defining and making policy arguments for mitigating impacts and recapturing benefits in land use projects. Includes in-depth discussion of models and specific case examples.

Kretzmer, David. *Binding Communities to Compensation Agreements for Facilities*. MIT, Laboratory of Architecture and Planning, May 1979.

A comprehensive discussion of compensation agreements between utility companies and the communities in which they are located, addressing the questions of whether or not a community can bind itself to a host facility and, if not, the kinds of compensation agreements that can be formulated instead. Presents a detailed analysis of the legal basis for compensation agreements, a potential legal structure for the formulation of binding agreements, and a fictional case with a model compensation agreement.

Mulch, Jerome E. "Feasible and Prudent Alternatives: Airport Development in the Age of Public Protest," *Public Policy*, Winter 1976.

This article describes the development of opposition to airports and the legal authority behind the purchase of aviation easements, the use of airport assessment districts, or the provision of sound attenuation materials to communities. Specific costs for implementing various alternatives nationwide as well as issues surrounding the cost efficiency and effectiveness of compensation are also discussed.

Mumphrey, A. J., and Wolpert, J. "Equity Considerations and Concessions in the Siting of Public Facilities," *Economic Geography*, Volume 49, April 1973.

Ponders a model examining comparative economic efficiency and equity of potential facility locations resulting in either direct payments or no payments at all. Includes discussion of technique selection and compensation rationale.

O'Hare, Michael. "Compensation for Development Impacts—Streamlining the Development Process by Fair Division of the Spoils," *Environmental Comment*, September 1978.

Recommends techniques such as direct monetary payments to affected parties, State tax credits, and grants to local governments to ensure that real economic costs and net benefits are incorporated in facility costs.

O'Hare, Michael. "Not on My Block You Don't—Facility Siting and the Strategic Importance of Compensation," *Public Policy*, Volume 25, No. 4, Fall 1979.

Outlines characteristics shared by all noxious facilities and describes specific compensation techniques. Discussion of site selection through auction process where compensation costs are incorporated, including a detailed cost-benefit analysis of development and a quantitative method for determination of cost-effectiveness.

O'Hare, Michael, and Sanderson, Debra R. "Fair Compensation and the Boomtown Problem," *Urban Law Annual* (1977), pp. 101-133, 1977.

Early exploration of compensation techniques, primarily funneling funds from the project sponsor to the town and individuals affected either directly or via State and Federal agencies. Many existing laws and regulations providing for compensation are cited. Technique selection methods are also discussed.

Rivkin Associates. *Socioeconomic Impact Analysis for Juneau and the Matamuska-Susitna Borough*. Prepared for the Capital Site Planning Commission, February 1978.

This study presents an analysis of a proposed indemnification scheme to compensate Juneau property owners under a proposal that would shift the State capital from Juneau to Matamuska-Susitna.

Sanderson, Debra R. *Compensation in Facility Siting Conflicts, Part A: Facility Siting, Social Costs and Public Conflict*. MIT Energy Impacts Project, Document No. 11, June 1979.

Short introductory paper concerning the sources of opposition in siting energy facilities and how opposition is often related to the social costs triggered by the project. Types of compensation and problems associated with the evaluation of impacts are considered.

Sanderson, Debra R. *Rationales for Compensation in Energy Facility Siting Processes*. MIT Energy Impacts Project, Discussion Paper No. 11, July 1978.

Early discussion of the desirability of the compensation technique. Focuses on issues surrounding the use of compensation as a means of increasing equity, for dealing with social costs and demoralization costs associated with risks, and for strategic goals and economic efficiency.

Sanderson, Debra R., and O'Hare, Michael. *Predicting the Local Impacts of Energy Development. A Critical Guide to Forecasting Methods and Models*. MIT Laboratory of Architecture and Planning, prepared for the U.S. Energy Research and Development Administration, May 1977

This study offers an introduction to mathematical predictive models for the "second-order" impacts of energy development. Includes a review of models and their uses for projecting employment, population, service and public revenue, and expenditure impacts. Critiques of the salient features of 33 projection models are also presented.

Susskind, Lawrence, and O'Hare, Michael. *Managing the Social and Economic Impacts of Energy Development*. MIT Laboratory of Architecture and Planning, December 1977.

A study focusing on "boomtowns" including an introduction to the auction technique where communities bid for a facility, i.e., they indicate the price at which they are willing to accept a proposed facility. The State compensation and siting legislation of Wyoming and North Dakota are also reviewed.

Urban Systems Research & Engineering, Inc. *Buy Now, Fly Later: Land Banking for Airport Development*. Prepared for the Department of Transportation, March 1975.

This study examines the economic, political, and legal factors influencing airport expansion and thoroughly analyzes the feasibility of advance land acquisition (land banking) as a means of accommodating those factors.

COMPENSATION CASE STUDIES AND EXAMPLES

Bacow, Lawrence S., and Sanderson, Debra R. *Facility Siting and Compensation: A Handbook for Communities and Developers*. MIT Energy Laboratory Working Paper (MIT-EL-80-037WP), September 1980.

Using seven case studies involving the siting of controversial facilities, this handbook examines several hypotheses concerning the use of compensation. The book is an excellent reference for examining the limitations of compensation and for determining which types of siting decisions lend themselves to compensation arrangements.

Brownstein, Alan, and Gregor, John. "State Taxation Policies: The Problem in Siting Power Plants," *Electric Perspectives*, March 1978.

Discussion of compensation provided by utilities in the form of taxes to host communities using Pennsylvania and New Jersey as examples. A State role in allocating utility tax payments according to a formula based on projected inputs is advocated. Provides an analogous structure for hazardous waste facility compensation.

Centaur Associates *Siting of Hazardous Waste Management Facilities and Public Opposition*. Prepared for the Environmental Protection Agency, 1979.

This report includes more than 20 detailed case studies involving the siting of HWMFs and public opposition. Cases dealing with compensation techniques include Allied Chemical Case Study, SCA/Earthline (Wilsonville) Case Study, SCA/Earthline (Bordertown) Case Study, and Wes-Con, Inc. Case Study.

Easton, Eric B. "Metro Denver's Siting Ordeal," *Sludge Magazine*, July–August 1978

Describes the \$1,800 performance bond required of Metro Denver, a regional wastewater district, for potential crop damage in its geotechnical testing of sites for a proposed sludge disposal area in Adams County, Colorado.

Fredman, Ben *Medical Area Total Energy Plant*. MIT Energy Impacts Project, MIT Laboratory of Architecture and Planning, May 1979.

Description of the increasing battle over an energy facility and hospital expansion in an urban, poor neighborhood in Boston. Compensation included payment of \$1.5 million to the City of Boston in lieu of taxes plus other provisions and services for people displaced by the project.

Higgs, Karen M. *The Northeast Massachusetts Resource Recovery Facility*. MIT Energy Impacts Project, MIT Laboratory of Architecture and Planning, June 1979.

Discussion of the selection of a site and design for a regional resource recovery facility in northeastern Massachusetts. Also includes an analysis of the limited success of the compensation scheme consisting of a \$1/ton royalty to the community housing the facility and a \$500/ton royalty to a community housing a temporary landfill.

McFall, Trudy Parson. "Housing Allocation Plans Have Positive Implications for Local Housing Authorities," *Journal of Housing*, February 1978.

Describes housing allocation or "fair share" plans developed by regional/State planning agencies to identify distribution patterns for subsidized housing. Includes discussion of bonus subsidy and planning funds awarded to communities with allocation plans.

Merwin, D. J., and Greene, M. *A Framework for Monitoring Social and Economic Impacts Associated with the Construction of the Skagit Nuclear Project*. Battelle Memorial Institute, Pacific Northwest Division, September 1977.

Includes discussion of a utility-funded impact monitoring system and utility payments to Skagit County for law enforcement and education impacts through prepayment of taxes. Also discusses implementation issues including legal requirements and the calculation and distribution of compensation.

Newkumet, L. J. "Philadelphia—EPA Consent Decree: Land-based Alternatives to Ocean Dumping," *Sludge Magazine*, July–August 1979.

Discusses the creation of an "environmental trust fund" from penalties collected by EPA against sludge dumping violations by the City of Philadelphia.

Peele, E. *Internalizing Social Costs in Power Plant Sitings: Some Examples for Coal and Nuclear Plants in the United States*. Oak Ridge National Laboratory, 1976.

Describes the direct payment compensation to Wheatland, Wyoming, area counties impacted by a coal-fired power plant built by Missouri Basin Electric. Payments covered impact costs associated with construction work force and costs associated with Citizens Monitoring Committee. Legal requirements and the costs and financing of the compensation are also discussed.

Rose, Judah, and McKehnie, Deborah. *Pilgrim I and II: Siting Procedures and Public Responses*. MIT Energy Impacts Project, Document No. 12, Part C, April 1979.

This is an excellent case study that implicitly demonstrates the difficulty in using compensation to successfully combat all public opposition. While the article does not deal with compensation attempts, the opposition illustrates how difficult a local compensation scheme to overcome public opposition may be.

Sanderson, Debra R. *Compensation in Facility Siting Conflicts, Part C: Negotiated Compensation Agreements for Assessing Social Costs*. MIT Energy Impacts Project, Discussion Paper No. 11, June 1979.

An excellent short introductory piece on the progression from the identification of projected impacts to a negotiated compensation settlement. A case study of the attempt by Washington Public Power Supply System (WPPSS) to build five nuclear power plants in Washington is used, and a process is abstracted from this case and offered as an appropriate compensation negotiation model.

Swan, Raymond. "Indianapolis Project: From Lagoons to Landspreading," *Sludge Magazine*, May-June 1978.

Concerns compensation techniques for a sludge landspreading project including the operation of ground-water monitoring wells, sales of sludge fertilizer at low prices, emergency spill containment systems on sludge-hauling trucks, and the purchase of a liability insurance policy to cover potential property damage or other losses.

Wondolleck, Julia M. *The Montague Nuclear Power Plant: Negotiation, Information and Intervention*. MIT Energy Impacts Project, Document No. 12, Part B, April 1979.

Short paper detailing the history of the proposed Montague Nuclear Power Plant discussing the utility's failure to consider or to use compensation techniques. Also describes the concept of a "mitigation council" to determine compensation liability when impacts occur rather than at the time of facility planning/construction.

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