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THE TWO-HEADED DRAGON OF SITING AND CLEANING UP HAZARDOUS WASTE DUMPS: CAN ECONOMIC INCENTIVES OR MEDIATION SLAY THE MONSTER?

Bradford C. Mank*

I. INTRODUCTION

America faces a serious hazardous waste crisis. First, cleanups of abandoned sites have proceeded at a slow pace, especially where the United States Environmental Protection Agency (EPA) is in charge of the cleanup project. Second, it has become difficult to site new waste disposal facilities because of "Not-In-My-Back-Yard" (NIMBY) opposition, which persists despite state statutes designed to preempt local land use bans. Third, because many existing in-
dustrial and commercial sites have expensive contamination problems, developers frequently exploit virgin land, a misguided practice in light of the finite amount of irreplaceable pristine land left in the United States.4

This Article proposes that communities encourage developers to reuse or at least remediate abandoned contaminated sites by promising not to oppose the siting of a new waste disposal facility if a developer remediates a contaminated site in the community. In particular, two types of sites are suitable for remediation and reuse: so-called "orphan" sites—abandoned hazardous waste disposal sites that now bankrupt, dissolved, or unidentifiable private firms once owned6—and municipal solid waste (MSW) landfills, which many local governments may be liable for cleaning up pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).6

The EPA has a policy of encouraging private parties to remediate orphan sites, but the policy does not go far enough.7 Moreover, commentators have proffered proposals to encourage private parties to remediate waste sites, but each proposal has significant flaws. For example, direct economic and tax incentives, although appealing in theory, are unlikely to find political support.8 Similarly, imposing mandatory exactions or linkage fees on developers of new hazardous waste disposal facilities to compel them to clean up old sites, while potentially effective, raises substantial problems with regard to the takings clause of the Fifth Amendment.9 Furthermore, state statutes requiring mediation and arbitration of siting disputes have failed in

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5 The issue of "orphan" liability is becoming more prominent as the EPA begins to focus on sites that were used for lengthy periods of time. See William W. Balcke, Note, Superfund Settlements: The Failed Promise of the 1986 Amendments, 74 VA. L. REV. 123, 149-51 (1988). This Article addresses orphan liability infra notes 19, 84-127 and accompanying text.


7 See infra notes 84-130 and accompanying text.

8 See infra notes 131-63 and accompanying text.

9 See infra notes 164-86 and accompanying text.
most instances to overcome NIMBY opposition to the development of new waste disposal facilities.\textsuperscript{10} Even economic incentives have failed in convincing most communities to accept these facilities, although a few localities have said yes to cash.\textsuperscript{11}

Commentators have written extensively about the problems of siting new hazardous waste disposal facilities and cleaning up old waste sites, but no one has explored the relationship between these problems.\textsuperscript{12} In particular, some commentators have maintained that the federal and state governments should employ various economic incentives to encourage the remediation of abandoned hazardous waste sites.\textsuperscript{13} Other commentators have argued that states should preempt local zoning designed to keep out waste disposal facilities, or require mediation and binding arbitration of disputes involving the siting of these facilities.\textsuperscript{14}

This Article will show that neither economic incentives nor mediation alone has been successful in addressing the issues of siting or remediation, despite good theoretical reasons for the success of both approaches. This Article advocates a two-pronged approach of using economic incentives and mediation together to attack the dilemmas of siting and remediation. A developer could offer to remediate an orphan or MSW landfill site, and thereby improve public safety, in exchange for the opportunity to build a new, less risky hazardous or solid waste disposal facility.\textsuperscript{15} In conjunction with me-

\textsuperscript{10} See Lawrence S. Bacow & James R. Milkey, Overcoming Local Opposition to Hazardous Waste Facilities: The Massachusetts Approach, 6 HARV. ENVTL. L. REV. 265, 270–74 (1982) (arguing that preemption often does not work because municipalities enact ordinances, and neighborhood groups litigate, lobby state officials, and employ civil disobedience, to discourage facilities); infra notes 187–251 and accompanying text; see also supra note 3 and accompanying text.


\textsuperscript{13} See generally Martin, supra note 12, at 7–10; Stroup, supra note 12, at 872–73.

\textsuperscript{14} See generally O’HARE, supra note 12 (discussing mediation and arbitration); Delogu, supra note 3 (discussing preemption strategies and their limitations); Tarlock, supra note 3, at 438–80 (discussing preemption strategies and their limitations).

\textsuperscript{15} The possibility of a developer of a hazardous waste disposal facility offering a state or municipality the cleanup of an abandoned waste site as compensation for the siting of the developer’s new facility is one proposal in a long list of possible compensatory measures
diation and negotiated compensation, this proposal may be able to quell public opposition to new facilities and accelerate the cleanup of orphan and MSW landfill sites.

Section II of this Article reviews CERCLA's history and structure and explores "problem" waste sites. The discussion of problem sites examines orphan sites and MSW landfill sites and considers the position of prospective purchasers of such sites. Section III analyzes three incentives for private cleanups: auctions of orphan sites, tax incentives, and impact fees. Section IV considers whether mediation and arbitration can overcome NIMBY opposition to siting new waste disposal facilities. Section V sets forth a proposal for the remediation and reuse of contaminated sites.

II. CERCLA'S PROBLEM CHILDREN

There are thousands of sites in the United States that are contaminated with hazardous waste. This estimate includes the more than 1,000 sites listed on the National Priorities List (NPL)\(^{16}\)—sites that the EPA has estimated will cost at least $30 billion to clean up.\(^{17}\) Many contaminated sites are located on prime industrial and commercial properties.\(^{18}\) The precise number of orphan sites is unknown, because the EPA must perform an extensive investigation to determine whether any solvent parties exist at a site, and the agency has not done so for many NPL sites.\(^{19}\) In December 1989, the EPA presented a report on hazardous waste siting in North Carolina. MARTIN SMITH ET AL., FINAL REPORT: COSTS AND BENEFITS TO LOCAL GOVERNMENT DUE TO PRESENCE OF A HAZARDOUS WASTE MANAGEMENT FACILITY AND RELATED COMPENSATION ISSUES 75 (1985) (report by Institute for Environmental Studies at University of North Carolina at Chapel Hill). The report did not provide any analysis of this proposal or any hint of whether it ever has been implemented. One of the authors of the report subsequently reproduced the list of compensatory measures in a book, but likewise offered no analysis regarding the connection between the siting and the remediation of orphan hazardous waste sites. RICHARD N.L. ANDREWS ET AL., HAZARDOUS MATERIALS IN NORTH CAROLINA: A GUIDE FOR DECISION-MAKERS IN LOCAL GOVERNMENT 113 (1985).

\(^{16}\) By 1989, the EPA had compiled an inventory of about 27,000 hazardous waste sites and placed 1077 of these sites on the National Priorities List (NPL). COUNCIL ON ENVIRONMENTAL QUALITY, TWENTIETH ANNUAL REPORT 162–63 (1989).


estimated that 320, or about twenty-five percent, of the 1219 proposed and final NPL sites probably involved municipalities or MSW landfills. Of the 1219 sites, 236, or about twenty percent, actually were classified as municipal landfills. According to one estimate, in the future, half of the sites on the NPL will be municipal landfills. While there are a number of differences between the typical orphan site and the typical MSW landfill site, there are two questions common to both that are worth exploring. First, to what extent can government agencies use economic incentives to encourage private parties to perform cleanups of these sites instead of using public monies? Second, can governments negotiate with developers of new facilities to remediate old MSW landfill or orphan sites?

A. CERCLA's History and Structure

In 1980, Congress passed CERCLA in response to the discovery of Love Canal and other toxic waste dumps across the nation. Because Congress enacted CERCLA hastily during the final weeks of the Carter Administration, there is little legislative history indicating how the statute's proponents intended the EPA to achieve its broad cleanup goals. CERCLA authorized the president to respond to actual or threatened releases of hazardous substances and provided $1.6 billion over five years to establish a "Superfund" for financing cleanups. It also instructed the EPA to develop a "nas-
tional priority list” of the nation’s worst hazardous waste sites.28 While Congress created the Superfund as a potential source of funds for the remediation of hazardous waste sites, the EPA has sought to finance the cleanup of the sites as much as possible through the contributions of the parties who caused the contamination, the “potentially responsible parties” (PRPs).29

Under CERCLA, PRPs are liable for contamination that occurred long before the enactment of the statute, even if they followed commonly accepted, legal disposal methods at the time of disposal.30 CERCLA did not set forth an explicit liability standard for PRPs, but courts soon established that all the PRPs at a site were jointly and severally liable for the entire cost of the cleanup, even if some had made a minimal contribution to the contamination and others were more responsible.31 A PRP held liable for the entire cost of a cleanup must bring its own contribution action against other PRPs, some of whom may be bankrupt, unidentifiable, or dissolved.32

In 1986, the Superfund Amendments and Reauthorization Act (SARA)33 made a number of important changes to CERCLA. The amendments established cleanup requirements,34 replenished the Superfund,35 formalized the EPA’s settlement policies,36 enhanced state and public participation in the site remediation process,37 and made federal facilities subject to CERCLA.38 By providing elaborate mechanisms for contribution in SARA, Congress in effect ratified

28 See 42 U.S.C. § 9605(a)(8)(B) (1988); see also Balcke, supra note 5, at 123 n.5.
35 Id. § 9611.
36 Id. § 9622.
37 See id. § 9605(a)(8)(B).
38 See id. § 9620; see also Balcke, supra note 5, at 133–34.
court decisions that read a joint and several liability standard into CERCLA: an action that suggests congressional intent to establish a joint and several liability regime.\textsuperscript{39} CERCLA was due for both reauthorization and revision in 1991, but in 1990, Congress simply reauthorized the existing statutory scheme until 1994.\textsuperscript{40}

CERCLA imposes liability for hazardous waste cleanups on four categories of PRPs.\textsuperscript{41} First, the current owners and operators\textsuperscript{42} of a "facility"\textsuperscript{43} from which there is a release or threatened release of any substance statutorily identified as hazardous may be jointly and severally liable for the release.\textsuperscript{44} Second, past owners and operators who owned or operated a facility when hazardous substances were disposed of there may be still liable under CERCLA.\textsuperscript{45} Third, hazardous substance generators who arranged for disposal of their substances at any facility in the United States may be liable for the entire cost of cleaning up that particular facility even though their


\textsuperscript{40} \textit{Cleanup Program Extended for Three Years, Tax Authority for Four Years in Budget Bill}, 21 Env't Rep. (BNA) 1243, 1243 (Nov. 2, 1990). The reauthorization was included at the last minute in the Omnibus Budget Reconciliation Act, which Congress approved on October 27, 1990. \textit{Id.} Congress reauthorized the Superfund program without change until September 30, 1994 and the Superfund itself until December 31, 1995. \textit{Id.} The new legislation funds the program at a total funding level of $5.1 billion from October 1, 1991 to September 30, 1994. \textit{Id.} One reason that congressional leaders gave for simply reauthorizing CERCLA until 1994 was that it would be impossible for Congress to reauthorize both CERCLA and RCRA in the same year. \textit{Id.}

\textsuperscript{41} 42 U.S.C. § 9607(a) (1988).

\textsuperscript{42} \textit{Id.} § 9607(a)(1). The definition of "owner or operator" also includes an owner or operator of a "vessel." \textit{Id.}

\textsuperscript{43} \textit{Id.} § 9601(9).

\textsuperscript{44} For a discussion of owner and operator liability, including relevant case law, see Smith, \textit{supra} note 29, at 824–31.

contribution was small. Finally, persons who transported hazardous substances to a facility also may be liable.

Under CERCLA, PRPs have very limited defenses. A PRP has the burden of establishing that the contamination resulted entirely from an act of God, an act of war, or an act or omission of a third party that has no contractual or other relevant relationship with the PRP. In practice, these three defenses are of no use to most PRPs. The so-called "innocent landowner" defense is available to a current owner who conducted an appropriate environmental inquiry that reasonably failed to disclose the presence of hazardous substances before the owner's purchase of the contaminated property. The PRP owner has the burden of establishing the innocent landowner defense.

To mitigate some of the harshness in holding a PRP liable for the entire cost of a cleanup where the PRP made only a minimal contribution to the contamination at a particular site, SARA authorizes and to some extent encourages the EPA to reach settlements with de minimis parties in any of the four statutory categories. The EPA has considerable discretion, however, in deciding who qualifies as a de minimis party and in dictating the terms of settlement.

SARA also authorizes the EPA to enter into "mixed funding" settlements, in which funds from both PRPs and the Superfund finance remediation at a site. The conference report accompanying

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48 42 U.S.C. § 9607(b) (1988); see also Perkins, supra note 24, at 221–22 (discussing limited nature of CERCLA defenses).

49 See Buckley, supra note 4, at 771–72; Marzulla & Kappel, supra note 24, at 707–09.


53 See Newton, supra note 52, at 743 (criticizing EPA for coercing persons with good innocent landowner defenses into accepting de minimis settlements to avoid costs of litigation).

the 1986 amendments approved the use of the Superfund to provide a portion of cleanup costs where bankrupt, unidentifiable, or dissolved PRPs had caused a substantial amount of the total contamination at the site and it would be unfair to require the remaining PRPs to pay the entire cost of the cleanup; the report emphasized, however, that the EPA should seek to shift the burdens of mixed funding to nonsettlers. The mixed funding provision does not address situations in which no viable PRPs exist to fund the cleanup of an orphan site.

In addition, there is for secured creditors a statutory exemption that excludes from the definition of “owner and operator” any person who holds a security interest in a contaminated site but never has participated in the management of that “facility.” The interpretation of what constitutes management participation, however, has created enormous controversy. As a result of this controversy, the EPA in June 1991 proposed guidelines that may provide adequate protection for lenders who seek to foreclose upon contaminated property. The secured creditor exemption affects many lenders that

57 A distinction should be made between orphan sites and orphan shares at a site where some PRPs are still solvent and may be able to pay part or all of a cleanup. Compare Outboard Marine Corp. v. Thomas, 610 F. Supp. 1234, 1238 (N.D. Ill.), rev’d, 773 F.2d 883 (7th Cir. 1985), judgment vacated, 479 U.S. 1002 (1986) (“CERCLA was designed to remedy hazardous waste sites, specifically abandoned or ‘orphan’ dump sites.”) (quoting United States v. Wade, 546 F. Supp. 785, 792 (E.D. Pa. 1982), appeal dismissed, 713 F.2d 49 (3d Cir. 1983)) with Balcke, supra note 5, at 149–51 (discussing orphan shares). The EPA applies its mixed funding policy only where orphan shares exist. Balcke, supra note 5, at 136–38.
58 See 42 U.S.C. § 9601(20)(A) (1988). The statute excludes from CERCLA liability coverage any “person, who, without participating in the management of a vessel or facility, holds indicia of ownership primarily to protect his security interest in the vessel or facility.” Id. Numerous articles have addressed the issue of lender liability under CERCLA. See, e.g., Perkins, supra note 24, at 226–47; see also infra note 59 and accompanying text. See generally Ann M. Burkhart, Lender/Owners and CERCLA: Title and Liability, 25 Harv. J. Legislation 317 (1988); Michele B. Corash & Lawrence Behrendt, Lender Liability Under CERCLA: Search for a Safe Harbor, 43 Sw. L.J. 863 (1990); Marzulla & Kappel, supra note 24.
59 National Oil and Hazardous Substances Pollution Contingency Plan; Lender Liability Under CERCLA, 56 Fed. Reg. 28,798 (1991) (to be codified at 40 C.F.R. pt. 300) (proposed June 5, 1991). In United States v. Fleet Factors, the United States Court of Appeals for the Eleventh Circuit constructed the term “management participation” to hold liable under CERCLA any secured creditor that “could affect hazardous waste decisions if it so chose.” 901 F.2d 1550, 1558 (11th Cir. 1990), cert. denied, 111 S. Ct. 752 (1991). Fleet Factors created enormous concern in the lending community, whose intense lobbying subsequently led over half the members of the United States House of Representatives to support legislation creating greater protection for lenders. See Perkins, supra note 24, at 239; Creditors Who Follow
have foreclosed upon or may have to foreclose upon contaminated properties and therefore favor a liberal policy toward exempting the prospective purchasers of such properties from CERCLA liability. The federal government itself has an interest in the EPA's policy toward these purchasers, because the Federal Deposit Insurance Corporation (FDIC) and Resolution Trust Corporation (RTC) have acquired many banks that own contaminated property. The EPA has proposed regulations that would exempt the FDIC and RTC from liability, but has failed to provide special protection for parties that subsequently buy property from these government entities.


A recent study of the financial statements of major banks raises questions about whether lenders are bearing as large a burden as they claim for the cleanup of hazardous waste sites. Amy D. Marcus & Amy Stevens, Banks' Burden in Cleanups is Questioned, Wall St. J., Apr. 11, 1991, at B5. John Byrne, senior counsel to the American Bankers Association, commented that the study did not reflect potential liability problems. Id. Many lenders will not lend money to both high-risk industries and small businesses that use real estate as collateral because of the uncertainties about the secured creditor exemption. Id.

See FDIC, Resolution Trust Corp. Seek Protection in Senate Bill Limiting Exposure Under CERCLA, 21 Env't Rep. (BNA) 533, 534 (July 27, 1990). Steven Seelig, the director of the FDIC's Division of Liquidation, estimated that the FDIC owned 270 contaminated assets with a total book value of $365 million, and that the cost of cleaning up these properties could exceed $1 billion. Id. The RTC is so concerned that CERCLA liability may discourage private sector entities from managing RTC properties that it has added indemnity provisions to its contracts; the provisions give extra protection to private sector managers, although the managers still would be liable if they were grossly negligent. See RTC Adds CERCLA Indemnity Provisions to Standard Asset Management Agreement, 21 Env't Rep. (BNA) 1806, 1806 (Feb. 8, 1991).

The FDIC and RTC support legislation to give additional protection to lenders. See Perkins, supra note 24, at 212. The lender liability rule that the EPA proposed on June 5, 1991, however, does not address providing protections to prospective purchasers who buy property from the FDIC, RTC, or other security holders. See Phillips, supra note 59, at 1159, 1162.
B. Problem Sites

1. Orphan Sites

The problem of “orphan” liability is looming large as the EPA begins to focus its enforcement efforts on sites that were used as waste disposal facilities for extended periods of time. The primary cause of this serious problem is the number of hazardous waste facilities that have declared or are likely to declare bankruptcy. Approximately seventy-four waste facilities had filed for bankruptcy as of August 1985, and many more were expected to follow. The EPA currently estimates that between twenty-five and thirty percent of the companies owning land disposal facilities will petition for bankruptcy over the next fifty years. Bankrupt companies often lack sufficient insurance or financial assets to pay for the typical multimillion-dollar Superfund cleanup.

2. MSW Landfill Sites

Municipalities can be potentially liable under CERCLA. The EPA, however, has treated municipalities differently from private parties. In fact, in December 1989, the agency issued a policy statement aimed specifically at municipalities, the “Interim Policy on CERCLA Settlements Involving Municipalities or Municipal Wastes.” The Policy exempts municipal waste generators that dispose of their wastes at privately owned mixed-use disposal sites—sites that accept both MSW and hazardous waste—from liability under CERCLA when the municipality’s waste “is believed to come from households, regardless of whether household hazardous waste

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63 See Balcke, supra note 5, at 149–51.
66 Cosetti & Friedman, supra note 64, at 68; Comment, supra note 64, at 78.
67 See Superfund Program; Interim Municipal Settlement Policy, 54 Fed. Reg. 51,071, 51,074 (1989); Washington, supra note 6, at 811–12. A state or local government is not liable if it merely acquires a site through bankruptcy, tax delinquency, or abandonment and has not caused a release or threatened release on the property. 42 U.S.C. § 9601(20)(D) (1988).
may be present."69 In other words, the EPA is not going to sue a municipality because a citizen throws a can of roach or rodent killer into the garbage.

As a matter of policy, the EPA will name a municipal generator as a PRP only if there is site-specific evidence that the MSW from the municipality contains hazardous substances from a commercial, institutional, or industrial process or activity; or if there is an insignificant total volume of commercial, institutional, and industrial waste from private contributors relative to the volume of household-derived waste that the municipality contributed.70 The agency's voluntary policy of limiting its own CERCLA actions against municipalities except in specific circumstances does not change the fact that the statute treats municipalities the same as any PRP. A private party PRP can bring a contribution action against a municipality under CERCLA regardless of whether the municipality is a generator or a MSW landfill owner/operator.71 In addition, in contrast to municipal generators, MSW landfill owner/operators are still "potentially liable just like private parties."72

There has been considerable controversy about the extent to which municipalities should be liable for the cleanup of household hazardous waste that they collect from their residents. Home pesticides, cleaning agents, and other commonly used household toxics comprise between 0.1% and 0.4% of the MSW waste stream.73 Some industrial PRPs have argued in favor of the so-called "Delta Theory," which proposes assessing liability on a volumetric basis.74 These PRPs maintain that, because industrial waste at mixed-use sites inevitably contaminates ordinary household waste, they should not be responsible for household waste that has been commingled with industrial

69 Id. at 51,072 (emphasis added); see also Washington, supra note 6, at 812.  
70 Superfund Program; Interim Municipal Settlement Policy, 54 Fed. Reg. 51,071, 51,072 (1989); see also Washington, supra note 6, at 812.  
71 See Superfund Program; Interim Municipal Settlement Policy, 54 Fed. Reg. 51,071, 51,073–75 (1989); see also B.F. Goodrich Co. v. Murtha, 754 F. Supp. 960, 974 (D. Conn. 1991) (denying motion for summary judgment by several municipal generators because they were potentially liable under CERCLA).  
73 Compare B.F. Goodrich, 754 F. Supp. at 972 (expert testimony estimated that 0.3% to 0.4% of MSW is hazardous substances) with Ferrey, supra note 6, at 210 (hazardous waste may constitute less than 0.1% of waste stream).  
waste, and municipalities should bear a larger portion of cleanup expenses.\textsuperscript{75}

A growing number of landfills, especially in the eastern United States, are scheduled to close within the next few years, and there is widespread agreement that United States citizens must reduce the amount of waste they produce.\textsuperscript{76} Municipalities are only beginning to address this problem.\textsuperscript{77} Currently, the United States landfills seventy-six percent of its waste, incinerates thirteen percent, and recycles only eleven percent.\textsuperscript{78} In 1988, the EPA set a national goal of twenty-five percent source reduction and recycling by 1992,\textsuperscript{79} but there has been disagreement about the extent to which recycling, composting, and other source reduction methods can achieve or surpass this goal.\textsuperscript{80} Some commentators have argued that households must bear the cost of disposing of wastes in order to encourage individuals to conserve resources, and have proposed volume or toxicity taxes on household garbage.\textsuperscript{81}

Even if source reduction methods reduce the future flow of MSW, however, many municipalities still may bear significant liability for old MSW dumps.\textsuperscript{82} The threat of CERCLA liability may increase dramatically the cost of operating MSW landfills, which likely still

\textsuperscript{75} See Steinzor, supra note 6, at 123-26 (criticizing “Delta Theory”).

\textsuperscript{76} See Washington, supra note 6, at 808; see also infra note 186 and accompanying text.

\textsuperscript{77} See Washington, supra note 6, at 808; see also infra note 186 and accompanying text.


\textsuperscript{79} Id. at 655.

\textsuperscript{80} See, e.g., Institute for Local Self-Reliance, Beyond 40 Percent: Record-Setting Recycling and Composting Programs 57 (1990) (arguing that recycling and composting can exceed EPA’s 25% goal); The Environmental Crisis: Opposing Viewpoints 107-86 (John S. Bach & Lynn Hall eds., 1986).

\textsuperscript{81} See, e.g., Menell, supra note 78, at 687-95 (comparing curbside charges with other solutions). One commentator advocates volume- and toxicity-based taxes. Washington, supra note 6, at 823. According to this commentator, a municipality easily could measure volume by the number of cans or bins designated for collection. Id. A toxicity tax might involve higher transaction costs and raise privacy concerns because it would require inspections of individuals’ garbage cans. Id. at 823 n.133. Government searches of wastes set out for collection would not violate the Fourth Amendment, California v. Greenwood, 486 U.S. 35, 40 (1988), but could violate state constitutional provisions in two states. See State v. Tanaka, 701 P.2d 1274, 1277 (Haw. 1985) (Hawaii Constitution requires warrant for garbage searches); State v. Hempele, 576 A.2d 793, 814 (N.J. 1990) (New Jersey Constitution requires warrant for garbage left on curb). Hempele’s holding suggests that an administrative search warrant, as discussed in Camara v. Municipal Court, 387 U.S. 523 (1967), might be sufficient for these searches. Hempele, 576 A.2d at 813; Washington, supra note 6, at 823 n.133.

\textsuperscript{82} See Steinzor, supra note 6, at 102-31 (municipalities face potentially large CERCLA liabilities).
will be necessary even if current source reduction efforts are successful.  

C. Prospective Purchasers of Contaminated Sites

In 1989, in response to numerous requests from private parties interested in purchasing contaminated property, the EPA issued a Policy Statement regarding the status of prospective purchasers of contaminated property under CERCLA. The Policy Statement made it clear that the EPA would not consider providing protection from CERCLA liability to private parties that were engaged in real estate transactions involving contaminated property unless the agency thereby could avoid the expenditure of Superfund monies to clean up the property in question. The EPA recognized that it would benefit if it could shift the cost of cleaning up an orphan site to a private party that would be interested in developing the contaminated property after restoring it for reuse. The agency therefore announced in the Policy Statement that a prospective purchaser could participate in such a cleanup either by performing a substantial response action itself or by paying the EPA a substantial sum toward the cleanup.

The EPA voiced certain reservations in the Policy Statement about providing protection from CERCLA liability to prospective purchasers of contaminated property. Among the reasons for the agency’s cautiousness was its concern that other factors might outweigh any benefit that the government would receive in avoiding the expenditure of monies from the Superfund. Because the EPA has not conducted a remedial investigation/feasibility study (RI/FS) or a PRP search at most NPL sites, it lacks important information about the parties that may be responsible for the contamination at a site, the extent of the contamination, and the appropriate remedy. Thus, the Policy Statement warned that, in many cases, the EPA would not know whether a prospective purchaser safely could de-

83 See Washington, supra note 6, at 817–24 (arguing that municipalities should bear cost of remediating MSW landfills even though taxpayers may have to pay significant amounts and CERCLA liability may discourage municipalities from collecting garbage).
85 Id. at 34,241–42.
86 Id.
87 Id. at 34,241.
88 Id. at 34,242–43.
velop a property without interfering with the agency's cleanup plan.89

While the Policy Statement raised legitimate concerns, there are solutions to some of the potential problems it foresaw. For example, if the EPA lacks information about a particular site, a prospective purchaser could perform the RI/FS instead of waiting for the EPA to do it. There is evidence that private parties perform RI/FSs and other remedial work more quickly and cheaply than the agency90—a significant fact given that the average RI/FS currently takes twenty-five months, and the entire cleanup process can last as long as five years.91 SARA allows partial settlements under which a PRP may conduct a RI/FS without any agreement beforehand regarding which parties shall perform the remainder of the cleanup.92 Prospective purchasers should have the same opportunity as PRPs to perform RI/FSs if they desire to do so.

The Policy Statement also noted that the EPA may not know whether any financially solvent PRPs exist at a site, and therefore may not know whether the site is an orphan requiring the government to spend Superfund monies.93 In preparing a RI/FS, a prospective purchaser could assist the agency in determining whether PRPs exist that are financially capable of paying for a significant portion of the cleanup at the particular site that the purchaser wants.

89 Id. at 34,241.
90 Id. at 134–35. A 1990 study found that “costs at sites where the federal government paid for the work jumped an average of 75 percent from the time planners decided how a site should be cleaned up to the actual completion of the work. In sharp contrast, costs for private sector cleanups increased an average of 15 percent.” Cost of Waste Cleanups Underestimated, Especially if Federally Funded, Study Finds, 21 Env't Rep. (BNA) 1485, 1485 (Nov. 30, 1990). The author of the study, Brett R. Schroeder of Independent Project Analysis in Reston, Virginia, concluded that private industry is more efficient because of its motive of profit maximization. Id. at 1486.

It is interesting to note that several business groups have sued the EPA over its decision to prohibit private firms from conducting RI/FSs. Wade Lambert & Ellen J. Pollock, Former Ashland Oil Chairman Gets 2 Years' Probation, WALL ST. J., Dec. 3, 1990, at B8. The groups contend that government RI/FSs would be more expensive, and cite a recent Senate Budget Committee report showing that government contractors at Superfund sites spend from two to five times as much as private companies for the same work. Id. On the other hand, the EPA contends that privately conducted RI/FSs are frequently biased. Id.

91 See Balcke, supra note 5, at 128.
92 Id. at 138–40. The EPA, however, has proposed to bar PRPs from performing risk assessments at Superfund sites in order to prevent the possibility of biased assessments. Public Comment, Risk Assessment Policy Review Key to Settlement Between EPA and Industry Groups, 22 Env't Rep. (BNA) 1931, 1931 (Dec. 6, 1991).
to buy. For example, the prospective purchaser could hire an environmental consulting firm to identify and locate PRPs rather than relying on the EPA to perform these investigative tasks.

The EPA was deeply concerned about the safety risks inherent in allowing a prospective purchaser to develop or utilize contaminated land. It implied in the Policy Statement that there is always a possibility that the development or use of a former waste disposal site may result in a release of hazardous substances. In 1989, however, the agency published a study showing that the environmental and human health risks from CERCLA sites are relatively low; according to the study, statutory mandates and public opinion have forced the government to treat these sites as a high priority compared to the more substantial dangers that radon, indoor pollution, and pesticide residues pose.

It is noteworthy that the EPA in four cases has allowed a prospective purchaser to develop a contaminated orphan site based on an agency determination that the safety risks were acceptable. Furthermore, there actually may be a benefit in terms of safety if a prospective purchaser can perform a RI/FS and cleanup faster than the EPA. The greatest problem with the Superfund program has been the slow pace at which the EPA has conducted cleanups, even at sites on the NPL. Of course, the EPA should review carefully

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94 Id.
95 See id. According to the Policy Statement, . . . the listing of any site on the NPL means that there is a release or threatened release of hazardous substances from the site. Development and commercial use of such sites may pose a danger to those persons present at such sites, and the activities to be carried out by the purchaser, even with the exercise of due care, may aggravate or contribute to the contamination.
97 See Cleanup Funds Wasted on 'Transaction Costs,' CERCLA Needs Complete Overhaul, ABA Panel Says, 21 Env't Rep. (BNA) 759, 759 (Aug. 10, 1990). J. Kent Holland, an attorney from Virginia, told the audience at the American Bar Association's 1990 meeting that the Superfund program was a failure because only 27 sites out of 1800 on the NPL had been cleaned up. Id. EPA Administrator William K. Reilly has acknowledged that the program must move at a faster pace, but EPA Assistant Administrator for Enforcement James Strock defended the low number of cleanups on the grounds that SARA requires a five-year review period for site remedies before the EPA can remove a site from the NPL. Id. Strock stated that 400 Superfund sites are in the midst of long-term cleanups and an additional 200 sites
any plans for developing a contaminated site, to ensure adequate safety. The agency also should impose stringent financial responsibility requirements to guarantee that a prospective purchaser can pay for remediation if an accidental release of hazardous substances occurs.99

The Policy Statement regarding prospective purchasers of contaminated property establishes an elaborate approval process that may deter most of these potential purchasers.100 Any purchase agreement must satisfy the regional administrator in the particular EPA region where the site is located, the agency’s Assistant Administrators for Enforcement and Compliance Monitoring and for Solid Waste and Emergency Response in Washington, D.C., and the United States Attorney General.101 Perhaps a more serious obstacle for prospective purchasers is the Policy Statement’s failure to define clearly the conditions with which a prospective purchaser must comply to obtain approval. A modified approval process could protect the public while producing more timely decisions. For example, a regional administrator could have the conditional authority to grant a covenant not are undergoing short-term removal actions. Id. He added that, in 1989, there were 218 CERCLA settlements with an estimated value of more than $1 billion. Id. The EPA’s inspector general, however, has charged that the agency misled Congress in 1989 by claiming that it had started 178 cleanups when it truly had begun work at only 150 sites; SARA required the EPA to initiate 175 cleanups by October 17, 1989. EPA Overstated 1989 Site Cleanup Count, Misled Congress, Inspector General Finds, 22 Env’t Rep. (BNA) 220, 220–21 (May 24, 1991).

On October 3, 1991, United States Senator Frank Lautenberg harshly criticized the EPA’s implementation of the Superfund program and charged that it still took the agency about 10 years to clean up a contaminated site, despite the agency’s promise in 1989 that it would speed up cleanups. Frank Lautenberg, Dingell Blast Superfund Studies; Reilly Focuses on Accomplishments of Program, 22 Env’t Rep. (BNA) 1531, 1531 (Oct. 11, 1991). Reilly again defended the EPA’s handling of the Superfund program, but pledged to accelerate cleanups. Id.

99 CERCLA already imposes financial responsibility requirements. 42 U.S.C. § 9608(a)–(b) (1988). For a thorough discussion and criticism of the financial responsibility requirements that RCRA imposes on hazardous waste treatment, storage, and disposal facilities, see Black, supra note 66, at 581–620. Congress probably should increase the financial responsibility requirements for all entities involved with hazardous waste, not just for prospective purchasers. On July 1, 1991, however, the EPA proposed to amend its RCRA financial assurance requirements to give large, financially sound institutions more flexibility in meeting the agency’s financial test criteria. 56 Fed. Reg. 30,201 (1991); see also Financial Test Criteria for Facilities Would Be Amended Under EPA Proposed Rule, 22 Env’t Rep. (BNA) 555, 555 (July 5, 1991). Whether this proposed rule is good policy is beyond the scope of this Article.

100 Superfund Program; De Minimis Landowner Settlements, Prospective Purchaser Settlements, 54 Fed. Reg. 34,235, 34,243 (1989); see also Corash & Behrendt, supra note 58, at 883 (criticizing approval process on ground that time required is impractical for most real estate transactions).

to sue to a prospective purchaser with the proviso that such an agreement must be published in the Federal Register, must be subject to public comment, and may be vetoed within a limited period by either a higher-ranking EPA official or by the United States Department of Justice.

The Policy Statement also may discourage many prospective purchasers because it does not permit a prospective purchaser to assign a covenant not to sue to a subsequent purchaser and therefore, as a practical matter, restricts the alienability of the property. Recently, however, the EPA for the first time signed an agreement with a prospective purchaser to limit the potential cleanup liability of a foreclosing bank and any subsequent purchasers. In May 1991, the agency signed an agreement with Seafirst Bank, which was about to foreclose on property linked to a Superfund site in Tacoma, Washington. In the agreement, the EPA released the bank from future CERCLA liability for contamination that other parties had caused, in exchange for the bank’s promise to clean up the foreclosed property and contribute $350,000 to clean up the Superfund site. The agreement protects all parties in the chain of title from the bank provided that there is proper notice to the EPA. Its restrictions and obligations “run with the land” and are binding on anyone acquiring an interest in the property. The agreement does not provide a release from liability, however, for natural resource damages or for any releases the bank causes.

The EPA has provided a covenant not to sue to a prospective purchaser of contaminated property on three other occasions, twice to purchasers of bankrupt chemical companies. In both of these cases, the purchaser agreed to remediate extensive contamination that otherwise would have required multimillion-dollar expenditures from the Superfund.

102 The Policy Statement, in its “Reservation of Rights” section, states that “[t]he Agreement should expressly reserve the Agency’s rights to assert all claims against the prospective purchaser except for those set forth in the covenant not to sue.” Id. at 34,242; see also Corash & Behrendt, supra note 58, at 884 (discussing negative impact of provision on alienability of property and stating that some EPA staff members have suggested to authors that EPA would sue subsequent purchasers for pre-prospective purchaser environmental conditions).


104 Id.
105 Id.
106 Id.
107 Id.
108 Id.
In 1987, before the EPA issued the Policy Statement on prospective purchasers, the agency and the state of Michigan entered into a covenant with Phthalchem, Inc. in which the company was allowed to operate a chemical plant in exchange for paying a bankruptcy trustee $15 million toward remediation of the plant site. Bofors Nobel, Inc. (BNI) formerly had operated the chemical company. In September 1981, BNI and Michigan had entered into a consent decree in which BNI agreed to remediate contamination on and off the site at an estimated cost of between $12 million and $15 million. BNI established Environmental Systems Corporation of Michigan (ESCM) to own and operate a biological carbon treatment system to remediate the site. In 1985, BNI and ESCM filed for protection under Chapter 11 of the Bankruptcy Code; their decision to file for bankruptcy was in part the result of their environmental liabilities. During the reorganization proceedings, BNI and ESCM entered into an agreement to sell a substantial portion of their assets to Phthalchem; however, the agreement conditioned the sale upon BNI and ESCM obtaining a covenant not to sue for Phthalchem from the EPA and Michigan. The agreement between BNI and Phthalchem structured the sale so that BNI would retain title to the most heavily contaminated portion of the real property, which contained sludge lagoons and landfill areas, and transfer to Phthalchem title to that portion of the property upon which the actual manufacturing operations took place.

The EPA and Michigan agreed to approve the complicated arrangements in the agreement and granted a covenant not to sue to Phthalchem because, with the cash generated from the sale, BNI and ESCM were able to pay $15 million for cleanup activities as part of the distribution of estate assets. Under the terms of the covenant, the EPA and Michigan had the right to enter the Phthalchem property at any time to conduct cleanup actions, and there was no

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110 Id. at 10.
111 Id.
112 Id.
113 Id.
114 Id. at 10–11.
115 Id. at 11.
116 Id.
protection for the company if any cleanup work interrupted its business operations.117

In a third instance of the EPA providing a covenant not to sue to a prospective purchaser of contaminated property, the agency in 1990 signed a covenant that approved the purchase by a Swedish firm, Boliden AG, of the bankrupt Tennessee Chemical Company (TCC).118 In the covenant, the EPA released Boliden from liability for any contamination that occurred at the TCC site in Copperhill, Tennessee, before Boliden began operating the chemical plant there in March 1990.119 In return, Boliden paid the agency $180,000 for past response costs and agreed to spend over $8 million on environmental improvements that included reforesting the site, upgrading the plant’s wastewater treatment system, and cleaning up contaminated soil.120 In September 1990, a federal bankruptcy court approved the agreement between Boliden and the EPA.121

Another covenant involved the unusual circumstances surrounding the construction of a federally funded ski project within the boundaries of a Superfund site in Idaho.122 The city of Kellogg, Idaho, had obtained a $6.4-million appropriation from the federal government to finance the construction of forty-five per cent of a gondola transportation system connected with the Silverhorn ski area, which the city owned and operated.123 The site of the proposed gondola system was within the boundaries of the Bunker Hill Superfund site, an area covering several square miles and involving several responsible parties.124 The city and other participants entered into a covenant with the EPA that allowed the completion of the gondola system in

117 Id. at 12-13.
118 Tennessee Chemical Company Site Agreement and Covenant Not to Sue, 55 Fed. Reg. 52,887, 52,887 (1990). Earlier, the EPA had taken the interesting step of granting a limited covenant not to sue to enable the Swedish firm to operate the chemical plant for four to six months so that the company could evaluate the plant before making a purchase. See Swedish Firm Released From Responsibility for Past Problems at Tennessee CERCLA Site, 20 Env't Rep. (BNA) 1944, 1944 (Apr. 6, 1990).
120 Id.
122 See Corash & Behrendt, supra note 58, at 883 n.151 (discussing Agreement and Covenant Not to Sue: Kellogg Gondola Project Located Within the Bunker Hill Superfund Site, U.S. E.P.A. Region 10, No. 1089-07-01-122); Motiuk & Sheridan, supra note 109, at 14-15.
123 See Corash & Behrendt, supra note 58, at 883 n.151.
124 Id.
exchange for the grading and encapsulating of contaminated soil at the site.\textsuperscript{125} The EPA did not comply with the strict procedures set forth in its Policy Statement regarding prospective purchasers in approving this covenant, because at the time the parties signed the covenant, the RI/FS for the Bunker Hill Superfund site was only partially complete. This agreement reveals that the agency is willing to be flexible in the application of its own rules in order to expedite the completion of a federally favored project.\textsuperscript{126}

Such individual agreements to protect subsequent purchasers are helpful. It would be more useful, however, for the EPA to establish as a matter of policy that a subsequent purchaser who meets the same safety and financial responsibility standards as the original prospective purchaser may obtain a covenant not to sue, unless the EPA can demonstrate a substantial reason for not providing one.\textsuperscript{127}

### III. Incentives for Private Cleanups

This Article now examines some proposals for using economic incentives to encourage prospective purchasers to remediate orphan sites, and suggests alternative approaches. It first is necessary to ask why it is desirable to encourage private cleanups of orphan sites rather than simply have the EPA conduct the cleanup of each site and sell the remediated property.

A brief discussion of the EPA's strengths and weaknesses provides a foundation for understanding the advantages of using economic incentives to supplement the agency's functions. In general, the EPA is a regulatory agency, not a public works agency, and does not have the proper staffing to perform cleanups. The agency has recognized that its inadequate staffing constrains its ability even to oversee cleanups.\textsuperscript{128} Furthermore, there is evidence that the EPA is less

\textsuperscript{125} See id.
\textsuperscript{126} See Motiuk & Sheridan, supra note 109, at 15.
\textsuperscript{127} The Policy Statement does not constitute rulemaking by the EPA, and accordingly the agency can treat a subsequent purchaser differently from the original prospective purchaser. See Superfund Program; De Minimis Landowner Settlements, Prospective Purchaser Settlements, 54 Fed. Reg. 34,235, 34,243 (1989). The EPA should promulgate the Policy Statement as a formal rule, so prospective purchasers can have confidence that they will be able to sell a site to a responsible buyer.
efficient than the private sector.\textsuperscript{129} The agency suffers from high staff turnover, poor communication among its personnel, and the detrimental effects of intragovernmental rivalries.\textsuperscript{130} While it would be possible to solve some of the EPA's problems, one can make a strong case for allowing the private sector, whenever possible, to perform cleanups at orphan sites. Moreover, many of the arguments about orphan sites apply equally well to municipalities that may be liable for remediating an MSW landfill site. If the EPA is in a poor position to conduct cleanups, one can imagine that many municipalities are similarly ill-equipped to perform remedial actions.

A. Auctioning Orphan Sites

Richard Stroup, an economics professor at Montana State University, has suggested that the federal government use Superfund monies to pay a prospective purchaser to accept ownership of an orphan waste site that has a negative value.\textsuperscript{131} To accomplish this end, he has proposed an innovative bidding system that involves auctioning orphan waste sites to those private parties that can undertake a cleanup at a lower cost than the federal government. While Stroup does not address the issue of MSW landfill liability, his scheme could be adapted to allow municipalities to auction their old landfills to EPA-approved private firms; the EPA probably would want to hold the municipality ultimately responsible for any CERCLA liability. Stroup's basic plan, however, has some serious flaws.

According to Stroup, the potential purchaser making the lowest cleanup cost bid, presumably after meeting minimum financial responsibility and safety requirements, would receive its bid amount

\textsuperscript{129} See supra notes 90–91 and accompanying text.


\textsuperscript{131} See Stroup, supra note 12, at 872. There are similarities between Stroup's auction proposal and the idea of auctioning marketable permits to emit pollution. See generally Bruce A. Ackerman & Richard B. Stewart, Reforming Environmental Law: The Democratic Case for Market Incentives, 13 COLUM. J. ENVTL. L. 171, 179–84 (1988). The 1990 Amendments to the Clean Air Act have adopted a system of marketable permits to reduce emission of sulfur dioxide, a major cause of acid rain. Clean Air Act §§ 401–416 (codified at 42 U.S.C.A. §§ 7651–76510) (West Supp. 1991). Other commentators have discussed the use of market incentives to either clean up existing hazardous waste sites or reduce waste generation, but this Article focuses on Stroup's proposal because it is both simple and directly concerned with the issue of whether the private sector can clean up orphan sites at less cost than the EPA or the agency's contractors. See generally Robert W. Hahn, An Evaluation of Options for Reducing Hazardous Waste, 12 HARV. ENVTL. L. REV. 201 (1988); Clifford S. Russell, Economic Incentives in the Management of Hazardous Wastes, 13 COLUM. J. ENVTL. L. 257 (1988).
from the EPA when the agency transfers title to the orphan site to the bidder. The new owner would be free to act as it wished, but would be liable for any damages or threat of imminent danger that it caused. Stroup fails to consider that it may be difficult to distinguish between present releases caused solely by past contamination and present releases of past contamination caused by the purchaser's activities or present releases of new hazardous waste that the purchaser brings to the site. The EPA would require the new owner to post a bond as a guarantee that it would avoid such damage. The bond, which would remain in the EPA's possession, would be large enough to match the costs of responding to any danger that the agency had determined the site could pose. The bond's income, over and above the monies needed to ensure that it kept pace with inflation, would go to the new owner. The EPA would hold the bond either until the completion of a successful cleanup or indefinitely, if the remedy chosen was containment. All in all, according to Stroup, his proposal would create incentives for biotechnology and other firms to develop least-cost methods for cleaning up abandoned hazardous waste sites.

Highly critical of government cleanup efforts because of their inefficient use of time and money, Stroup maintains that his proposed bidding system would "supplant the [S]uperfund program." His proposal, however, ignores the reality that the EPA would have to monitor carefully the safety of any cleanup or containment plan. Stroup claims that his proposal eliminates the need for political or bureaucratic approval of decisions regarding how much funding is necessary to cleanup a contaminated site. The EPA, however, still would have to determine whether containment is a sufficient remedy at each site, whether contractors should remove contaminated materials and send them to a secure disposal facility, or whether a

132 Id. Because an orphan site has no solvent or identifiable owners, Stroup apparently assumes that the EPA or another government agency has title to the site, and that no former owner would contest title to the property.

133 Id.

134 Id.

135 Id.

136 The remediation of a hazardous waste site can involve either "in situ," or in-place, treatment or disposal, with the installment of a cap or cover and long-term continued monitoring and maintenance; or "clean closure," which requires the removal of the wastes and waste residues for disposal elsewhere. See Elizabeth U. Natter, How Clean Is Clean? Hazardous Waste/Hazardous Substance Cleanup Standards Under Kentucky Law: An Overview, 18 N. KY. L. REV. 295, 296 (1990) (contrasting in situ cleanup with clean closure); see also Delogu, supra note 3, at 203 n.17. CERCLA's definitional section distinguishes between
remedial plan for permanent treatment of the hazardous wastes is necessary. SARA established a preference for remedial actions that permanently reduce the volume, toxicity, or mobility of hazardous substances. Stroup's proposal therefore is inconsistent with congressional intent to the extent that it allows a purchaser to choose containment rather than treatment without a prior determination by the EPA that containment is the best approach for the purchaser's site. 137

Furthermore, Stroup's proposal itself would require the EPA, at every site, to estimate both the cost of cleanup and the risk posed by the contamination as a prerequisite for setting the amount of the bond. Stroup does not explain what would happen if the EPA later determined that the cost of remediation was far higher than first anticipated, or concluded that the initial cleanup plan was inadequate. In addition, what happens if the purchaser or the issuer of the bond files for bankruptcy? Finally, the prospect of paying firms Superfund monies without any government supervision is unacceptable in our political system, which requires regulatory agencies such as the EPA to justify its decisions to Congress, the White House, and ultimately to the American people. 138

B. Tax Incentives

Kathleen Martin, a practicing attorney in Minnesota, has proposed creating for prospective purchasers of contaminated property a cleanup tax credit that would be similar to the low-income housing credit provided in section 42 of the Internal Revenue Code (Code) and the rehabilitation tax credit provided in section 48 of the Code. 139


137 In SARA, Congress made it clear that permanent remedial solutions are preferred over other options. 42 U.S.C. § 9621 (1988). In some cases, however, the EPA has recognized that it may be too difficult and expensive to achieve permanent treatment. See infra note 256 and accompanying text.

138 This Article does not mean to imply that market incentives are inherently at odds with our democratic traditions. Bruce Ackerman and Richard Stewart have argued that markets can be designed in ways that enhance democracy. Ackerman & Stewart, supra note 131, at 171. Unlike Stroup, Ackerman and Stewart recognize that the EPA would play a significant role in setting goals for and monitoring any system such as a marketable permit system. See id. at 183–88.

Under her scheme, this credit could be based upon the costs that a private party incurs in cleaning up a site and claimed in the year of expenditure.140

A purchaser of a contaminated site would have to fulfill several conditions in order to receive a cleanup tax credit, according to Martin. The taxpayer-purchaser would have to show that it would not have cleaned up the site without the benefit of the tax credit, and that as a result of its cleanup efforts, the EPA has granted the taxpayer-purchaser a covenant not to sue: evidence that the cleanup avoided the use of Superfund monies.141 In addition, the taxpayer-purchaser would have to prove that it performed an environmental audit; that federal and state environmental authorities approved the audit; that the taxpayer-purchaser cleaned up the site according to a government-approved remedial plan; and that the amount of the claimed credit corresponds to the amount of cleanup costs incurred.142 While Martin did not address MSW liability, there is no reason that her plan could not be modified to include private parties that purchase an MSW landfill.

It is worth noting that section 42 is controversial, with critics charging that it provides more benefits to the wealthy than low-income housing.143 Moreover, tax credits are rarer than tax deductions within the Code, because credits provide a dollar-for-dollar tax savings to the taxpayer while deductions reduce the taxpayer's tax liability only according to the taxpayer's marginal tax rate. Under current law, each deductible dollar generally would provide at most a thirty-four percent savings to a corporate taxpayer and a thirty-one percent tax savings to an individual taxpayer.144 In the current fiscal climate, with huge federal budget deficits, it seems unlikely that Congress will enact tax credits for prospective purchasers.145

140 See Martin, supra note 12, at 7.
141 Id. at 7-8.
142 Id. at 8.
143 See generally Janet Stearns, Comment, The Low-Income Housing Tax Credit: A Poor Solution to the Housing Crisis, 6 YALE L. & POL'Y REV. 203 (1988); Dino Fusco, Note, The Low-Income Housing Tax Credit: An Incentive for Owners of Low-Income Housing Units to Delay the Maintenance of Their Units, 43 TAX LAW. 969 (1990).
144 Section 1 of the Code establishes a 31% marginal rate for the highest-earning individual taxpayers, and § 11 of the Code sets a 34% marginal tax rate for the highest-earning corporate taxpayers. I.R.C. §§ 1, 11 (1988). In some circumstances, the marginal rate on an individual or corporate taxpayer may be higher than these stated rates. For example, under § 151(d)(3), the Code reduces the benefit of personal exemptions for high-income individuals. Id. § 151(d)(3).
145 In April 1991, Representative Dan Rostenkowski, chairman of the House Ways and Means Committee, urged Congress to allow a dozen popular tax breaks, including the low-
In addition, in the context of hazardous waste site remediation, a full dollar-for-dollar tax credit may not be efficient, because it would provide no incentives for minimizing costs. Moreover, there is the problem of fraud—a prospective purchaser may pad its costs in order to collect a larger credit. Because of the complexities in determining the size of the credit and policing fraud, there probably would be high transaction costs associated with administering a tax credit program.

If tax credits are too generous for prospective purchasers, should their costs in buying and cleaning up contaminated property be deductible? This option raises the question of the extent to which CERCLA cleanup costs are deductible under the current Internal Revenue Code. Although there are few cases regarding the tax implications of CERCLA, the issue is becoming more important as the number of penalties and payments under the statute continues to grow.146

To answer this question, it is useful to begin by drawing an analogy between deducting expenses for waste site cleanups and deducting payments of natural resources damages to the government. CER-
CLA provides that responsible parties are potentially liable for hazardous substance releases that injure or destroy natural resources.\textsuperscript{147} It is unclear whether payments of natural resources damages are deductible under the Code.\textsuperscript{148} Code section 162(a) allows a deduction for “all the ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business,” but section 162(f) disallows any deduction for fines and penalties paid to government entities.\textsuperscript{149} According to one commentator, payments for natural resources damages under CERCLA should not be construed as nondeductible fines or penalties under section 162(f).\textsuperscript{150} She argued that the cleanup costs a business incurs differ from fines or penalties in that businesses do not pay cleanup costs to the government except to reimburse the government for its cleanup expen-

\textsuperscript{147} 42 U.S.C. § 9607(a) (1988); see also Anders, supra note 146, at 710–11.

\textsuperscript{148} See Anders, supra note 146, at 712–21.

\textsuperscript{149} I.R.C. § 162(a), (f) (1988).

\textsuperscript{150} See Anders, supra note 146, at 712–21. The commentator conceded that the analogous case law under other environmental statutes is far from clear. \textit{Id.}; see, e.g., True v. United States, 894 F.2d 1197 (10th Cir. 1990) (civil penalties under Federal Water Pollution Control Act for oil leaks are nondeductible); Colt Indus. v. United States, 880 F.2d 1311 (Fed. Cir. 1989) (fines imposed under Clean Water Act (CWA) and Clean Air Act (CAA) are nondeductible); see also Rev. Rul. 88-46, 1988-1 C.B. 76, 77 (IRS held that nonconformance penalty assessed by EPA against manufacturer of truck engines for failure to comply with CAA § 206(g)(1) was deductible under I.R.C. § 162); Evan Slavitt, \textit{An Overview of the Tax Implications of Environmental Litigation}, 20 Env't L. Rep. (Env't L. Inst.) 10,547, 10,548–52 (Dec. 1990).

A full discussion of this issue is beyond the scope of this Article, but it is worth noting that Congress might intervene if a court were to hold that payments of natural resources damages are tax-deductible. For example, public furor over reports that Exxon could deduct its costs in cleaning up the Alaska oil spill has generated several proposed bills in Congress to disallow deductions for costs connected to oil and hazardous substance cleanup. See Steele, supra note 146, at 1, 16, 24–32 (discussing S. 771, H.R. 1935, and H.R. 2060).

A congressional study determined that the originally proposed settlement of the Exxon Valdez case would cost Exxon less than half of the $1.1 billion agreed upon in criminal and civil penalties, because the company would be able to deduct the civil penalties from its income taxes; only the originally proposed $100-million criminal fine would have been nondeductible. \textit{Deductions Limit Exxon's Settlement Costs to About $500 Million, Hill Researchers Say}, 21 Env't Rep. (BNA) 2083, 2083–84 (Mar. 22, 1991). A federal judge rejected the first proposed criminal plea bargain that was the basis of the settlement on the grounds that it was too lenient. Allanna Sullivan, \textit{Federal, State Officials Look to Salvage Exxon Plea Bargain Rejected by Judge}, WALL. ST. J., Apr. 26, 1991, at A3, col. 2. Exxon since has agreed to pay an additional $25 million in criminal fines, for a total of $125 million in criminal penalties, and a federal judge has accepted the plea agreement, ending two years of litigation. See \textit{Federal Judge Accepts $1 Billion Settlement, Ends Two-Year Litigation in Exxon Oil Spill}, 22 Env't Rep. (BNA) 1533, 1533–34 (Oct. 11, 1991) (Exxon actually paid $250 million in criminal fines and restitution, but Justice Department forgave $125 million of that total); see also \textit{Exxon Agrees to Pay $1.125 Billion to Settle Litigation Over Valdez Spill}, 22 Env't Rep. (BNA) 1403, 1403–04 (Oct. 4, 1991).
Thus, section 162(f)'s bar on deductions for fines and penalties should not apply to cleanup expenses, because unlike payments of natural resources damages made under CERCLA, cleanup expenses are not “fines or penalties.”

Commentators have agreed that it is difficult to determine whether cleanup expenditures under CERCLA are deductible as ordinary and necessary business expenses under Code section 162(a) or whether they must be capitalized. To be deductible under section 162(a), a business expense must be both “ordinary” and “necessary;” however, section 263 limits the scope of section 162 by prohibiting a deduction for “[a]ny amount paid out for new buildings or for permanent improvements or betterments made to increase the value of any property or estate.” The purpose of sections 162 and 263 is to prevent taxpayers from deducting in one tax year amounts paid to acquire assets that will remain useful for more than one year. If one regards cleanup costs as improving, altering, or increasing the value of a parcel of uncontaminated property, then these costs should be capitalized; if, however, one views these expenditures as merely correcting a defect in the property—neither increasing nor improving the property’s life—or adapting the property for a different use, then they should be deductible as ordinary and necessary business expenses. Even the one commentator who has argued that cleanup expenses should be deductible has acknowledged that there is no clear line distinguishing capital expenditures from currently deductible business expenses.

Requiring a purchaser of contaminated property to capitalize its cleanup expenses rather than currently deduct them results in significant tax disadvantages for the taxpayer-purchaser. If the costs of investigation and cleanup are considered capital expenditures, the taxpayer-purchaser must add these costs to its basis in the property. Because the taxpayer-purchaser makes such expenditures to clean up land that has no measurable useful life, these monies may

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151 See Anders, supra note 146, at 721.
152 Id.
153 Compare Steele, supra note 146, at 11–12 (suggesting cleanup expenditures may have to be capitalized) with Anders, supra note 146, at 707–30 (cleanup expenditures probably can be deducted, although good case can be made for capitalization).
154 I.R.C. §§ 162(a), 263(a)(1) (1988); see also Steele, supra note 146, at 8–13 (discussing I.R.C. §§ 162 and 263); Anders, supra note 146, at 721–29 (discussing §§ 162 and 263).
155 See Anders, supra note 146, at 722.
156 Id.
157 See id. at 729.
158 See Steele, supra note 146, at 11.
not qualify for a deduction through depreciation or amortization. Instead, they may provide a tax benefit, if at all, only upon the sale of the property.\footnote{See id. House Ways and Means Committee Chairman Dan Rostenkowski has proposed to change the tax treatment of intangibles by establishing a 14-year amortization period. 'Winners and Losers' in Rosty's Intangibles Bill, 52 TAX NOTES 982, 982 (Aug. 26, 1991). It is unclear what impact this bill, H.R. 3035, would have upon cleanup deductions.}

Depending upon whether cleanup expenses are deductible or must be capitalized, the current tax system may not encourage prospective purchasers seriously to consider buying and remediating contaminated properties.\footnote{It is also worth noting that I.R.C. § 468, which provides a current deduction for the costs of reclaiming waste sites and closing mines, specifically excludes any waste site that the taxpayer disturbs after the EPA has listed the site on the NPL. I.R.C. § 468(d)(2)(B)(ii) (1988); see also Richard A. Westin & Sanford E. Gaines, The Relationship of Federal Income Taxes to Toxic Wastes: A Selective Study, 16 B.C. ENVTL. AFF. L. REV. 753, 782 (1989) ("This exclusion has the effect of barring a current deduction for response or remediation costs required under the Superfund program for NPL sites . . ."). Congress did not address, however, whether a prospective purchaser or other person who had no role in creating hazardous contamination ought to benefit from § 468.} One solution would be to allow the prospective purchaser of a contaminated site, but not any of the parties responsible for contamination, to deduct the cleanup costs it incurs in each tax year. Another possibility is to allow a prospective purchaser to rapidly amortize its cleanup costs. Section 169 of the Code allows taxpayers that own certain certified water or air pollution control facilities to amortize their costs over a period of sixty

\footnote{See Steele, supra note 146, at 11–12.}

\footnote{See supra notes 100–17 and accompanying text.}
A short amortization period would encourage prospective purchasers, because under the current tax code, there are relatively long amortization periods for most capital expenditures.\footnote{I.R.C. § 169 (1988). For example, § 169 is restricted to plants that were in operation before January 1, 1976: a policy that is counterproductive in that it does not provide an incentive to build more expensive facilities that may exceed current standards. See Westin & Gaines, supra note 159, at 767–72.}

Accordingly, a direct deduction or rapid amortization would provide greater incentives for efficiency than would a dollar-for-dollar tax credit, because prospective purchasers of contaminated property would bear part of the costs of remediation and therefore seek to minimize those costs. There is still, however, the problem of the transaction costs involved in policing by the EPA or Internal Revenue Service (IRS) against tax fraud. Moreover, the prospects of getting Congress and the president to approve either a deduction or rapid amortization proposal are slim in the near future.

\section*{C. Impact and Linkage Fees}

Martin has proposed the use of impact or linkage fees on new commercial development to fund cleanups of contaminated property.\footnote{Martin, supra note 12, at 9–10.} In essence, she proposes that a developer pay an “exaction,” or contribution, to a municipality as a condition of building its project.\footnote{See Donald L. Connors & Michael E. High, The Expanding Circle of Exactions: From Dedication to Linkage, 50 LAW & CONTEMP. PROBS. 69, 70 (1987) (defining “exaction”).} The most common and least controversial type of exaction is a municipal requirement that a developer “dedicate” land within its development for streets, sidewalks, water and sewer lines, parks, or schools.\footnote{Id. at 71.} In those circumstances in which a developer lacks land suitable for dedication, a municipality may require the developer to pay a fee in lieu of dedication, to accomplish the same purpose. A municipal ordinance could limit the use of such fees to the acquisition of a park or construction of a school that primarily, although not exclusively, will benefit the residents of the new development.\footnote{Id. at 71.}

Martin’s proposal, however, is not concerned with these two types of exactions, which courts usually uphold as reasonable exercises of the police power regarding land use regulation. She focuses on two more controversial types of exaction: “impact” fees and “linkage”...
fees. In some cases, the improvement of a municipality's capital infrastructure is necessary to accommodate the new residents of a developer's project as well as continue to serve existing residents who live beyond the boundaries of the developer's project. For example, the municipality may need to improve its water treatment or road system to accommodate problems resulting from growth in the community. If that municipality lacks sufficient revenues to fund such improvements, it may impose an impact fee on the developer in order to fund the improvements. Courts are more likely to uphold an impact fee if the municipality can establish a proportionate relationship between the amount a developer must pay and the extent to which its project increases the cost of the municipal infrastructure.

Boston and San Francisco have developed linkage fee programs that require a developer of commercial office space to construct low- and moderate-income housing on the theory that the construction of new office space generates a need for housing. Courts may question the constitutional appropriateness of linkage fees because such fees primarily accomplish social goals that are beyond a developer's direct costs. In addition, courts may balk because the imposition of these fees compels a developer to construct private facilities, whereas the first three types of exactions require the building of public facilities.

Martin proposes that municipalities impose an impact or linkage fee-type requirement on commercial developers, requiring a developer to clean up a hazardous waste site in the municipality even if the developer's project has no relationship to the site or to hazardous waste. If a community can demonstrate a link between a commercial development and the cleanup of a particular site, according to Martin, it may be appropriate for the community to impose a remedial linkage fee on the development. For example, if the development requires housing, and only contaminated property is

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168 See id. at 70–72 (contrasting land dedications and in-lieu fees, which are widely accepted, with impact and linkage fees, which are more controversial).
169 Id. at 71–72.
170 Id.
171 Id. at 72.
173 See Connors & High, supra note 165, at 72.
174 See Martin, supra note 12, at 9–10.
175 Id. at 9.
available upon which to build that needed housing, then it could be proper to require the developer to acquire and clean up the contaminated property for housing as a condition for going forward with its development. Moreover, the same linkage could apply to parks, schools, fire stations, and other public facilities if only contaminated land was available for their siting. Martin did not discuss the issue of MSW landfill liability, but her linkage strategy could be adapted to require a developer either to remediate an old MSW landfill or to build a new MSW disposal facility if the new industrial or commercial development will generate significant amounts of MSW.

Martin acknowledged that the United States Supreme Court's decision in *Nollan v. California Coastal Commission* raises questions about the required "nexus" between exactions and the public purpose. In *Nollan*, the California Coastal Commission had conditioned approval of a building permit for construction on beachfront property upon the property owner’s grant of an easement providing lateral access to the ocean. The Court concluded that there was no "essential nexus" between the exaction and the state's purpose of increasing visual access to the beach, and therefore held that the condition effected an unconstitutional taking. Martin argued that *Nollan* is more likely to affect land dedications than impact fees, but conceded that a court would scrutinize the nexus between the need for a particular development project and any exaction to pay for cleanup costs.

The problem with Martin's argument in favor of linkage and impact fees is the difficulty a municipality faces in proving that an essential nexus exists between a proposed development and the remediation of a contaminated site when the developer does not plan to use the

176 *Id.* at 9–10.

177 *Id.*


181 483 U.S. at 838–39.

182 Martin, *supra* note 12, at 10. How courts will apply the *Nollan* nexus test in the context of other types of municipal linkage and exaction fees remains uncertain, so Martin's argument is as good as any until the courts, and especially the Supreme Court, clarify this issue.
site itself for the development. It is highly possible for courts to find that Nollan—and even prior cases sanctioning exactions, for example, for low-income housing—does not support linkage between commercial development and the cleanup of a contaminated site unless the developer plans to build on the contaminated site itself, or the contaminated site is the only possible location for a needed public facility. For example, San Francisco requires developers who wish to build on the city’s eastern waterfront to perform soil tests and clean up a site, if necessary, to obtain a builder’s permit. This type of linkage is clearly appropriate to prevent the spread of contamination to other sites as the result of proposed development. While contamination of industrial and commercial property is a serious and widespread problem, however, it is unlikely that the only site in an entire municipality for low-income housing or a school would be a contaminated site.

Even if courts endorse Martin’s approach, it may not be wise from a policy standpoint, because the type of linkage fee that Martin proposes may involve high transaction costs. Developers are likely to litigate attempts at linking their projects with the cleanup of hazardous waste sites, and such litigation could be very costly to municipalities, whether they win or lose. Furthermore, Martin’s linkage scheme does not address the problem of building new hazardous and solid waste disposal facilities at a time when there is a serious shortage of places to dispose of both hazardous and solid waste. In section V, this Article argues that it makes more sense in terms of linkage to have developers of waste disposal facilities, who presumably have expertise in this area, to remediate and reuse orphan and landfill MSW sites.

This Article has examined three types of economic incentives that could involve developers in cleaning up contaminated property.

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184 See generally supra notes 164–83 and accompanying text.


Stroup's auction system, cleanup tax credits, and tax deductions for cleanup expenditures all could encourage a private party to purchase, remediate, and develop a contaminated orphan or MSW landfill site. On the other hand, Martin's exactions proposal would force developers of commercial property to assist municipalities in cleaning up contaminated sites. In section IV, this Article discusses whether mediation and arbitration techniques can facilitate good decisions regarding the siting of waste disposal facilities. While disposal facility siting and waste site cleanup are seemingly unrelated, this Article contends that a potential "host" community and a developer of a proposed waste disposal facility should negotiate over whether the developer may clean up a contaminated site in the municipality as partial compensation for the opportunity to build its facility.

IV. SITING AND NEGOTIATED COMPENSATION: EXISTING SCHEMES

In recent years, it has become increasingly difficult to site certain types of projects such as airports, prisons, highways, MSW landfills and hazardous waste disposal facilities. A phenomenon popularly known as the "NIMBY syndrome" is one of the major causes of these difficulties. After Love Canal, Times Beach, and Three Mile Island, the public generally has less confidence in the ability of scientific experts and government bureaucrats to manage technological risk. Subsequently, while there is a growing shortage of space in which to dispose of hazardous waste and MSW, fierce opposition is likely whenever someone attempts to site a new disposal facility for either type of waste.

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189 See Bacow & Milkey, supra note 10, at 265-67; Brion, supra note 187, at 451; Mary R. English, The Search for Political Authority in Massachusetts' Toxics Waste Management Law, 16 B.C. ENVTL. AFF. L. REV. 39, 41 (1988); Reilly, supra note 185, at 68-72.

190 See Bacow & Milkey, supra note 10, at 265-67; Brion, supra note 187, at 437-47; English, supra note 189, at 41 n.12 ("The Massachusetts experience is not unique; nationally, at least fifty percent of the proposals made under state hazardous waste facility siting programs have failed.") (footnote omitted).

In spite of the high demand for hazardous waste facilities, a 1984 report by the Massachusetts Hazardous Waste Facility Site Safety Council... shows that, pur...
Massachusetts is one of several states that have attempted to use alternative dispute resolution techniques—particularly negotiation over the amount of compensation owed to a community that "hosts" a waste disposal facility—to overcome NIMBY opposition to the siting of hazardous and solid waste disposal facilities.\textsuperscript{191} To date, "negotiated compensation" has had a mixed record of success.\textsuperscript{192} In many cases, it has failed to overcome public concerns about a facility's impacts on health, safety, and the environment.\textsuperscript{193} This failure suggests that developers of waste disposal facilities should address public concerns about the safety of their projects.

A developer may be able to bolster its credibility about building a safe waste disposal facility if it offers to clean up a contaminated site in the municipality where it wants to build. Given the potentially huge expense involved in restoring contaminated property, the developer also can provide a significant economic incentive by agreeing to clean up, for example, an MSW landfill site that the municipality otherwise would have to clean up. This Article proposes that developers of new hazardous and solid waste disposal facilities negotiate with municipalities to remediate an orphan or MSW landfill site in exchange for the municipality's promise of supporting the construction of the developer's proposed facility. This proposal may work where other efforts at negotiated compensation have failed if the

\begin{footnotes}
\item[192] See Brion, supra note 187, at 447--48; English, supra note 189, at 41; see also supra note 190 and accompanying text; infra notes 247--48 and accompanying text. But see infra note 249 and accompanying text.
\item[193] See Brion, supra note 187, at 447--52; English, supra note 189, at 41.
\end{footnotes}
public believes that the developer can perform the remediation more quickly and at less expense to the public purse.

A. Negotiated Compensation

Recognizing that the various approaches of other states had failed to overcome NIMBY opposition to hazardous and solid waste facilities, the Massachusetts legislature in 1980 enacted a negotiated compensation statute, the Massachusetts Hazardous Waste Facility Siting Act.194 Some states had established statewide siting boards with the power to preempt local zoning and other land use ordinances designed to bar controversial facilities.195 Experience has demonstrated, however, that preemption alone does not diffuse local opposition and in fact may intensify it.196 Local officials may put pressure on state officials to block a project even if a statewide siting board is willing to approve the proposed facility.197 Local officials and residents, through the legal process or by extralegal means, can delay a project until pursuing it becomes economically futile for its developer.198

Scholars at the Massachusetts Institute of Technology (MIT) and Harvard University created the concept of negotiated compensation and later drafted the Massachusetts statute to address what they perceived as a defect in the democratic process.199 Let us assume that the benefits of a hazardous waste disposal facility outweigh the disadvantages. These benefits, however, are spread among many

194 See O’HARE, supra note 12, at 182; Bacow & Milkey, supra note 10, at 273–74; Holznagel, supra note 188, at 354–55.

195 See, e.g., MD. NAT. RES. CODE ANN. § 3-705 (1989 & Supp. 1991); MINN. STAT. ANN. § 115A.282(2), (3) (West 1987 & Supp. 1991); OHIO REV. CODE ANN. § 3734.05(3) (Anderson 1988 & Supp. 1990); VA. CODE ANN. § 10.1-1446 (Michie 1989); WIS. STAT. ANN. §§ 144.43–.445 (West 1989); see also Bacow & Milkey, supra note 10, at 270–72 (discussing state statutes that preempt local zoning); Holznagel, supra note 188, at 348–50; Tarlock, supra note 3, at 438–48; supra note 191 and accompanying text.

196 See Bacow & Milkey, supra note 10, at 272–74; Holznagel, supra note 188, at 351–52.

197 See Bacow & Milkey, supra note 10, at 272–74; Holznagel, supra note 188, at 351–52.

198 See English, supra note 189, at 41; Holznagel, supra note 188, at 337; see also supra notes 187–90 and accompanying text.

199 See O’HARE, supra note 12, at 67–71; Bacow & Milkey, supra note 10, at 275–78; Holznagel, supra note 188, at 355–57. Michael O’Hare began his work on negotiated compensation at Massachusetts Institute of Technology (MIT), continued it at Harvard, and was working for the Commonwealth of Massachusetts when Massachusetts adopted the statute; Lawrence Bacow was a faculty member at MIT while the legislature was developing the statute, and served on the siting council that the statute created; Debra Sanderson was a graduate student at MIT who worked for the Commonwealth while the legislature drafted the statute, and thereafter continued in state service. O’HARE, supra note 12, at vii–ix.
beneficiaries, including stockholders and customers, who each have only a small stake in the benefits and who therefore are unlikely to participate actively in the political process to support the project.200 Opponents of the project are sometimes ideologically driven environmentalist groups, but more often are local citizens who believe that the project will have a detrimental effect on their health and their property values.201 It is relatively simple to organize a strong NIMBY group, because residents in one municipality can put strong social pressure on their uncommitted friends and neighbors to join the group.202 In most circumstances, a developer will be unable to organize its project’s potential beneficiaries, because the cost of organization will be high, and the developer may lack political legitimacy because of its perceived stake in the outcome.203 Thus, a few citizens may be able to raise enough political opposition to block a project that has a net social benefit. Furthermore, even if the NIMBY group loses all of its battles in the courts or the political arena, it may win in the end if the delays resulting from its activities make the project a financial loser.204

Our representative democracy is poorly equipped to resolve conflicts that involve diffuse benefits for a large number of people at the expense of great losses for a particular community.205 Negotiated compensation attempts to solve this problem. It seeks to lessen local opposition by providing compensation to people who perceive that a project may harm them.206 Proponents of negotiated compensation, however, have been too optimistic and somewhat simplistic in assuming that money alone will convince local residents to accept a potentially dangerous project. It is important to realize that safety is not usually a negotiable issue. If local citizens believe, either rightly or wrongly, that a project is not safe, they will view offers of compensation as bribery attempts and likely will reject them.207

201 See O’HARE, supra note 12, at 68–71.
202 See id.
203 See id.
204 See supra note 198 and accompanying text.
206 See O’HARE, supra note 12, at 67–71; Holznagel, supra note 188, at 355.
A developer, as well as the government officials supporting a project, must gain the trust of a substantial majority of these citizens by providing timely and accurate information about the risks associated with the project and the steps the developer is taking to reduce those risks.208

There are several types of compensation that a developer of a waste disposal facility may offer a local community.209 First, the developer can take preventative measures to avoid or reduce the likelihood that the facility will have adverse impacts on the community. For instance, the developer could install a groundwater monitoring system, double liners, and a leachate collection system to prevent any hazardous substances from escaping the facility and entering the groundwater. Second, the developer can implement measures to reverse or mitigate any adverse impacts that do occur. The developer might agree to provide money or equipment to improve fire and police response capabilities in case of an accident, or to place buffers of vacant land around the facility to protect neighbors in the event of a fire or explosion at the facility.

Third, there are numerous compensatory benefits that the developer may give to either the municipal government or affected individuals.210 The developer may provide tax benefits to the municipality or direct cash payments to individuals.211 Another relatively rare means of allaying the concerns of residents is to guarantee property values or provide insurance to do so.212 Such guarantees, however, can be very expensive, and developers are likely to place upper limits on their liability.213 A developer also may offer in-kind compensation by, for example, providing a park if its proposed facility will occupy formerly scenic land. Finally, the developer of a hazardous waste disposal facility or MSW landfill may have special technical expertise in waste site remediation and can offer to clean up an

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208 SITING HAZARDOUS WASTE MANAGEMENT FACILITIES: A HANDBOOK 11–12 (1983) [hereinafter SITING]. This handbook was a collaborative effort by the Conservation Foundation, the Chemical Manufacturers Association, and the National Audubon Society.

209 ANDREWS, supra note 15, at 112–13; O'HARE, supra note 12, at 72–73; Holznagel, supra note 188, at 356.

210 See ANDREWS, supra note 15, at 112–13; O'HARE, supra note 12, at 72–73; Holznagel, supra note 188, at 356.

211 See ANDREWS, supra note 15, at 112–13; O'HARE, supra note 12, at 72–73; Holznagel, supra note 188, at 356.

212 See O'HARE, supra note 12, at 86; SITING, supra note 208, at 17–18; see also infra note 213 and accompanying text.

213 See SITING, supra note 208, at 17–18. But see O'HARE, supra note 12, at 86 (taking more optimistic view of willingness of developers to guarantee property values).
abandoned site in exchange for permission to develop that site or another property.\textsuperscript{214}

A state can take several approaches to determining compensation. Its legislature can establish a formula such as Connecticut's limit of 2.5% of quarterly gross receipts over $2.5 million.\textsuperscript{215} There is a serious question, however, as to whether legislative formulas based on a fixed percentage of receipts are flexible enough to adapt to varying circumstances.\textsuperscript{216} In the alternative, a statewide siting board could make an administrative determination regarding the amount of compensation on a case-by-case basis; however, it is difficult for the government to set values in the absence of a free market, and there can be high transaction costs.\textsuperscript{217} Lastly, the developer and the community simply can negotiate the amount of compensation.\textsuperscript{218}

\textbf{B. Critiques of Negotiated Compensation}

Some commentators have criticized the Massachusetts negotiated compensation model on the grounds that it is coercive, does not adequately represent local citizens, and fails to address safety concerns.\textsuperscript{219} These critiques of negotiated compensation best can be understood as part of a broader attack on the use of mediation to resolve environmental disputes. Accordingly, it will be helpful to examine mediation.

Mediation is different from other forms of alternative dispute resolution, such as arbitration, because of its voluntary nature and its focus on achieving a consensus among the parties.\textsuperscript{220} A mediator tries to improve communication among the participants without pushing her own ideas on them.\textsuperscript{221} By contrast, arbitration may be compulsory, may involve a quasi-trial, and usually results in a decision by one or more neutral factfinders rather than a negotiated

\textsuperscript{214} See supra note 15 and accompanying text.
\textsuperscript{215} See CONN. GEN. STAT. ANN. § 22a-128 (West 1985 & Supp. 1990); see also Holznagel, \textit{supra} note 188, at 373–74 (discussing Connecticut formula).
\textsuperscript{216} O'HARE, \textit{supra} note 12, at 84–85.
\textsuperscript{217} See id. at 85.
\textsuperscript{218} See id. at 85–86; Holznagel, \textit{supra} note 188, at 374; Jeff Bailey, \textit{Economics of Trash}, \textit{WALL ST. J.}, Dec. 3, 1991, at A1, A9 (benefits from presence of landfills in localities vary greatly depending on localities' bargaining skills and fees).
\textsuperscript{221} See id. at 163.
settlement that the parties themselves achieve. Disputants have used mediation to resolve a wide range of disputes including various types of environmental controversies.

Massachusetts and other states adopting the negotiated compensation approach have engendered a great deal of controversy over the fact that their statutes essentially force a developer and a host community to mediate their dispute successfully. Typically, these statutes require that, if mediation fails, either a state siting board or an arbitrator—and not the concerned parties—make the final decision about siting. In addition, one leading scholar on environmental mediation, Douglas Amy, has argued that negotiated compensation is not true mediation because negotiated compensation statutes do not leave to interested parties the choice about whether to employ mediation.

At its best, mediation offers the possibility that affected citizens and other interests, together with local officials, can reach a political solution to a siting controversy rather than leave the decisionmaking process to the judiciary, an administrative bureaucracy, or an arbitrator. Mediators usually seek to include representatives from all significant interest groups, and their success in getting parties to the table may determine the likelihood of success. In 1974, several interest groups supporting the proposed construction of the Westway highway project in New York City hired an experienced mediator to help resolve difficulties in the project’s progress. They invited a wide spectrum of other interest groups to participate. The

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222 See id.
224 See AMY, supra note 207, at 216–19.
225 See id. In Connecticut and Wisconsin, the state siting board has the final decision if the host community resists negotiation, whereas in Massachusetts and Rhode Island, an independent arbitrator makes the final decision. See Holznagel, supra note 188, at 377.
226 See AMY, supra note 207, at 146–53.
228 See SITING, supra note 208, at 8–11; Daniel Riesel, Negotiation and Mediation of Environmental Disputes, 1 OHIO ST. J. ON DISP. RESOL. 99, 104–08 (1985).
229 Riesel, supra note 228, at 105.
mediation failed, however, in part because the Mayor and Governor of New York refused to join the mediation process. In the context of siting waste facilities, another important consideration is whether to include representatives from nearby communities that may suffer as a result of increased traffic, odor, or risk of harm to human health and the environment, but receive no tax benefits.

One difficult issue for parties considering mediation is whether some of the parties to a dispute should proceed with the mediation if the other parties refuse to be bound by any resulting agreement. For example, in 1976, a long dispute involving the siting of an interstate highway in Seattle, Washington, had reached an impasse, and the governor of Washington asked state transportation officials and political leaders from opposing communities in the proposed path of the highway to mediate their differences. The parties decided to mediate the dispute despite the refusal of important environmental groups to be bound by the results of the process. State and local officials eventually accepted a compromise agreement, and the environmental groups failed in their legal challenge to the project's final environmental impact statement (FEIS) at least in part because the mediated settlement was included in the FEIS.

Although mediation has been effective in resolving a variety of environmental disputes, including siting controversies, it is important to recognize that not all such disputes are amenable to mediation. There is considerable scholarly controversy over whether mediation resolves disputes more quickly and at less cost than litigation. Because each case is different, it has been impossible to make scientifically rigorous comparisons between alternative dispute resolution and traditional litigation.

See id. at 106.

See O'HARE, supra note 12, at 7; Holznagel, supra note 188, at 362 (noting that under title 990, § 8.02(1)(g) of Massachusetts Administrative Code, chief executive officer of host community can invite up to four people from abutting communities to be members of local assessment committee).


Id. at 38.

Compare Bingham, supra note 223, at 72–73 (analyzing 132 mediations, including 86 cases involving land use disputes, and arguing that mediation led to successful resolutions 78% of time) and Richard C. Collins, The Emergence of Environmental Mediation, 10 VA. ENVTL. L.J. vi–x (1990) (director of Institute for Environmental Negotiation at University of Virginia discussing program's success) with AMY, supra note 207, at 215–16 (agreeing with Gerald Cormick, leader in field of environmental mediation, who estimates that only 10% of environmental disputes are suitable for mediation).

See Joseph P. Tomain & Jo Ann Lutz, A Model for Court-Annexed Mediation, 5 OHIO
An important issue in this controversy has been the extent to which the mediation process can overcome differences among parties in monetary, technical, and informational resources. Should a mediator attempt to assure a level playing field, or should she let the balance of power among the participants decide the outcome? Critics of mediation have emphasized that the informal atmosphere of mediation may fool less sophisticated parties, such as citizen groups, and lead them to accept a less favorable resolution than they could have achieved through litigation. Conversely, these critics charge, other parties or even the mediator may coerce less capable parties into entering an unwise settlement. Moreover, for many citizen groups, individual citizens, and even municipalities, the costs of obtaining technical information or hiring an experienced negotiator may be too great, leaving most developers with a distinct advantage.

In some cases, the public process of litigation may afford greater protection not only to minority interests, but also to the majority of the public, whose individual members lack the resources of industry or government bureaucracy.

Another factor that potential parties to mediation must consider is confidentiality. Mediators almost universally recommend that discussions between a mediator and a party or among parties be confidential and therefore exempt from discovery in subsequent litigation. In 1990, Congress enacted confidentiality requirements in the

ST. J. ON DISP. RESOL. 1, 5–13 (1989) (existing scholarship is divided concerning success of alternative dispute resolution techniques). Compare Bingham, supra note 223, at xxv–xxvii (although costs of mediation are hard to compare to those of litigation, typical time to litigate environmental case in federal courts, from filing to conclusion of trial, is 23 months, while median time for environmental dispute resolution is five to six months) with Amy, supra note 227, at 221–22 (questioning whether environmental dispute resolution is cheaper and faster than litigation) and Frank P. Grad, Alternative Dispute Resolution in Environmental Law, 14 COLUM. J. ENVTL. L. 157, 185 (1989) (noting that it is not clear whether ADR provides significant savings over litigation).


See supra note 227 and accompanying text.

See Amy, supra note 207, at 143; Riesel, supra note 228, at 109–10.

See supra notes 227, 237–39 and accompanying text.

See, e.g., Lawrence R. Freedman & Michael L. Frigoff, Confidentiality in Mediation: The Need for Protection, 2 OHIO ST. J. ON DISP. RESOL. 37, 37–39 (1986); Eric D. Green, A Heretical View of Mediation Privilege, 2 OHIO ST. J. ON DISP. RESOL. 1, 1–2 (1986) (acknowledging that most mediators favor blanket confidentiality and arguing for more limited mediator’s privilege); Karen L. Liepman, Note, Confidentiality in Environmental Mediation:
Administrative Dispute Resolution Act, which governs mediation involving federal agencies. Critics charge that confidentiality laws violate the spirit of open democratic government.

Defenders of mediation and negotiated compensation argue that parties should try mediation in cases where they cannot readily come to an agreement and expensive litigation looms. They note that a citizen group always can walk away from mediation if it believes that the process is unfair. Furthermore, advocates of mediation contend that litigation is more expensive and time-consuming than mediation, and that overloaded courts do not necessarily reach better decisions or encourage more equitable settlements than mediators.

Massachusetts and the other states with statutes promoting negotiated compensation generally have failed to overcome public opposition to siting hazardous and solid waste facilities. Public fears about the safety of these facilities have been the biggest obstacle to siting, with economic and aesthetic concerns also major causes for opposition. Recently, however, some communities have been willing to accept waste disposal facilities in exchange for compensation. Some scholars have called this nascent trend the “Yes-In-My-Back-Yard” (YIMBY) syndrome. In some cases, political leaders in a municipality initially have been interested in the potential economic benefits of a proposed waste facility, but have backed out of negotiations in response to public uproar about safety concerns.

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243 See Tomain & Lutz, supra note 236, at 7 (central criticism of mediation is privatism and consequent reduction in publicity).
244 See Amy, supra note 207, at 27–28.
245 Id. at 38.
246 Id. at 18–23, 26; Amy, supra note 227, at 215–20.
247 See Brion, supra note 187, at 447–48; English, supra note 189, at 41; supra notes 190–94 and accompanying text. But see infra note 249 and accompanying text.
248 See Brion, supra note 187, at 450–51; see also supra notes 187–93, 207–08, 247 and accompanying text.
eraly, developers of hazardous and solid waste disposal facilities must do a better job of convincing the public that their projects are safe. They may be able to quell some doubts by emphasizing preventative measures, although citizen opposition may remain widespread even in light of strict safety measures.251

While economic incentives can be useful, the developer of a waste disposal facility that offers only cash compensation to a potential host community is unlikely to overcome public opposition. More often than not, developers of waste disposal facilities have failed to convince anybody that a community would be at less risk by accepting a proposed facility. A mediator can assist a developer and a community in negotiating a compensation package that includes stringent safety measures. In fact, a developer can improve a community’s health, safety, and environment by cleaning up a contaminated orphan or MSW landfill site and replacing it with a modern, secure waste disposal facility. Furthermore, if a developer cleans up an orphan or MSW landfill site, a community may reduce or eliminate a potentially large CERCLA liability.

V. REMEDIATION AND REUSE: A NEW APPLICATION FOR NEGOTIATED COMPENSATION

While negotiated compensation does not work in all cases, a developer may be able to convince a community to accept a new waste disposal facility in exchange for the developer’s conducting remedial actions at an orphan or MSW landfill site.252 Although the developer still would need to convince the community’s residents that the proposed project was safe and worthwhile, the promise to remediate a toxic dump site endangering the entire municipality is a powerful selling point. Taxpayers who are facing an enormous bill for cleaning up their town’s or county’s MSW landfill site might be willing to accept a new waste disposal facility if the facility’s developer assumed part or all of the cleanup costs for the old landfill. Furthermore, the developer could emphasize that it can perform an effective cleanup more quickly and at less expense than the municipality, the state, or the EPA, and could argue that building a new facility is more safe than continuing to operate an old one.

York negotiated for several months regarding landfill site, but town backed out as result of public opposition). 251 See Meyers, supra note 11, at 572 n.36.
252 See supra notes 15, 186 and accompanying text.
In some cases, it may be impossible to reuse a contaminated site, for instance because the site is located near an aquifer that supplies drinking water to public or private wells. A developer still could remediate the site in exchange for municipal support for siting its new facility. Whether the developer would pay the entire cost of the cleanup or part of the cost in conjunction with other parties would be left to negotiations. In addition, such negotiations could address whether the developer or the municipality would direct remediation efforts. By cleaning up old sites and creating less risky new facilities, developers and communities may be able, in the long run, to reduce NIMBY opposition and lower future CERCLA liability.

While this Article suggests that negotiated compensation may be more politically practical than some types of incentive systems, it does not mean to suggest that there is no room for economic incentives beyond those available in negotiated compensation. Stroup's proposed auction system and the concepts of tax credits, tax deductions, and exactions and linkage fees are not inherently incompatible with negotiated compensation. Under Stroup's system, a company that seeks to build a new hazardous waste disposal facility might acquire an old site at an EPA auction and then negotiate with the local government for permission to carry out its development plan. Depending upon the incentives provided in the Internal Revenue Code, either tax credits or tax deductions could encourage more developers of new facilities to acquire old sites rather than "virgin" sites. Voluntary negotiated compensation is conceptually at odds with enforced exactions and linkage fees, but large developers with choices about where to build commercial projects probably have some flexibility to negotiate over the number and type of exactions that they will accept before they turn to another city to locate the project.

There are other economic incentives that states or the federal government could provide to improve the chances for successful negotiations. For example, some states provide low-interest loans to assist recipients financially in removing and replacing leaking underground storage tanks. States or the federal government similarly could provide loans to developers who pledge to reuse or clean.

up abandoned orphan or MSW landfill sites. Of course, in these tight fiscal times, legislatures may be reluctant to provide funding for such an untested program even if this type of loan might speed up waste site cleanups in their states. There are also various types of state and local property and income tax relief that could encourage reuse or remediation, but again, any such measures depend upon convincing political leaders that the measures are necessary and beneficial to the public interest.

The most significant problem with negotiated compensation is its local focus. Groundwater pollution from an operating or abandoned waste facility may affect many communities beyond the one in which the facility is located, and once groundwater is contaminated, it may be impossible to restore its purity. As a result, some communities have established aquifer protection zones. It is questionable whether a local ordinance can solve such a regional problem. Because of the regional nature of pollution from waste disposal facilities, surrounding communities should have a greater role in negotiating compensation. The Massachusetts negotiated compensation statute permits a community that "hosts" a new facility to grant surrounding communities a role in negotiations and possibly in compensation. States enacting statutes similar to that in Massachusetts could include similar provisions, and communities in states that do not adopt such a statute could invite their neighbors to participate, perhaps in exchange for the provision of certain municipal services or some other consideration.

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254 See generally Martin, supra note 12, at 6–8.
255 See Corash & Behrendt, supra note 58, at 881 n.132 (single hazardous waste facility may contaminate entire geographic region by polluting aquifer, bay, or lake).
256 See David Stipp, Super Waste?: Throwing Good Money at Bad Water Yields Scant Improvement, WALL. ST. J., May 15, 1991, at A1, col. 1; see also supra note 255 and accompanying text. An EPA official has stated that the agency will issue a policy statement spelling out when it is "technically impractical" to remove dense nonaqueous phase liquids, which are heavier than water and tend to sink through the water table, from groundwater. Policy on Remedy Selection to Address 'Impracticable' Ground Water Cleanups, 22 Env't Rep. (BNA) 1363, 1363–64 (Sept. 27, 1991). "The contaminants include semivolatile chemicals and halogenated volatile chemicals typically found in solvents, wood preserving wastes (including creosote and pentachlorophenol), coal tars, and pesticides. They are of particular concern to the agency because they are frequently found at Superfund sites.” Id. at 1363.
258 See supra note 231 and accompanying text.
259 Achieving greater regional cooperation in negotiating with operators of new facilities and remediating hazardous waste sites may require a shift to a more regional tax base. St.
VI. Conclusion

While this Article proposes the use of negotiated compensation to encourage developers of new waste disposal facilities to reuse or at least clean up abandoned waste sites, the problems of siting and remediation are complex, and solving them will require a number of different approaches. In some cases, the EPA itself will have to conduct a cleanup of an abandoned site using Superfund monies. For many orphan sites, the uncertainties of remediation may be too great for any private developer to take the risk, regardless of the incentives. Negotiated compensation will fail in many cases, including cases in which a developer offers to reuse or clean up an abandoned site. For problems as complex as remediating the nation's scores of old waste sites and developing the many needed, less risky, new facilities, however, creative solutions are necessary.

Paul and Minneapolis, Minnesota have been part of a seven-county tax base sharing area since 1971, and other communities have discussed implementing the tax base sharing concept. See Jack L. Dustin et al., Tax Base Sharing: The Potential and Experience, in Tax Base Sharing: An Evaluation of Its Use and Its Potential in the State of Ohio 3, 6–14 (Jack L. Dustin ed., 1990). See generally Note, Minnesota's Metropolitan Fiscal Disparities Act—An Experiment in Tax Base Sharing, 59 MINN. L. REV. 927 (1975). A full discussion of what role tax base sharing might have in improving regional cooperation to solve environmental problems is beyond the scope of this Article. I wish to thank Charles Ellison and Sam Noe of the University of Cincinnati's School of Planning for alerting me to the concept of tax base sharing.