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# Public-private partnerships in the siting of hazardous waste facilities: the importance of trust

As the need for hazardous waste management facilities becomes critical, several strategies including public-private partnership have been suggested and adopted by states to diffuse public opposition, and facilitate the siting of these facilities. Public-private partnership involves state ownership of the facility, and its operation by a private company. Proponents of this strategy contend that state ownership of facility and therefore an assumption of long-term liability would reduce public concerns regarding site maintenance. Also, that state or public ownership of the land on which the facility is built would thwart any local land use regulation that may be enacted to derail the site selection process. This paper, through a case study provides an analysis of this strategy, and surmised that factors identified in past research-public trust in institutions of government, in the perceived competence and integrity of the developer, and in the waste treatment technology to pose minimal risks to public health and the environment, are necessary to enhance the efficacy of public-private partnership in the siting of hazardous waste management facilities.

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## Introduction

The hazardous waste management literature is replete with several unsuccessful facility siting attempts (Heiman 1990a; Kunreuther *et al.* 1993, New York Legislative Commission - NYLC 1987). A national survey (NYLC 1987) noted that due to public opposition, the success rate of hazardous waste facilities siting attempts embarked upon since 1980 is less than three percent. The situation seems so bleak that Heiman

(1990a) concluded that it may not be possible to locate any such facility in anybody's backyard. Notwithstanding the growing waste minimisation programs, Munton (1996a) argued that new facilities are still sorely needed as many unsafe or inadequate sites are being closed due to stringent government regulations, materials removed from contaminated sites need to be properly treated and disposed of, and explosions and fires commonly occur in storage facilities.

The need for new treatment and disposal facilities has therefore prompted states to adopt several strategies designed to diffuse public opposition. Such strategies include the use of incentives – the Massachusetts approach (Bacow & Milkey 1987), regional and multiple siting (Morell 1984), negotiation and arbitration (Bingham 1987), voluntary-siting process (Castle & Munton 1996), and public-private partnership (Munton 1996b; Rabe 1994). Under public-private partnership which Mazmanian & Morell (1994) asserted is “beginning to emerge” (p. 246), the facility would be owned by the state, and built on state-owned land while the construction and operation would be undertaken by a private developer. This cooperative public-private partnership, according to Rabe (1994), provides for direct long-term government oversight of facility operations, site development and management. This variant of privatisation is commonly used by municipalities for waste-water or sewage treatment plants, and municipal solid waste landfills. Savas (2000) noted that public-private partnership regarding Indianapolis’ waste water treatment plant resulted in substantial cost saving, higher effluent water quality, and a lower-than-national-average accident rate.

While these stated advantages are obviously relevant, Heiman (1990b) surmised that the underlying theme of state ownership of a hazardous waste facility and therefore the assumption of liability is that the strategy would reduce public concerns regarding waste disposal and site maintenance. Also, that the use of state-owned land would thwart any land use regulations that may be enacted by potential host communities to derail the site selection process. Also, Munton (1996b) noted that one of the advantages of public-private partnership is that the strategy “may have the effect of increasing public confidence that a facility will be tightly regulated and its management responsive to public concerns” page 201. The need to reduce public concern regarding long-term site maintenance, and to avoid conflict with local land use regulation regarding any selected site, prompted the state of Arizona to adopt the strategy whereby the state owns both the facility and the land on which the facility is built (Weiss 1993). The long-term site maintenance provision was reiterated in the facility contract (signed with the private developer), which stated that the state would be responsible for site maintenance 30 years after the closure of the facility (ADEQ,

1990). Heiman (1990b) emphasised the efficacy of the strategy by citing examples whereby public corporations created by state or local legislatures have been successfully used in the city of New York to build and operate large-scale public works or clear land for private redevelopment.

But how does this assumption that the strategy would assuage public concerns stand up to empirical test? Can state ownership of a hazardous waste facility in and of itself lead to successful facility siting? What are the prerequisites (if any) required to enhance the efficacy of public-private partnership in the siting of hazardous waste facilities? For answers to these and other questions, this study focuses on the Arizona hazardous waste facility siting attempt. This case study is appropriate and unique for at least two reasons; it is the first in the U.S. to progress to an advanced construction stage utilising the public-private partnership (Weiss 1993). Also, the process was moving so smoothly that Heiman (1990a) was prompted to state that “the Arizona integrated hazardous waste management facility located in the middle of the desert...with virtually no provisions for public participation in the siting process... is slowly moving toward completion” p. 360. However, a few months after, the process suddenly stalled and the project was terminated. What are the factors that are so critical as to suddenly derail an otherwise smooth process? To what extent have these factors been emphasised in the hazardous waste facility siting literature? What insights can these factors provide in elucidating the efficacy of public-private partnership in the siting of hazardous facilities?

### Sources of empirical information

As McCormick (1996) suggested, a case study research must include multiple lines of action and information in arriving at any conclusions hence this study pursues several sources of empirical evidence including interviews, transcripts of public hearings, previous citizen surveys, and existing documents. Documents provide not only factual evidence but are not subjected to the problems of poor recall and inaccurate articulation. Yin (1989) however warned that documents such as transcripts of legislative proceedings must be used with caution as the transcripts might have been edited by the legislative staff. One major source of document for this study is the

Arizona Department of Environmental Quality (ADEQ), which allowed full access to letters, memoranda, minutes of meetings, reports, previous studies, transcripts of public hearings, the draft and final Environmental Impact Statement (EIS), and newspaper clippings.

Face-to-face structured interviews were held with state legislators, current and former officials of Arizona Department of Health Services (ADHS) and ADEQ, members of environmental and public interest groups and residents of the facility site. The selected interviewees were those involved either throughout, or for the most part or at critical periods during the facility siting process. One of the interviewees, was a member of the state house environmental affairs committee in 1981/1982 and 1989/1990 legislative sessions, and member of the House natural resources and energy committee in 1983/1984, 1985/1986, 1987/1988 sessions. The representative sponsored bills requiring that 5% of the facility's gross profit be given to the school district of the host community, and that the access road to the facility be upgraded to a state highway. Another interviewee, Ms. Francesca Segretti, Mayor of the Town of Jerome is an environmental activist and Chairperson of Arizona Coalition for the Environment. Ms. Segretti gave testimony before the state legislative study committee on hazardous waste and was interviewed several times by the news media on hazardous waste and on the Arizona facility.

Manuscripts of public hearings provide valuable sources of information for ascertaining public opinions and concerns. This method of investigation is unobtrusive as the investigator does not interact directly with, and can not influence the subject. In addition, since the participants are not responding to a structured questionnaire, the investigator can not predetermine the themes. The argument that hearings are not representative of the public as in surveys (if random sampling procedures are adopted) may not be valid as Dunlap *et al.* (1993) noted that the concerns expressed at proposed nuclear waste repository hearings correlate well with those of the general public. Also, public hearings involve citizens for whom the hazardous waste facility issue is salient, and such interested citizens (who may not even live near the facility) are usually able to rouse the otherwise impassive general public, and foster the emergence of grassroots public opposition.

## An overview of Arizona's facility siting process

In 1977, the Arizona state legislature enacted an enabling statute which required an agency to establish hazardous waste programs, and select a site for a hazardous waste facility. Using technical criteria and with little public involvement, the agency selected Harquahala in Yuma county. Thereafter, the agency called a public meeting to inform the residents about the site selection decision. The opposition to the decision was immediate and intense, the contention was that it was not equitable for Yuma County to host the facility since the county accounted for less than 10% of the state's hazardous waste. The process became deadlocked, and shortly after, the state legislature criticised the agency.

During the 1980 legislative session, the state legislature enacted a Hazard Waste Facility Act which required the agency to submit a list of suitable sites to the legislators who would make the final site selection decision. As required by the Act, three hearings were held in Tucson, Phoenix and Yuma in August 1980. The hearings were attended by 368 persons while 50 gave testimonies. The subsequent report recommended the Western Harquahala as the facility site and suggested Ranegras and the Rainbow Valley as alternatives. Both Harquahala and Ranegras are in Yuma county while Rainbow Valley is in Maricopa county which accounts for approximately 90 percent of the state's hazardous waste. In addition, the report noted that the facility would have to import waste in order to be financially viable, and also recommended that the facility be owned by the state and that the operation be handled by a private company.

The motion, SB 1033 that the Rainbow Valley site, which included the community of Mobile be selected as the site for the hazardous waste facility passed in the Senate on January 27, 1981. The Act approved the purchase of the 640 acre site which is federal land from the Bureau of Land Management (BLM), a transaction that requires the preparation of an EIS. The facility design described in the EIS was for primarily "low level" technologies such as surface impoundment and land-farms thereby excluding incineration, the treatment and the disposal of PCBs and the importation of hazardous waste. The final EIS was released in July 1983 thus completing the EIS requirement, The BLM subsequently sold the land to the state for \$256,000.

In October 1982, the ADHS developed a Request for Proposal (RFP) which required a private company to "finance, design, construct, and operate a hazardous waste storage, treatment and disposal facility" and set the deadline for the submission of bids for January 14, 1983 and that late bids would be rejected (ADEQ 1990). Although the bid deadline was extended to February 23, 1983, only two bids were submitted; BKK of California and ENSCO of Arkansas. Both bids were accepted notwithstanding that ENSCO's bid, picked up in Texas by a state official came in after the deadline. ENSCO's proposal emphasised waste importation and incineration of PCBs while BKK emphasised landfilling. A 20-person team consisting of engineers, financial experts, and risk management analysts reviewed the bids, and considered that both were not acceptable. Notwithstanding, a five-person Contractor Selection Review Board which included two state officials, an employee of the local government, a representative of the Sierra Club and a resident of Mobile unanimously recommended ENSCO. The contract signed with ENSCO on January 7, 1986 stated that ENSCO will be responsible for site monitoring during the life of the facility, and for 30 years after closure. At the end of the 30-year period, the state would assume responsibility for the site, thus ensuring long-term site maintenance and any necessary site clean-up.

ENSCO subsequently had approval for two incinerators with a capacity of 70,000,000 BTU hr<sup>-1</sup>, one additional incinerator subject to market needs, and for landfill capacity of 50,000 cubic yards. Between February 4 and April 25, 1988 four facility permits were issued to ENSCO. These permits and approvals were granted by a new state environmental agency. Public involvement was particularly low during the granting of these permits. As an example, the hearing held on February 2, 1988 on the proposed Groundwater Protection and Solid Waste permits was attended by only one person (Jon 1983). In February 1990, ENSCO applied for four permits that required public hearings. A hearing was then scheduled for May 7, 1990 at Mobile. Prior to that hearing, public opposition to the facility was building up. On April 17, 1990 and for the next seven days, Greenpeace environmental activists staged protest activities at the State Capitol where they chained themselves to hospital beds. On April 20, the activists held a rally at the facility site in Mobile, and chained themselves to machinery on the site. Protesters interrupted the State Governor's Earth

Day speech on April 22. All these protest activities which were well-covered by the mass media drew attention to the facility.

Unlike previous public hearings, the May 7, 1990 hearing was attended by more than 400 persons while 71 gave testimonies. The building used for the hearing could only accommodate about half of the number of people who showed up. Deputy sheriffs were called in to eject members of the public who could not find a seat. The deputies fired stun guns at protesters and during the scuffle which followed, several people were injured and eighteen were arrested. The hearing thereby generated extensive adverse publicity for the facility. The state governor subsequently ordered an inquiry, and also requested two more public hearings.

The public hearing held in Phoenix on June 20, attracted about 3,000 people while about 1,000 attended the hearing held in Tucson the following day. Subsequently, public opposition to the facility became intensified as initiative petitions "Stop Incineration Now" (SIN), and "Citizens Against Toxic Hazards" (CATH) were launched to put the facility issue on the ballot for the then upcoming gubernatorial election. On September 28, a "Children for Environment" rally was held at the State Capitol, and another rally "No More Victims of Toxic Waste" sponsored by the Greenpeace organisation and the Citizens Clearinghouse for Hazardous Waste was held in November. At the latter rally, citizens from different parts of the country gave testimonies of death, disability and economic loss resulting from living near a hazardous waste facility. As a result of the growing opposition and the politicisation of the issue, the state legislature placed a construction moratorium on the facility. By May 3, 1991 a newly elected state governor and ENSCO entered into a Memorandum of Understanding that the facility contract be terminated and that the state will pay the company, \$44 million. Subsequently the Hazardous Waste Minimisation bill which in addition to establishing waste minimisation programs, prohibits incineration of hazardous waste, was passed.

### Factors of public opposition to the facility

The failure to site the facility due to high levels of public concerns and consequent opposition suggests that public ownership of a hazardous waste facility or of the land on

Table 1. Concerns expressed at the final permits public hearings. 1990

Concerns/issues	Percentage of statements where issue was raised
Perceived risk factors present and future generations	37.2
Lack of confidence in facility operator	19.6
Low level of trust in state agency	9.3
Low level of confidence in incineration	7.3
Low level of public involvement	7.1
Waste importation	6.9
Low waste minimisation activities	3.0
Inappropriate facility size	2.9
Low risk mitigation activities	2.4
Illegal bidding procedures	2.0
Others	2.2

which the facility is to be built may not be enough to assuage public concerns. Since the process was moving smoothly before it was suddenly derailed after the 1990 public hearings, we will turn to the analysis of the transcripts of these hearings to identify the major concerns expressed, ascertain the extent to which these concerns or issues have been identified in the literature, and finally analyse the case study to find out the extent to which these issues surfaced during the siting process, prior to the 1990 hearings.

At the 1990 public hearings conducted in Mobile on May 7, Phoenix on June 20, and in Tucson on June 21, 180 citizens including environmental activists gave testimony. As Table 1 indicates, the most frequently mentioned concerns were; perceived risk factor (37.2%), lack of public trust in the developer in managing hazardous waste facilities, (19.6%), lack of public confidence in the state agency (9.3%), lack of confidence in incineration (7.3%), and low level of public involvement in the siting process (7.1%). Other issues mentioned include; waste importation (6.9%), low waste minimisation activities (3.0%), inappropriate facility size (2.9%), low risk mitigation activities (2.4%), and illegal bidding procedures (2%).

## Risk perception

The most frequently mentioned concern at the 1990 public hearings was perceived risk. This observation is

similar to past research (Fischhoff *et al.* 1981; Kasperson 1986; Slovic *et al.* 1991) who surmised that the overarching factor of public opposition to the siting of hazardous waste facilities is the perceptions of the risks of the facility. Rather than relying on objective or "rational" measures, public assessment of the magnitude and of the acceptability of risk depend on factors such as familiarity of the risk, its catastrophic potential, whether the risk is natural or technological in origin, immediate or latent, and voluntary or involuntary (Fischhoff *et al.* 1981; Slovic 1987; Pijawka *et al.* 1991). Individuals are usually less tolerant of involuntary and technological risks, and those that have high catastrophic potential (Slovic *et al.* 1991; Slovic 1987). Incidentally, hazardous waste facilities have many of the characteristics of highly perceived risks; highly dreaded, technological in origin, and potentially catastrophic. Another factor that has been linked to risk perception is the level of public trust. Pijawka and Mushkatel, (1991) noted that lack of public trust in institutions of government and in industry magnifies public perceptions of the risk of toxic facilities.

## Public trust/confidence

Table 1 shows that the second, third and fourth-ranked public concerns were; lack of public trust in the state agency, in the facility operator and in incineration as a waste treatment technology. To what extent has public trust been identified in the literature as playing a major role in hazardous waste facility siting? What are the sources of public mistrust of the institutions of government and of hazardous waste facility developers? Apart from the testimonies at the public hearings, to what extent do these identified sources of public mistrust surface during the Arizona facility siting process? While public confidence in government and in private companies have remained consistently low since the early 1970s, Edelstein (1988) argued that the level of distrust in these institutions by victims of toxic waste exceed the general social trend. Past research, (Kasperson *et al.* 1992; Kunreuther *et al.* 1993; Morell 1984; National Workshop on Facility Siting, 1991; US EPA, 1979), many of which predated or came up during the early stages of the Arizona facility siting process, identified lack of public trust in institutions of governments to protect public health, and in the facility operator to properly and safely manage the facility, as factors

of public opposition to hazardous waste facilities. Apart from the direct effect of trust, Pijawka & Mushkatel (1991) established that public mistrust of government to protect public health heightens the public perception of the risk of hazardous facilities thereby leading to intense public opposition.

The sources of public mistrust as identified by past research (Edelstein 1988; La Porte & Metlay 1996; National Workshop on Facility Siting, 1990) include; previous negative experience with government institutions and industry, non-admission of previous mistakes, making exaggerated claims and promises, withholding vital information from the public, a supportive relationship (cliente capture) between developer and the regulatory agency, and institutional constancy. Regarding previous negative experience with ENSCO, the EPA (1979) identified the company's negative track record as one of the most critical factors of public opposition to the company's facility in Arkansas. As early as 1983, Dr. Douglas Nelson of Paloma Ranch, requested a background check on the company and its subsidiary, Pollution Control Inc. (ADHS, 1983). Pamela Swift, an environmental activist and Chairperson of Toxic Waste Investigation Group made allegations regarding ENSCO's credibility and cited the company's negative past records in operating hazardous waste facilities. Ms. Swift stated that "In 1975, ENSCO under another name in Shakopee, Minnesota was taken to court for operating hazardous waste incinerators and storing 25,000 drums of waste without permit. In 1980 and 1982 ENSCO was cited with 30 water permit violations for improperly storing waste materials, and for improper contamination of transformers (which contains PCB)" (Downey 1988, p. 4).

Within the same context, Francesca Segretti's 1989 testimony before the legislative study committee on hazardous waste contained allegations of ENSCO's negative track record; the violations of federal and state shipping regulations and clean-up responsibilities, operating equipment without the necessary permits, and improper storage of hazardous waste. Ms. Segretti stated that "Hazmat World issue of August 1988 reported that the EPA levied a \$915,000 on ENSCO for allegedly draining and flushing PCBs from transformers without a permit during 1985-1986", and that "in 1987, Mr. Michael Bates, Chief of the Department of Pollution Control and Ecology (Arkansas) told the Atlanta

Constitution that 'I (Bates) would be very surprised if we ever went down to ENSCO plant for an inspection that we didn't find some kind of violation'" (Segretti 1989, p. 3). These allegations of past negative records of ENSCO generated public mistrust of the company's credibility. An interesting observation in this study is that public mistrust of the facility developer is a more frequently mentioned concern than lack of public trust in the state agency. This observation is similar to Ibitayo and Pijawka (1999) which showed that public confidence in facility developer may be more salient than public mistrust of institutions of government in the siting of hazardous waste facilities

The agency consistently made what can be considered as exaggerated claims about the ENSCO's competence. The facility project director stated that "ENSCO is equipped to handle the highly dangerous chemicals that will be sent to the facility. We consider the company to be as reputable if not more reputable than the major industry players" (Downey 1988, p. 4). Also, an interoffice memorandum dated July 5 1983, stated that "ENSCO has been permitted in ten EPA regions to burn PCBs and other organic compounds and has demonstrated burn rate efficiencies of 99.999%" and that the company "has the experience, technical and financial capability to pursue this effort with integrity and quality". In addition, the contract administrator made what can be considered as an exaggerated claim by stating that, "We are a *zero discharge* plant which means that *we do not discharge anything into the environment*" (Downey 1988, p. 4).

Other sources of public mistrust in the state agency was the perception that it withheld vital information from the public by excluding incineration, waste importation, and the treatment and the disposal of PCBs from the issue discussed during the EIS process. The contention being that the report submitted to the state legislature in 1980 (prior to EIS process) indicated that the facility would be "high-tech" and would import hazardous waste. The facility on which the public presented their views and concerns during the EIS public hearings was therefore different from the facility that was being built. This implies that the EIS conducted in 1983 was misleading and may therefore be invalid. As noted earlier, withholding vital information from the public tends to erode public trust in institutions of government and in industry.

One of the more serious sources of public mistrust is that of “agency capture”, that is the development of a supportive relationship, real or imagined, between the developer and the regulatory agency. Regarding “agency capture”, a state employee flew to Dallas, Texas to collect ENSCO's bidding proposal even after the deadline (Waitor 1983). Other activities reflecting favourable treatment of ENSCO and sometimes bordering on illegality includes soliciting and accepting money from the company. An agreement signed in 1987 indicated that ENSCO “will advance the state agency \$16,000 for the balance of 1987 and \$6,000 a month until the company's hazardous waste incinerators were operational” (Dougherty 1992). This act (soliciting and collecting money from a regulated industry) even if done in good faith calls into question the integrity and neutrality of the agency, and a consequent erosion of public trust.

Public concern regarding incineration, the major component of the facility was evident just prior to and after the 1990 public hearings. In a testimony before a legislative committee regarding issuing hazardous waste burning permit to Phoenix Cement, Ms. Segretti stated that “Incineration is a relatively new and unproven technology, there is current information that questions the safety and wisdom of this method of disposal” (Segretti 1989, p. 1). The state residents must have agreed with Ms. Segretti's statement as a public opinion poll conducted in May 1990 indicated that 60% of the surveyed Arizona voters opposed the incineration of hazardous waste (Hall 1990).

Another factor that may influence public trust of a government agency is organisational constancy described by La Porte & Metlay (1996) as a phenomenon whereby an institution consistently, and for several years, achieves the outcomes for which it was established. Within this context, an organisation with a long history of commitment and repeatedly high performance will be able to secure public confidence. On the other hand, a newly established institution implementing a new program is less likely to obtain public confidence. Back in 1977 when a state agency was mandated to establish and manage hazardous waste programs, and select a facility site, the agency as in most states, did not have any such direct technical or managerial experience. The few hazardous waste facilities' activities that existed were initiated by the private industry and state agency roles

were limited to overseeing the safe operations of such facilities and within the existing limited hazardous waste regulations. The State of Arizona did not establish a hazardous waste management statute until 1980 and many states did not have such statutes until after 1981 (Abstract of State Hazardous Waste Facility Laws, 1981). Hence the state agencies did not have the time frame to provide evidence of capability and commitment high enough to secure and maintain public trust regarding hazardous waste management.

### Public participation/involvement

Low levels of public involvement in the facility siting process is the fifth most-often expressed concern at the 1990 public hearings. The effect of public involvement in the siting of hazardous facilities has been a subject of extensive research. Past research (Edelstein 1988; Kasperson 1986; Morell 1984; National Workshop on Facility Siting 1990) indicate that procedural equity which allows for substantive host community input into the facility siting process plays a major role in public support for, or opposition to the siting. “Decide-announce-(and)-defend” (DAD) approach whereby a facility site is decided upon by public officials who subsequently defend the decision by counteracting opposing arguments, and “token” or minimal public involvement such as public hearings or public notices with low levels of substantive public input, often generate feelings of alienation and increased public opposition.

While extensive public involvement does not guarantee public support, specific elements of public participation such as public education, provision of technical assistance, and community oversight of the facility often correlate with successful siting (Ibitayo & Pijawka 1999; NYLC 1987). Furthermore, La Porte & Metlay (1996) argued that building of public trust in private and public institutions require that these organisations involve the public before making key decisions, reach out consistently to community leaders and be accessible to citizens. Within this context, Rabe (1994), demonstrated that public involvement especially in the early stages tends to generate public trust, and a consequent higher likelihood of siting success. Also, low levels of public involvement and input into siting decisions are tantamount to subjecting the host communities



into involuntarily bearing the facility's costs or risks. As noted by Fischhoff *et al.* (1981), involuntary risks are often perceived highly by the public.

To what extent was the public involved in the facility siting process? The site selection process initiated in 1977 did not involve any segment of the public, and the purpose of the meeting held afterwards was to announce the site selection decision to the host community, a DAD phenomenon. Low levels of public involvement/inadequate pre-meeting notification was the second most mentioned concern (behind perceived risk) during the EIS public hearing in 1983. Also, the result of a survey conducted in September 1990 noted that 59% of the respondents said that they were not given sufficient information about the facility. The proponents of the facility did not seem to embark on public education program on hazardous waste or on the facility itself. The low public turn-out at the EIS public hearings and those held for the different permits (only one person showed up at one of such hearings) was probably welcomed. This viewpoint was succinctly expressed by Ms. Segretti, who stated that "They meant to keep it quiet. I wasn't even aware of the facility. I went before the legislature to give testimony against issuing a hazardous waste burning permit to Phoenix Cement. Then, Pam, (Pamela Swift), told me about the facility. Also a state representative said "Hey! so the agency is not in your backyard, hence you kept mute" (Segretti 1993). The low levels of public involvement attracted national attention and was so obvious that Heiman (1990a) stated that the facility siting was progressing "*with virtually no provisions for public participation in the siting process*" (p.360).

### State-activism

State activism refers to the level of involvement of the state's political institutions in establishing facility siting policies, monitoring the siting process and in responding to public concerns (Ibitayo & Pijawka 1999). Past research on the effect of the active involvement of state elected officials in the siting of hazardous waste facilities has, however, produced mixed results. According to Lester & Bowman (1989), active support of the legislative leadership served as an impetus for the state implementation of RCRA, while NYLC (1987) observed that active state involvement in hazardous waste facility siting process tends to promote the issuance of RCRA

permits to new facilities. However, Ibitayo & Pijawka (1999) observed no significant differences between the levels of state activism in states that were successful in siting hazardous waste facilities and states that were unsuccessful. Nonetheless, if state ownership of the facility, and state assumption of liability is to reduce public concerns regarding facility operation and site maintenance, political oversight of the siting process including issuing of permits is necessary. In addition, these activities have to be visible in order to foster public belief that the elected officials are inclined to protect public health.

While state activism was not identified as one of the public concerns during the public hearing, the issue is discussed in this paper because the contention that state ownership of hazardous waste facilities would lessen public concern is based on the notion that the state political officials would provide direct oversight of facility development, operation, and management (Heiman 1990b; Rabe 1994). To what extent did the Arizona state political leadership participate in and monitor the facility siting process? Aside from taking the final decision on site selection, the state legislature was hardly involved in the siting process. The state had no siting board nor a legislative oversight committee for the facility siting process. Also, legislative environmental affairs committees were established only in response to problems encountered during the facility siting process. The state Senate, for example, had an environmental affairs committee only in 1979/1980 and 1991/1992 legislative sessions while the House established environmental affairs committees only in 1979/1980, 1981/1982, 1989/1990 and 1991/1992. The 1979/1980 and 1981/1982 legislative sessions covered the time when the state legislature had to take over from ADHS the responsibility of selecting a site for the facility. Also, the 1989/1990 and 1991/1992 sessions covered the period of intense public opposition to the facility.

The state agency had full discretion to develop the RFP, set user fees, and approve expansion of the facility without any legislative oversight. Statements made by several key legislators after the May 1990 public hearing indicated lack of political oversight. A state representative was quoted as saying: "We knew we need a facility to keep people from dumping. The facility before you today is nothing like we intended." (Bagwell 1990). Also, a state Senator was quoted as saying: "The legislature acted in good faith in 1980 and 1981 to take care of Arizona

waste. We need a facility but not the one that must take out-of-state waste to make a profit.” (Sidener & Yozwiski 1990)

## Conclusion

While state ownership of the land on which the facility is built, and the political oversight over site selection may have led to a “successful” site selection process, the overall failure of the Arizona facility siting attempt suggests that state ownership of the facility or an assumption of liability for the facility does not necessarily reduce public concerns and opposition to the facility. The analysis of the case study including the public hearings identified perceived risk, public mistrust of and lack of public involvement in the facility siting process, as major factors of public opposition to the siting of the facility. As suggested by past research and noted earlier, public risk perception may have been exacerbated by the lack of trust and confidence in state to adequately monitor the facility, and protect public health and the environment. Also, past research suggests that the establishment and maintenance of public trust requires public involvement and input in the siting process, a condition which was consistently flouted in this case study. Instead of building trust, the state agency engaged in what can be perceived as trust-eroding activities, and emphasised waste importation. Incidentally, the waste importation issue actually moved the facility from being in the “backyard” of Mobile residents to being in the “backyard” of all state residents – a more potent and powerful group. The facility operators perceived negative past records in managing similar facilities may have contributed to public mistrust of the company hence even if the level of public trust in the state agency is not low, the facility siting may not have been successful. As Ibitayo & Pijawka (1999) noted “even if the public continues to have low levels of trust in institutions of government-facilities may still be built if the public has a relatively high levels of confidence in a specific operator” p. 386.

Also, the efficacy of the public-private partnership is predicated on the notion of state ownership of facility and therefore of assumption of liability, and that the state would provide political oversight of the facility operation. Yet the statements made by several state legislators after the 1990 public hearings indicate that the state legislature was hardly involved in the granting

of the various permits, and generally did not provide much political oversight. It would therefore have been difficult to convince the public that the state legislature would in the future, monitor facility operation and protect the public from any poor facility management.

One of the themes that emerged from this study is that the factors of public opposition; perceived risk, public mistrust, and lack of public input and education, noted in this study are similar to the findings of past research on the siting of hazardous waste facilities. This observation lends credence to Dunlap *et al.* (1993)’s contention that while attendees at public hearings are not necessarily representative of the public, the concerns expressed at such hearings often correlate well with those of the general public. Another salient theme is that the process of siting hazardous waste facilities, like the implementation of most public policy occurs within a dynamic political, economic and social environment. During the time period of siting a hazardous waste facility; usually a decade or more, certain issues consistently rate as major public concerns, some develop gradually, while other issues may emerge suddenly and profoundly influence the siting process. In this case study, concerns such as perceived risk and low level of public participation were consistently high while other issues including the level of public trust seemed to have surfaced suddenly and rather explosively.

One issue which seemed to have developed gradually over time was the public concern about incinerators. The intensity of public concern regarding incineration could probably not have been foreseen in the earlier stages of the siting process. For example, in 1983, the Facility Contractor Review Board including officials of Sierra Club considered incineration as a viable technology especially when compared with landfilling. A fact sheet sent to the ADHS in 1981 by the Sierra Club Grand Canyon Chapter stated that: “there are alternative technologies (to landfilling), that have been used for decades in Europe and in Japan. They (the alternative technologies) are incineration/pyrolysis” and that “other methods such as incineration and chemical methods are better suited to hazardous waste disposal”. In the early 1980s, the public acceptance of facilities that are designed to incinerate hazardous waste was observed by Morell (1984) to be a national trend.

Nonetheless, several studies that predated or were carried out during the early stages of the Arizona facility

siting process emphasised that public trust especially in the institutions of government and in the facility developer, are pertinent to successful siting. It is therefore incumbent on hazardous waste facility proponents-government institutions, hazardous waste generators and the facility developer to develop contingency plans to deal with issues that have been identified in other locations. Obviously,

the state institutions could have done a better job of establishing public trust, and involving a seemingly apathetic public. Finally, this study, in line with previous research suggests that irrespective of the strategy adopted, factors such as public trust, and public involvement and input into the process are necessary ingredients for successful hazardous waste facility siting.

## References

- Abstracts of state hazardous waste siting laws. (1981). Prepared by the National Conference of State Legislatures, the National Governors' Association, the National Solid Waste Management Association and the U.S. Environmental Protection Agency.
- Anderson, R. F. (1986). Public participation in hazardous waste facility location decision. *Journal of Planning Literature*, 1 (2), p. 145–161.
- Arizona Department of Environmental Quality. (1990). Chronology and information regarding the siting and development of the Arizona hazardous waste management facility. June 1990
- Arizona Department of Health Services. (1983). News Release. July 11. 1983
- Bacow, S. & Milkey, J. (1987). Overcoming local opposition to hazardous waste facilities: The Massachusetts approach. In R. Lake (Ed.), *Resolving Locational Conflicts* (pp. 159–204). Rutgers: State University of New Jersey.
- Bagwell, K. (1990). History of hazardous waste project. *Arizona Daily Star*. August 19, 1990.
- Bingham, G. (1987). Resolving environmental disputes: A decade of experience. In R. Lake (Ed.), *Resolving locational conflicts* (pp. 137–158). Rutgers, NJ: State University of New Jersey.
- Castle, G., & Munton, D. (1996). Voluntary siting of hazardous waste facilities in Western Canada, In D. Munton (Ed.) *Hazardous waste facility siting and democratic choice*, (pp. 57–63), Georgetown University Press, Washington, D. C.
- Dougherty, J. (1992). DEQ accepted funds: Records show. *Tribune Newspapers*. August 12, 1992
- Downey, D. (1988). ENSCO's neighbors expects little benefit. *Chandler Tribune*. August 2, 1988.
- Downey, D. (1990). Greenpeace holds protest at Mobile plant. *Mesa Tribune*. April 21, 1990
- Dunlap, R., Kraft, M., & Rosa E. (1993). Public reactions to nuclear waste: *Citizens' views of repository siting*. Duke University Press, Durham, NC.
- Edelstein, M. (1988). *Contaminated communities: The social and psychological impacts of residential toxic exposure*. Boulder, CO: Westview.
- Fischhoff, B., Lichtenstein, S., Slovic, P., Derby L., & Keeney, R. (1981). *Acceptable risk*. New York: Cambridge University Press
- Hall, D. (1990). Waste plant strongly opposed. *The Arizona Republic*. May 17, 1990.
- Hartdegen, Jim. (1993). [Personal interview], Phoenix, Arizona. August 26, 1993.
- Heiman, M. (1990a). From "Not in My Backyard" to "Not in Anybody's Backyard!": Grassroots challenge to hazardous waste facility siting. *Journal of the American Planning Association*, 56(3), 359–362.
- (1990b). Using public authorities to site hazardous waste management facilities: Problems and prospects. *Policy Studies Journal*, 18(4), 974–984
- Ibitayo, O., & Pijawka, D. (1999). Reversing NIMBY: An assessment of state strategies for siting hazardous waste facilities. *Environment and Planning: Government and Policy*, 17, 379–89.
- Jon, M. (1983). Tiny turnout attends EPA hearing here. *Buckeye Valley News*. March 10, 1983.
- Kasperson, R. (1986) Hazardous waste facility siting: Community, firm and governmental perspectives., In *National Academy of Engineering Hazards: Technology and fairness* (pp. 119–144). Washington, DC: National Academy Press.
- Kasperson, R., Golding, D., & Tuler S. (1991). Social distrust as a factor in siting hazardous waste facilities and communicating risk. *Journal of Social Issues*, 48, pp. 161–87.
- Kunreuther, H., Fitzgerald, K. & Aarts, T. (1993). Siting noxious facilities: A test of facility siting credo. *Risk Analysis* 13, pp. 301–18.
- La Porte, T., & Metlay, D. (1996). Hazards and institutional trustworthiness: Facing a deficit of trust. *Public Administration Review* 56 (4), pp. 341–47.
- Lehman, J. (1984). Resource Conservation and Recovery Act of 1976. In M. Harthill (ed.), *Hazardous waste management: In whose backyard* (pp. 7–25). Boulder, CO: Westview Press.
- Lester, J., & Bowman, A. (1989). Subnational hazardous waste policy implementation: A test of Sabatier-Mazmanian model. *Polity* 21 (summer), 731–753.
- Mazmanian, D., & Morell, D. (1994). The NIMBY syndrome: Facility siting and the failure of democratic discourse. In Norman Vig and Michael E. Kraft (eds.), (pp. 233–249), *Environmental policies in the 1990s: Toward a new agenda*. Washington, DC: Congressional Quarterly Press.
- Morell, D. (1984). Siting and the politics of equity. *Hazardous Waste* 1(4), pp. 555–571.
- Munton, D. (1996a). Introduction: The NIMBY phenomenon and approaches to facility siting. In D. Munton (Ed) *Hazardous waste siting and democratic choice*, Georgetown University Press, Washington DC. pp 1–53. (1996b). Siting hazardous waste facilities, Japanese style. In D. Munton (Ed) *Hazardous waste siting and democratic choice*, Georgetown University Press, Washington, DC. pp 1–53.
- National Workshop on Facility Siting. (1990) Guidelines: *Final draft*. Workshop held at Wharton School, University of Pennsylvania. February 23, 1990.
- NYLC (1987). *Hazardous waste facility siting: A national survey*. New York Legislative Commission on Toxic Substances and Hazardous Waste. Albany, New York.
- Pijawka, D. & A. Mushkatel. 1991. Public opposition to the siting of high-level nuclear waste repository: The importance of trust. *Policy Studies Review*, 10(4), 180–194.
- Rabe, B. (1994). Beyond NIMBY: Hazardous waste facility siting in Canada. The Brookings Institution, Washington, DC.
- Savas, E. S. (2000). *Privatization and public-private partnerships*. Chatman House, New York.
- Segretti, F. (1989). Testimony before the Joint Legislative Study Committee on Hazardous Waste. November 7, 1989. Phoenix, AZ.
- Segretti, F. (1993). [Personal interview with Chairperson, Arizona Coalition

- for the Environment]. Jerome, Arizona. November 10, 1993.
- Sidener, J. & Yozwiski, S. (1990). Incinerator plan finds rough going: Legislators question need for size of plant. *The Arizona Republic* October 6, 1990.
- Slovic, P., Layman, M., & Flynn, J. (1991). Risk perception, trust, and nuclear waste: Lesson from Yucca Mountain. *Environment* 33, pp. 6–30.
- U.S. Environmental Protection Agency. (1979). *Siting of hazardous waste management facilities and public opposition*. U.S. EPA, Washington, DC
- Waitor, J. (1983). Internal memorandum to Chuck Anders, ADHS, August 11, 1983.
- Weiss, N. (1993). [Interview with former Assistant Director, ADEQ] Phoenix, Arizona. April 14.
- Yin, R. (1989). *Case study research: Designs and methods*. Sage Publications, Newbury Park, C.