

ABSTRACT

LINDA KEENER WEST. Utilizing Public Risk Perception To Improve Siting Strategies For Medical Waste Incinerators. (Under The Direction of Dr. ALVIS G. TURNER)

A telephone survey was conducted in a community facing a proposed medical waste incinerator (Hall County, Georgia) to identify concerns that shape the overall opinion toward the facility. The results indicate Hall County respondents:

- 1) acknowledge the need for a facility in Georgia, but oppose one for Hall County;
- 2) perceive that the newspaper is the main source of information about the plant, is primarily unbiased and has more influence on their opinion;
- 3) have not been previously involved in public meetings but believe they can influence private industry;
- 4) are concerned about potential health, aesthetic, economic, and environmental effects, including proper transportation of untreated medical waste and adequate operation and inspections of the plant;
- 5) believe environmental groups are more credible than other officials involved in the siting process;
- 6) recognize components and generators of medical waste;
- 7) oppose compensation;
- 8) believe the state should first reduce waste; and
- 9) are aware of possible consequences of not building a treatment facility.

Involving the public early in the siting process through increased education/communication, using the media to increase the public's knowledge about medical waste treatment technologies and risks, enforcing environmental regulations, and funding ideas on reduction/reuse of medical waste will help to foster credibility of the siting process and those involved and will help facilitate the siting process.

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All opinions expressed in this report are solely those of the author.

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INTRODUCTION

There is a strong opinion in this country that infectious as well as hazardous waste materials should be controlled, regulated, and disposed of properly. Yet when sites for these facilities are sought, there is often a strong public expression of "not in my backyard" (NIMBY) or "not in my community". This strong reaction, increasingly being encountered by state agencies and private industries, is a direct result of the American people demanding greater knowledge of potential risks involved and increased participation in the siting process of such facilities. As a result, citizens across the country have politically organized to block permits for such facilities (Amaral, et. al., 1990; Glaberson, 1988; Lichtveld, et. al., 1990; Wright, 1991).

Many factors, besides the two above, influence the acceptance of or opposition to treatment and disposal facilities. These may include the siting strategy used (Amaral et. al., 1990; Robbins, 1989; and Susskind, 1990), the lack of community involvement in the siting process (Hance et. al., 1988), citizens' distrust and perceived lack of credibility of private industry and federal and state officials (Health and Welfare Canada, 1984; Slovic, 1987; Whyte and Burton, 1982; Wright, 1991), and the increased environmental contamination of water, soil, and air despite billions of dollars spent for clean up (Wright, 1991). Coverage of the siting process by the media, coupled by current environmental events, may also be a factor (Health and Welfare, 1984 and Wright, 1991). Additional factors that serve to catalyze public opposition are the perceived impacts of the facility on the host community (including health, aesthetics, and economic issues) and perceived management of medical waste (Amaral et. al., 1990, Glaberson, 1988; Kreski, et. al., 1987; and Lichtveld, et. al., 1990).

With those factors in mind, a telephone survey was designed and conducted

to characterize the opposition to and support for a treatment facility in a county recently considered as the location for a medical waste facility.

Objectives of this thesis are the following:

- 1) identify the overall opinion towards the proposed facility;
- 2) classify which type(s) of information sources have the greatest influence on the respondents' opinion toward the plant;
- 3) determine the survey respondents' involvement in and perceived influence on the siting process;
- 4) characterize which uncertainties/issues about medical waste treatment/disposal most concern the public;
- 5) identify concerns and attitudes reflected toward environmental groups, private industry, and federal and state officials involved in the siting process;
- 6) evaluate public awareness of the components and generators of medical waste;
- 7) determine existing attitudes toward some types of compensation;
- 8) classify opinions toward types of treatment methods; and
- 9) determine public awareness of possible consequences of not building this facility.

Given the exploratory nature of this survey, several general hypotheses relating to opposition/acceptance of the proposed facility will be tested. Studies presented in the literature review section lead me to expect the following:

- 1) Respondents who have heard about the facility will be more opposed to it than those who have not heard about it.
- 2) Respondents residing in Gainesville will be more opposed to the facility than residents living in other communities in Hall County.
- 3) Women will be more opposed to the facility than men.
- 4) Respondents who are young (in their twenties) and middle aged (in their forties and fifties) will be more opposed to the facility than other ages.
- 5) Blacks will be more opposed to the facility than other races.
- 6) Residents in the occupational category of "professionals" will be more opposed to the facility than those in the remaining categories.
- 7) Respondents with children in their household will be more opposed to the facility than those that do not have children in their

household.

- 8) Respondents with a college education or higher education will be more opposed than those without a college education.
- 9) Residents with middle to high incomes will be more opposed than those with lower incomes.
- 10) Respondents who are homeowners will be more opposed to the facility than renters.

The results of this study will be used in conjunction with previous risk perception studies to suggest ways to improve the siting strategy for medical waste incinerators and similar projects.

REPORT ORGANIZATION

The first section will provide a literature review of pertinent information about medical waste and previous public opinion surveys. The next two sections will explain how this study was conducted and furnish the results of this study, followed by summaries of the main findings. A final section lists the conclusions and recommendations pertaining to improving the siting strategy for the management of medical waste. References and appendices then follow.

LITERATURE REVIEW

Concern for Management of Medical Waste

Since the early 1980's, the public has become increasingly concerned about medical waste due to a specific fear of AIDS (Acquired Immuno-Deficiency Syndrome), coupled with a general fear of spread of disease and an intense dislike of body parts, fluids, and used bandages (Lichtveld, et. al., 1991). This concern escalated during the summers of 1987 and 1988 when various medical-related material washed up along several beaches. A flood of medical waste, (including syringes, bandages, and vials of blood) common garbage, and sewage polluted miles of beaches from New Jersey to Massachusetts. Besides the northeast, other areas were involved. Medical debris washed up on beaches along Lake Erie and Lake Michigan; syringes were found on several beaches in Spain; and in the Soviet Union, health officials were forced to close beaches on the Baltic, Pacific, and Black Sea because of poor sanitary conditions (Reynolds, 1989).

However, medical waste was but a small portion of the total waste that appeared on the east coast beaches. According to Bleckman, Doucet, and Sales (1989), the medical waste that washed up on our beaches came primarily from six sources: mismanagement of municipal solid waste, including medical waste; sewer discharge and combined sewer overflows; illegal drug use; beach litter, including refloatables; commercial and military shipping and pleasure boating; and illegal dumping activities.

The Medical Waste Tracking Act

These occurrences caused the public, and subsequently the congress, to question the adequacy of current medical waste management practices as well as the public health implications of medical waste. In response, Congress passed the Medical Waste Tracking Act of 1988 (MwTA) (Lichtveld, et. al., 1990). It required the Administrator of the U.S. Environmental

Protection Agency (EPA) to create regulations establishing a demonstration program for tracking medical waste (including separating, packaging, and labeling) and listing the types of medical waste to be tracked under this program. Under this program, the EPA is the sole federal agency responsible for enforcement and monitoring activities. Participating in this program were the States of Connecticut, New Jersey, New York, and Rhode Island, and the Commonwealth of Puerto Rico. The program became effective beginning July 24, 1989 and continued for two years. At that time, EPA was to evaluate the success of the program, present the results to the Congress, and determine whether such a program should be extended nationwide. The final report has not yet been released.

The MWTA created a comprehensive tracking system for the collection, treatment, and disposal of infectious waste from "cradle to grave", or from its generation to disposal. This system, similar to the one used for hazardous waste, features detailed shipping records, called "manifests" and are to be completed by the generator of the medical waste, along with the waste transporters, and the operators of treatment and disposal facilities. Once the waste is properly disposed of, everyone along the tracking route must return a copy to the generator. Generators producing less than 50 pounds of infectious waste per month are exempt from these requirements, although they must follow rules on packaging and treatment. Generators must keep a log book of waste treated on-site; once sterilized, the waste can be sent to a landfill without a manifest (U.S. EPA, 1989A-1989D).

Components of Medical Waste

Medical waste has been historically regulated as general refuse under Resource Conservation Recovery Act (RCRA) Subtitle D (Lichtveld, et. al., 1990). The Medical Waste Tracking Act of 1988 (Section 3) defines medical waste as "any solid waste which is generated in the diagnosis, treatment,

or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals" (U.S. EPA, 1989D). With this definition in mind, it gives one a better appreciation for how medical waste permeates all of our lives and the amounts we all indirectly generate. The ten categories of solid waste items that comprise medical waste include:

* (1) **CULTURES AND STOCKS:** Cultures and stocks of infectious agents and associated biologicals, including cultures from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, wastes from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) **PATHOLOGICAL WASTES:** Pathological wastes, including tissues, organs, and body parts that are removed during surgery or autopsy.

(3) **WASTE HUMAN BLOOD AND BLOOD COMPONENTS:** Waste human blood and products of blood, including serum, plasma, and other blood components.

(4) **SHARPS:** Sharps that have been used in patient care or in medical, research, or industrial laboratories, including hypodermic needles, syringes, pasteur pipettes, broken glass, and scalpel blades.

(5) **ANIMAL WASTE:** Contaminated animal carcasses, body parts, and bedding of animals that were exposed to infectious agents during research, production of biologicals, or testing of pharmaceuticals.

(6) **SURGERY OR AUTOPSY WASTE:** Wastes from surgery or autopsy that were in contact with infectious agents, including soiled dressings, sponges, drapes, lavage tubes, drainage sets, underpads, and surgical gloves.

(7) **LABORATORY WASTES:** Laboratory wastes from medical, pathological, pharmaceutical, or other research, commercial, or industrial laboratories that were in contact with infectious agents, including slides and cover slips, disposable gloves, laboratory coats, and aprons.

(8) **DIALYSIS WASTE:** Dialysis wastes that were in contact with the blood of patients undergoing hemodialysis, including contaminated disposable equipment and supplies such as tubing, filters, disposable sheets, towels, gloves, aprons, and laboratory coats.

(9) **DISCARDED MEDICAL EQUIPMENT:** Discarded medical equipment and parts that were in contact with infectious agents.

(10) **ISOLATION WASTE:** Biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from human beings or animals who are isolated to protect others from communicable diseases* (U.S. EPA, 1989D).

Approximately 500,000 tons of these regulated wastes are generated annually in the United States by about 380,000 regulated generators (Lichtveld, et. al., 1990). This amount of medical waste from regulated generators represents 0.3 percent of the 158 million tons per year of municipal solid waste that Americans annually produce. The primary generators of medical waste are the 7,118 hospitals in the United States which annually produce 77 percent of the total regulated medical waste. Besides hospitals, individuals potentially involved with medical waste treatment and disposal include health care providers and workers, waste handlers, and the general public (Lichtveld, et. al., 1990). These occupational groups are discussed in greater detail in Appendix 1 (in Table 7), and the methods of treatment employed by these groups are summarized below in Table 1.

**POPULATIONS POTENTIALLY INVOLVED WITH MEDICAL WASTE:
TREATMENT AND DISPOSAL METHODS USED**

TABLE 1:

Population	Methods Used			
	Decontamination ¹	Sanitary Sewer ²	Incineration ³	Landfill ⁴
Health Care Providers/Workers	X	X	X	X
Veterinarians/Animal Care Workers	X	X		
Laboratory Workers	X	X		
Janitorial Workers	X	X	X	X
Laundry Workers	X	X	X	X
Refuse Workers				X
Waste Water Workers		X		
Maintenance Plant Operators/Repairers		X	X	
Morticians	X	X	X	

Source: The Public Health Implications of Medical Waste: A Report to Congress (Lichtveld, et. al., 1990)

- ¹= Decontamination usually includes three general categories: heat treatment (autoclaving), chemical treatment, and much less used, radiation treatment. However, autoclaving is the most widely used method.
- ²= Medical wastes typically discharged to this system include blood and blood products and pathological and animal wastes. These constitute a small portion of wastes discharged to this system and are diluted by large amounts of residential sewage to well below the concentration needed for bloodborne disease transmission.
- ³= For hospitals, incineration has traditionally been their primary method of disposal. This process converts combustible materials into noncombustible residue or ash and can effectively reduce waste volume by 90 percent or more. Approximately 5,000 medical waste incinerators are operating in U.S. hospitals.
- ⁴= Landfills have been traditionally used for solid waste disposal and include dumps and sanitary landfills. Dumps are open pits with very little monitoring, vector control, or maintenance, whereas sanitary landfills are specifically designed and constructed for long-term storage and degradation; groundwater is generally monitored and leachate collected.

Previous Public Opinion Studies

Previous studies have been conducted to better understand public perception and its influence on development projects such as hazardous waste incinerators. Some studies have focused on determining attitudes toward development projects. Public risk perception studies have provided useful insight into why certain people are more likely to oppose these projects and which sociological factors influence their perception. In addition, other researchers have been interested in improving siting strategies and have provided recommendations to accomplish this. All of these studies mentioned above have contributed toward better understanding of public perception.

Hazardous Waste Management/Treatment

A group of students attending the graduate School of Public Health at UNC-Chapel Hill conducted a telephone survey to characterize public attitudes toward hazardous waste management and the location of a proposed hazardous waste incinerator (Amaral, et. al, 1990). Their survey was conducted in Johnston County, North Carolina, and their results indicated that Johnson County residents: (1) acknowledged the need for a facility in North Carolina, (2) would oppose the facility in Johnston County, (3) generally knew which household substances were hazardous, (4) were aware of some risks of not building a treatment facility, and (5) felt that the state should work first to reduce waste. Cross-tabulations were generated to estimate associations between responses to various questions and demographics of the sample. They found that:

- (1) Managers expressed the strongest acknowledgment of the need for a facility in North Carolina but also the strongest opposition to one in Johnston County and strongest preference for waste reduction.
- (2) Men acknowledged the need for a facility more often than women.
- (3) Whites more often acknowledged the need for a facility and more often

expressed acceptance of a local facility than blacks.

(4) Higher education levels showed increased acceptance of a facility in Johnston County.

(5) Singles were more willing to live close to a facility and preferred building the facility, whereas members of couples preferred waste reduction.

(6) Higher incomes showed increased perception of need for a facility, but no increased acceptance of one in Johnston County. This was interpreted by the authors to be a strong "NIMBY" effect. Although these residents may acknowledge a need for the facility and may approve of incinerators as a viable method of treatment, they do not want it in Johnston County.

Opposition to Development

Glaberson (1988), also interested in the factors that influence the NIMBY Syndrome, wrote an article which summarized such studies. His paper presented and discussed findings from a report prepared for the California Waste Management Board in 1984 by Cerrell Associates which listed a breakdown of groups most likely to oppose development projects in their neighborhoods. This breakdown, provided below in Table 2, was based on the analysis of Cerrell Associates and a variety of polls and academic research. The study concluded that those most resistant to development projects were persons residing in urban communities, large populations (>249,000 persons), or the northwest, west, and California. Other characteristics of those opposed to such projects also included the young and middle aged, liberal in political beliefs, democrats, and of a religion other than catholicism. They also tended to have a college education, have a professional occupation or be a housewife, and have middle to high incomes.

TRYING TO PREDICT THE NIMBY SYNDROME

TABLE 2:

Demographic Characteristic	Least Resistant	Most Resistant
REGION	South; Midwest	Northeast; West; Calif.
SIZE	Small (<25,000 pop.)	Large (>249,999 pop.)
COMMUNITY	Rural	Urban
POLITICS	Conservative--Free Market Orientation	Liberal--Welfare State Orientation
AGE	Above middle age	Young and middle age
EDUCATION	High School or Less	College
PARTY	Republican	Democratic
OCCUPATION	Rancher/Farmer; Business, Technology Related; Nature Exploitive	Housewife; Professional
INCOME	Low	Middle and high
RELIGION	Catholic	Other

Source: "Coping in the Age of 'NIMBY'" (Glaberson, 1988)

Public Risk Perception Studies

In addition, various studies have been conducted to explore which sociological, psychological, and cultural factors shape public risk perception. In particular, those studies describe the credibility of information sources, knowledge of risk, and how the public processes information about risk.

Information Sources and Their Credibility

A number of studies have been conducted to explain the sociological and psychological factors influencing risk perception. To examine the sources from which individuals obtain their information on risk, a study was conducted by *Health and Welfare Canada* (1984, as cited in Krewski, Somers, and Birkwood, 1987). They asked respondents to identify their primary source of information and then rank the credibility of each source. The

majority of respondents in their survey identified the news media as being their primary source of information on health risk, however they also ranked the news media lowest in credibility. The credibility of physicians and government agencies appeared to rank the highest. Whyte and Burton (1982) discovered the level of trust the public places in the government is important, as the public tends to believe warnings of danger, but not reassurances of safety.

Wright's paper (1991) investigated the perceived credibility of corporate and government leaders. His paper discussed the results from a survey of residents in Dayton, Texas, a small community about 45 miles northeast of Houston. A company had proposed storing hazardous wastes in a salt dome in this community, and this study was conducted to measure reactions to the proposed site from the earliest stages of the project. Most respondents tended to trust scientists and technical experts, while distrusting industry representatives and government officials. Sixty-six percent of the public said they would believe assurances given to them by scientists or technical experts, while only 26% would believe government officials. Even fewer (22%) would believe industry representatives. This study further revealed that the majority of respondents (52%) felt that federal government legislation had not improved waste management practices in recent years, 32% believed they had, and 16% did not know.

Slovic (1987) concluded that risk perception is influenced by both social and cultural factors. Slovic's study found that the opinions and actions of friends, family, co-workers, and respected public officials all contribute to an individual's perception of risk.

According to Whyte and Burton, (1982) knowledge of and attitudes about risk appear to be related to socioeconomic and demographic variables. Knowledge of the technical, scientific, and medical aspects of hazards

tends to be low amongst the population as a whole, but is generally higher for males, younger adults, and better educated individuals. Despite their limited knowledge, most individuals feel capable of making risk decisions. Attitude, especially concern about risk, is less clearly defined than is knowledge, although older individuals and women, particularly those with young children, generally express the most concern.

How the Public Processes Risk Information

The way the public processes information they are given about their risk to some particular project can also heavily impact their acceptance or opposition to a that project.

Krewski, Somers, and Birkwood, (1987) concede that concern is heightened if the process or mechanisms leading to the risk in question is not understood or if the individual has little or no control over the risks. Likewise, involuntary risks are less likely to be accepted than those which are voluntary. Unfamiliar risks are of greater concern than familiar ones. Concern is also heightened when there is little knowledge about the risk, although this issue is complex. Initial awareness may cause alarm, which decreases once understanding is gained; however when more knowledge is obtained, the uncertainty associated with scientific knowledge becomes more significant than the gain in reassurance. Risks for which the information source is not perceived as credible tend to be viewed with greater concern than those for which the source of information is reliable. Concern may also be increased when there is much media attention, although the net effect depends on the kind and contents of coverage.

Whyte further contends (1984, as cited in Krewski, Somers, and Birkwood, 1987) that people tend to overestimate the frequency of rare events and underestimate the frequency of common events. Specifically, low

probability high consequence events tend to be evaluated more in terms of consequences than probability, to the point that what is possible becomes more important than what is probable.

Two studies (Slovic, Fischhoff, and Lichtenstein, 1982 and Slovic, 1987) concluded that many factors lead individuals to deny uncertainty, misjudge risks, and maintain unwarranted confidence in judgements of fact. Those factors include difficulty in understanding probabilistic processes, biased media coverage, misleading personal experiences, and anxieties caused by life's gambles. Fischhoff (1985) believes that individuals tend to simplify complex and uncertain information and tend to rely on rules of thumb and tradition to shape perceptions. Similarly, Slovic (1987) found that despite difficulties in assessing risk, individuals may use existing information to form strong views about risks.

Siting Strategies

Other studies have suggested ways to improve siting strategies. The results from three important studies are discussed below.

On October 27, 1989, a workshop on facility siting was held at Massachusetts Institute of Technology (Susskind, 1990). Twelve facility siting experts from across the U.S. met to establish guidelines to improve siting strategies to be eventually tested by practitioners and government officials who had been successful and unsuccessful in siting past facilities. In determining this policy, participants felt the siting process should produce: 1) a predictable, timely siting and commencement of facility operations, 2) terms of siting and operation freely accepted by local or regional government, private developers and operators, and community residents, and 3) trust between city-wide or regional government and community residents, developed thorough a siting perceived as equitable to all parties. They developed goals for the three phases

involved in facility siting: problem identification, process, and outcome.

The problem identification goals include: 1) The siting of a facility should be part of an answer to a universally accepted problem acknowledged by all affected parties, and 2) Establish that the proposed facility is necessary and appropriate for addressing the identified problem (Suskind, 1990).

The process goals include: 1) Establish broad participation and voluntary decision making emphasizing as much consensus as possible at all stages of the siting process. Represent all stakeholders in the dialogue on an early and continuing basis; 2) Consider all available sites; analyze the consequences of each site (economic, psychological effects), making trade-offs between benefits and burdens across sites wherever possible; 3) Develop trust among different interested parties; 4) Make sure that the process is an iterative one with opportunities for suggestion and revision at all points in the process; 5) The siting process should be designed in such a way that the community believes the process is fair and equitable according to siting criteria, identification of suitable sites, composition of the siting commission, and issues of empowerment and the sharing of risk (Suskind, 1990).

The outcome goals should be: 1) Assure the community that the facility will meet safety standards now and in the future; 2) Provide an attractive package for the host community; 3) Outcome is perceived to be fair to both host community and other interested parties; 4) Final outcome should be an improvement over the current situation; and 5) Stakeholders should be comfortable with future projections of how the site will be managed and how liability issues will be handled (Suskind, 1990).

Amaral et. al. (1990) have also provided recommendations specific to improving the siting of hazardous waste management strategies. Their recommendations were for an unsolicited report for the North Carolina Hazardous Waste Management Commission (NCHWMC) and they include the following:

- 1) "State waste management officials need to address the public's perception of the risks rather than reminding citizens of what "experts" believe are the actual risks;
- 2) Due to their general support, environmental groups should play a more significant role in the negotiations between the community and the NCHWMC in order to gain the public's trust in the process;
- 3) In addressing the public's anxiety about possible effects, the state needs to do further study to determine whether any negative economic impacts will result from the facility's site;
- 4) In easing the public's fears, the siting process would be more successful if the state would acknowledge its responsibility to mitigate any negative impacts caused by the facility;
- 5) To further address economic concerns, the facility should be sited in a locality in a healthy, local economy to minimize the chances of possible negative impacts;
- 6) Because of greater acceptance with higher levels of education, the siting process would be more successful if the facility were sited near a university or research community where significant opposition is less likely to occur;
- 7) In accordance with the public's desire to reduce waste, state agencies and private industry should fund extensive waste minimization studies;
- 8) In order to place the burden on those responsible for the waste, a large portion of the fees collected from hazardous waste generators needs to be used to fund waste minimization programs;
- 9) Based on relative hazard (degree of hazard), a generator fee discount

system can be refined in a pilot study and phased in across industry on a voluntary basis to provide more compelling incentives to reduce both the hazard and volume of hazardous waste".

Hance, Chess, and Sandman (1988) have developed manuals about how to involve communities to help solve environmental problems and respond to the public's needs and concerns. From their experience, they discuss ideas on earning trust and credibility, deciding when to release information, interacting with the community, and explaining risk. Significant ideas include the following: be aware of the factors that inspire trust (does the agency seem caring, encourage meaningful public involvement, and pay attention to outrage factors when dealing with the public?); be forthcoming with information and involve the public from the outset; get the facts straight; listen to what various groups are telling you; avoid offending any group; enlist the help of organizations that have credibility with communities; and avoid secret meetings. They also suggest that persons should: acknowledge uncertainty, don't confuse people's understanding of the risk with their acceptance of it; be careful about attempting to use monetary benefits to compensate for an imposed risk; recognize that peoples' values and feelings are a legitimate aspect of environmental health issues, and that such concerns may convey valuable information; provide a forum for people to air their feelings; and respond to their emotions. They also recommend that large public meetings are not always the best way to communicate with the public; smaller, informal meetings may be better in certain situations.

Compensation and Mitigation

Gregory and Kunreuther (1990), Shuff (1988), McMahon et. al. (1982) and Hawthorne (1988) suggest that measures can be offered to the host community to make projects equitable when faced with the NIMBY Syndrome of public opposition to siting treatment/disposal facilities. The two major

areas of concern for citizens seem to be for issues of risk and equality or trust (Gregory and Kunreuther, 1990). These concerns, researchers have discovered, can be lessened by utilizing compensation in various forms, however a careful pairing between a specific siting situation and an incentives strategy is needed for facility acceptance. Hawthorne's study (1989) noted that "use of compensation and public participation in general is concentrated in the most densely populated area of the country", thus smaller communities may not be as accepting of these measures as the more denser, industrialized cities. Although these researchers categorize compensatory measures differently, a few of them are additional environmental monitoring, health monitoring, terms of construction/operation, road maintenance, emergency training/equipment, site beautification, direct payment, property value guarantees, funds for public improvements, imposing fines for accidental releases, enforcing standards through monitoring and control procedures, establishing local community representation on a facility's governing board, and setting aside contingency funds for the facility to meet future financial obligations if an accident would occur.

RESEARCH METHODOLOGY

Since the purpose of this thesis was to characterize the opposition to and support for a medical waste incinerator, Hall County, Georgia was selected as the sample community due to its geographical location, the assistance of local representatives, and its proposal as a siting location. The intent was to interview individuals who had already been thinking and reacting to the types of questions and issues related to siting treatment/disposal facilities.

A telephone survey was chosen as the survey tool because it allows for extensive coverage of the population of interest and it is less costly and time-consuming than face-to-face interviewing. It also has a higher response rate, lower cost per return, and a quicker method of return than mail out/mail back questionnaires.

Several instrumental resources were used to design and implement this survey. These resources include 1) *Improving the Strategies for Managing Hazardous Waste in North Carolina*, (Amaral, et. al., 1990) 2) *Attitudes of the Public and the Department of Environmental Protection Toward Environmental Hazards*, (Weinstein, 1988) 3) *Siting of Hazardous Waste Facilities and Public Opposition*, (Centaur Associates, 1979) 4) *A Handbook of Survey Research*, (Kingery et. al., 1989) 5) *Interviewers Guide*, (Kingery et. al., 1989A), and 6) *Optimal Call Scheduling for a Telephone Survey* (Weeks, Kulka, and Pierson, 1978).

Questions were designed to accomplish nine specific objectives. Questions designed to meet specific objectives are provided below:

- 1) identify the overall opinion towards the proposed facility;
Questions 7, 8

- 2) classify which type(s) of information sources have the greatest influence on the respondent's opinion toward the plant;
Questions 2A-6
- 3) determine the survey respondents' involvement in and perceived influence on the siting process;
Questions 9, 26
- 4) characterize which uncertainties/issues about medical waste treatment/disposal most concern the public;
Questions 10-13, 17-22, 29 (Questions 14-16 provide additional concerns.)
- 5) identify concerns or attitudes reflected toward environmental groups, private industry, and federal and state officials involved in the siting process;
Questions 14-16, 23, 27, 28
- 6) evaluate public awareness of the components and generators of medical waste;
Questions 38, 39
- 7) determine existing attitudes toward some types of compensation;
Questions 30-34
- 8) classify opinions toward types of treatment methods; and
Questions 24, 25, 35
- 9) determine public awareness of possible consequences of not building this facility.
Questions 36, 37

The remaining questions (Questions 51-58, and 1-2) are used to obtain demographics for survey respondents.

Prior to its implementation, this survey design was reviewed by a number of individuals in various disciplines (a list of reviewers is provided in Appendix 2) and pretested. Based on the formula of Schaeffer, Mendenhall and Ott (1979, as cited in Kingery, 1989) which assumes a 50% response rate, the sample size required for a simple random sample was determined to be 398. To obtain a pool of approximately 1,000 randomly selected telephone numbers, a table of random numbers and the 1990-1991 Hall County phonebook (Southern Bell, 1990-1991) was used (Appendix 3 lists the available number of residential lines for Hall County). The survey was administered from August 1 through October 31, 1990 and yielded 402

completed surveys (calculations of the completion rate is provided in Appendix 4). The survey responses were then coded for data entry and analyzed using SAS. A copy of the survey is provided in Appendix 5.

Frequencies and percents were generated to address the objectives of this thesis. Chi-square tests of statistical significance were used in the cross-tabulations of the demographic variables and the survey question about acceptance/opposition to the medical waste treatment plant (Q7). Cramer's V was used to estimate the strength of the relationship of those cross-tabulations.

HALL COUNTY, GEORGIA: LOCATION OF SURVEY POPULATION

Figure 1:



Source: Map Maker

The total population for Hall County was estimated to be 96,065 in 1990.

(U.S. Bureau of the Census, 1988).

RESEARCH FINDINGS AND DISCUSSION

This portion of the thesis will present and discuss the results of univariate analysis and results of the bivariate (cross-tab) analysis, which describes significant associations between demographic variables and responses to opposition/acceptance to the facility (Q7).

Demographics

As can be seen in Table 3, the Hall County survey participants are very diverse in occupation, education, age, and income level as well as their opinions toward a medical waste treatment plant. The demographics of the sample is compared to that of Hall County in Appendix 6.

Table 3: Demographics of the Sample:

<hr/>						
1. <u>GENDER:</u>		Males		Females		
Sample		38%		62%		
Hall County		49%		51%		
<hr/>						
2. <u>AGE:</u>	<20	20-30	31-40	41-50	51-60	>60
Sample	3%	20%	29%	20%	11%	17%
Hall County	<20 28%	20-29 16%	30-39 16%	40-49 13%	50-59 13%	60+ 14%
<hr/>						
3. <u>RACE:</u>		White	Black	Others		
Sample		94.50%	5.20%	0.00%		
Hall County ¹		87.10%	8.60%	4.30%		
<hr/>						
3A. <u>HISPANIC:</u>						
Sample		0.30%				
Hall County		4.60%				
<hr/>						
4. <u>OCCUPATION:</u>	Pro.	Serv	Non-pro.	Uncomp.	Inact.	Ref.
Sample	33%	17%	20%	17%	12.5%	0.5%
Hall County ^{2*}	20%	33%	47%	NA	NA	NA
<hr/>						
5. <u>HOUSEHOLDS WITH CHILDREN:</u>						
Sample		52.5%				
Hall County		39.4%				

6. <u>EDUCATION:</u>						
<u>(in years)</u>						
Sample	<11	12	13-16	17+		
	14%	33%	37%	16%		
Hall County ^{3*}						
	<11	12	13-16	17+		
	49.0%	27.6%	19.2%	4.2%		
7. <u>HOUSEHOLD</u>						
<u>INCOME:</u>						
<u>(in \$1,000)</u>						
Sample	<10	10-30	30-50	50-75	>75	Refused
	8%	33%	31%	14%	10%	4%
Hall County ^{4*}						
	<10	10-<30	30-<50	50-<75	75+	
	30.2%	54.6%	11.5%	2.3%	1.4%	
8. <u>STATUS OF</u>						
<u>RESIDENCE:</u>						
Sample	Own	Rent	Refused			
	85.3%	14.4%	0.3%			
Hall County*	71.5%	28.5%	NA			
9. <u>COMMUNITY</u>						
<u>OF RESIDENCE:</u>						
Sample	Gainesville	Flowery Branch	Clermont	Lula		
	73.6%	13.4%	8.2%	4.7%		
Hall County ⁵	76.0%	11.3%	7.4%	5.3%		

Source: Wonder Data Base, U.S. Census Data for 1970-1990

NA= not available

*= 1980 Census Information

¹= Since Persons of Hispanic Origin may be of any Race, Percentages Will Not Add to 100.

²= 1980 Census Information; Occupation based on Persons 16 years old and over

³= 1980 Census Information; Education based on Persons 18 years old and over

⁴= 1980 Census Information; Income based on Persons 18 years old and over

⁵= Based on Relative Numbers of Residential Phone Lines, Provided by a Southern Bell Representative [Appendix 3]

Results of Univariate Analysis

For ease of explanation, the results from individual questions will be grouped according to the objective they were designed to accomplish. Discussions of the findings will follow each question. (Results are provided by consecutive question number in Appendix 7.)

- 1) Questions 7 and 8 identify the overall opinion towards the proposed facility.

FAVOR OR OPPOSE MEDICAL WASTE TRT PLANT

Q7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR FAVOR	11	2.7	11	2.7
FAVOR	76	18.9	87	21.6
OPPOSE	79	19.7	166	41.3
STR OPPOSE	122	30.3	288	71.6
NOT SURE/UNDEC	114	28.4	402	100.0

Exactly half of the respondents oppose this treatment plant (50%) and 21.6% are in favor of the plant. Nearly 30% of the respondents are undecided, which amounts to 114 individuals that have either not received enough information to form an opinion or may be uninterested in this issue. During the completion of the survey, the location of the plant in Gainesville looked doubtful. This might account for the lack of interest in this topic.

DOES GEORGIA NEED PLANT TO MANAGE MED WASTE

Q8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	233	58.0	233	58.0
NO	49	12.2	282	70.1
NOT SURE/UNDEC	120	29.9	402	100.0

Although 58% of the respondents feel that Georgia needs this plant to manage its medical waste, about 12% do not. Again, nearly 30% are undecided, which may indicate that the siting company is not adequately

addressing the concerns about the facility or is not stressing the merits of the facility. (The first public meeting was held on Good Friday, April 1990, and I could only locate one article written by the siting facility in *The Times*--"No alternatives yet surpass incineration" included in Appendix 7. The only information the siting company would send me was the annual report for the company.) The number of undecided respondents may also indicate that there isn't a lot of organized opposition to this facility or that there isn't a lot of interest in this particular issue. However, it is interesting to note that although 58% of the respondents acknowledge a need for the plant, only 21% of the respondents favor the plant.

- 2) Questions 2A-6 classify type(s) of information sources that have the greatest influence on the respondents' opinion toward the plant.

HEARD ABOUT TRT PLANT FOR GAINESVILLE

Q2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	272	67.7	272	67.7
NO	130	32.3	402	100.0

Out of 402 participants, 272 individuals (68%) had already heard about the proposed treatment plant, whereas 130 (32%) had not. Since this survey was purposely conducted in this type of community (after an announcement of the proposed site, but before a decision had been reached), it is not surprising that almost 70% had in some manner heard about the proposal.

REMEMBER WHERE YOU HEARD ABOUT IT

Q2A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
CAN'T REMEMBER	3	1.1	3	1.1
CAN REMEMBER	269	98.9	272	100.0

For those people who had heard about the proposed plant, only 1% could not remember how they had heard about it, whereas almost 99% could remember. Summarized in Table 4 are the results to Questions 3x1 through 6x10 which ascertain how respondents heard about the facility and their overall reaction to that information source. Summarized in Table 5 are the results to Questions 6x7 and 6x11 which determine those information sources perceived to have the most influence on their opinion towards the plant. Data from these tables are discussed below.

In Table 4, the sources of information are ranked according to perceived coverage of the proposed facility. A large majority (84%) heard about the proposed facility through the newspaper. Almost 35% heard about it through the radio and about 22% heard about it through a friend or neighbor. The medium of television was surprisingly fourth from the top (about 15%), followed by petition (8.9%), local environmental group(s) (4.5%), hearing and or meeting (4.5%), and magazine and or newsletter (0.7%). Since I expected that either the newspaper or television would be the most relied upon source of information, it was interesting to note that television came in fourth place. That may be due to higher coverage in the newspaper, radio, and obviously through word-of-mouth, or those media (newspapers and radio) may have been consulted more for information due to reliability. In either case, those media should be used more often to communicate with the public.

OVERALL REACTION TO DIFFERENT SOURCES

Table 4:

HEARD ABOUT IT THROUGH MEDIUM ¹	PERCENTAGE ²	OVERALL REACTION / PERCENTAGE
Newspaper	84.0%	Both 49% Slanted 36% --- (Against= 82%) Can't Rem. 15%
Radio	34.9%	Both 48% Slanted 34% --- (Against= 88%) Can't Rem. 18%
Friend/Neighbor	21.9%	Both 14% Slanted 81% --- (Against= 79%) Can't Rem. 5%
Television	14.5%	Both 44% Slanted 38% --- (Against= 87%) Can't Rem. 18%
Petition	8.9%	Slanted 100% --- (Against= 100%)
Local Environmental Groups	4.5%	Both 33% Slanted 67% --- (Against= 88%)
Hearing/Meeting	4.5%	Both 13% Slanted 67% --- (Against= 62%) Missing 20%
Magazine/Newsletter	0.7%	Both 50% Missing 50%

¹= Media are listed in order of highest to lowest reaction.

²= Percentages will not add to 100 because participants could choose more than one medium.

SOURCES WITH THE MOST INFLUENCE

Table 5:

HAD MOST INFLUENCE	PERCENTAGE ¹
Newspaper	40.1%
Friend/Neighbor	11.9%
Radio	10.8%
Petition	3.7%
Television	3.3%
Hearing/Meeting	3.0%
Local Environmental Group(s)	1.9%
Magazine/Newsletter	0.7%
Can't Remember	0.4%
Earlier Opinion Had Most Influence	22.7%
Opinion Still Being Formed	5.9%

¹= Percentages will not add to 100 because the survey participants could choose more than one response.

When survey participants were asked about perceived coverage of the facility, (Table 4) the newspaper, radio, television, and magazines and or newsletters were mostly perceived as unbiased. Sources believed to be slanted (against the facility) include friends and or neighbors, petition(s), local environmental group(s), and hearings and or meetings (responses ranged from 62% to 100%); no sources were found to be slanted for the plant. Newspaper articles taken from *The Times--Gainesville, Georgia* (Appendix 8) indicate they were fair in their coverage of the proposed plant. In fact, citizens were accusing the paper of favoring the plant, when most articles were expressing opinions against the plant.

In Table 5, responses from participants are summarized for perceived influence on their opinion about the plant. Newspaper (40.1%), friends and or neighbors (11.9%), and the radio (10.8%) are perceived to have the greatest influence, as perceived by the respondents, which may be due to

these sources providing the most coverage about the plant. Petition(s), television, hearing and or meeting, local environmental group(s), and magazine and or newsletter are perceived to have the least amount of influence. A few individuals could not pinpoint which source has more influence on their opinion (0.4%), whereas others think their earlier opinion has the most influence (22.7%), and others indicate their opinion is still being formed (5.9%).

- 3) Questions 9 and 26 determine the survey respondents' involvement in and perceived influence on the siting process.

EVER BEEN TO MEETING ABOUT MED WASTE/ENV ISSUE

Q9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	73	18.2	73	18.2
NO	329	81.8	402	100.0

The question concerning attendance at a meeting about medical waste and/or environmental issues is asked to ascertain community involvement and interest in the proposed plant. Nearly 82% have never been to a meeting about an environmental issue, which indicates the community as a whole is not very vocal about environmental issues or the plant is not generating a lot of interest at the time of the survey.

I HAVE NO AFFECT ON INDUSTRY'S DECISION

Q26	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	5	1.2	5	1.2
AGREE	85	21.1	90	22.4
DISAGREE	243	60.4	333	82.8
STR DISAGREE	54	13.4	387	96.3
NOT SURE/UNDEC	15	3.7	402	100.0

This question is asked to determine if respondents think they could influence private industry decisions, such as the location of this facility. Overwhelmingly, the majority (73.8%) believe they can have an

affect on private industry, while 22.3% feel they do not. It is interesting to note that while 73.8% believe they could influence the decisions of private industry, nearly 82% respondents have never attended a meeting pertaining to medical waste and/or environmental issues.

- 4) Questions 10-13, 17-22 and 29 characterize which uncertainties and/or issues about medical waste treatment/disposal most concern the public. (Questions 14-16 also provide additional concerns and are discussed below.

IF PLANT BUILT, WHAT ABOUT HEALTH

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	184	45.8	184	45.8
CONCERNED	163	40.5	347	86.3
UNCONCERNED	40	10.0	387	96.3
STR UNCONCERNED	2	0.5	389	96.8
NOT SURE/UNDEC	13	3.2	402	100.0

Questions 10-16 are asked to obtain community concerns for this facility. The following set of questions (Q's 17-22) are asked as an internal consistency check because they ask about specific effects expected to occur if this plant were built. Results will be compared below.

Question 10 asks about the respondents concern for their health if this plant were built. Most respondents, 86.3%, are concerned about their health if this medical waste treatment plant were built in Hall County, whereas 10.5% were unconcerned. Overwhelmingly, most participants would be strongly concerned about their health if this facility were built.

IF PLANT BUILT, WHAT ABOUT RES PROP VALUE

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	150	37.3	150	37.3
CONCERNED	167	41.5	317	78.9
UNCONCERNED	65	16.2	382	95.0
STR UNCONCERNED	4	1.0	386	96.0
NOT SURE/UNDEC	16	4.0	402	100.0

This question is asked to determine if respondents are concerned for property values if this plant were built. About 79% are concerned and 17.2% are unconcerned about property values. Since 85% of those surveyed are homeowners, one would expect a greater portion of the respondents to be concerned about possible factors affecting property value. More respondents in Q 10 (86.3%) appear to be concerned about possible health effects, compared to only 79% that are concerned for property values (Q11).

IF PLANT BUILT, WHAT ABOUT ENVR EFFECTS

Q12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	188	46.8	188	46.8
CONCERNED	157	39.1	345	85.8
UNCONCERNED	43	10.7	388	96.5
NOT SURE/UNDEC	14	3.5	402	100.0

Regarding environmental effects, 75.9% of those interviewed would be concerned and 10.7% would be not be concerned if this plant were built. Although the majority of respondents are highly concerned about possible environmental effects this plant may contribute to, more respondents appear concerned about possible health effects (Q10--86.3 %) and property value effects (Q11--78.8%), as compared to this question, Q12.

IF PLANT BUILT, WHAT ABOUT LOSS OF LOCAL JOBS

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	86	21.4	86	21.4
CONCERNED	112	27.9	198	49.3
UNCONCERNED	137	34.1	335	83.3
STR UNCONCERNED	5	1.2	340	84.6
NOT SURE/UNDEC	62	15.4	402	100.0

This question is asked to determine if respondents are concerned about possible loss of local jobs, if this plant were built. Approximately 49% are concerned and about 35% are unconcerned about loss of jobs. In

summary, more respondents appear to be concerned about possible health effects (86.3%), property values (78.8%), and environmental effects (75.9%), as compared to this issue, loss of jobs (49.3%). Other issues that illicit strong concern from respondents, although not discussed under this objective, include proper transportation of medical waste (Q16--86.1%), proper government inspections (Q14--82.8%), and proper operation of these facilities (Q15--78.1%). (Issues concerning transportation of medical waste, proper operation of the plant, and proper and timely governmental inspections are first discussed under objective 5, since they are more related to that objective. However, they are displayed here as a comparison to other general concerns.)

TRT PLANT WOULD NOT AFFECT MY HEALTH

Q17	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	2	0.5	2	0.5
AGREE	76	18.9	78	19.4
DISAGREE	131	32.6	209	52.0
STR DISAGREE	95	23.6	304	75.6
NOT SURE/UNDEC	98	24.4	402	100.0

As previously discussed, Questions 10-16 are asked to obtain ideas about community concerns for this facility, whereas these questions (Q's 17-22) ask about specific effects expected to occur if this plant were built, therefore Questions 17-22 are an internal consistency check. The results indicate that 56.2% believe this treatment plant would affect their health and 19.4% believe it would not; 24.4% are unsure about health effects that could occur due to the presence of this plant.

Compared to results from Q10 above, 86% are concerned about health effects from this facility, whereas 10% are not. Thus, although 86% would be concerned about this plant, only 56% believe the plant would adversely affect their health, if built. There were also more respondents (24.4% compared to 3%) who are undecided to this question, as compared to its

counter-question, Q12, thus indicating that residents acknowledge their concern but are unsure about possible health effects associated with these plants. Verbal responses from respondents at the end of the survey indicate they desire to learn more about incineration and its possible risks. In glancing at the articles provided in Appendix 8, there seem to be a lot of community concerns that the facility hasn't adequately addressed. For instance, in the article titled "THE REAL ENVIRONMENTAL QUESTIONS," one author clearly spells out her concerns. Two other articles with similar concerns (also provided in Appendix 8) are "WE NEED MORE FACTS BEFORE MAKING DECISION" and "HOW TO HANDLE."

TRT PLANT WOULD NOT POLLUTE ENVIRONMENT

Q18	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	3	0.7	3	0.7
AGREE	60	14.9	63	15.7
DISAGREE	159	39.6	222	55.2
STR DISAGREE	97	24.1	319	79.4
NOT SURE/UNDEC	83	20.6	402	100.0

Concerning environmental effects, 63.7% believe this treatment plant will pollute the environment and 15.6% believe it will not; 20.6% are unsure. Results from question 12 above indicate 75.9% are concerned about environmental effects from this plant and 3.5% are not, if this plant were built. In comparison, just 63.7% believe that the plant would affect their environment, although nearly 76% are concerned that this plant will pollute the environment. In addition, there are more respondents (20.6% compared to 3.5%) who are undecided about this type of question, thus indicating that more education about these types of facilities (through increased communication) are warranted.

TRT PLANT WOULD INCREASE LOCAL PROP VALUES

Q19	Frequency	Percent	Cumulative Frequency	Cumulative Percent
AGREE	15	3.7	15	3.7
DISAGREE	220	54.7	235	58.5
STR DISAGREE	122	30.3	357	88.8
NOT SURE/UNDEC	45	11.2	402	100.0

Concerning local property values, 85% believe this treatment plant will not increase local property values, whereas 3.7% believe it will. Results from question 11 and this question (Q19) indicate, respectively, 78.8% are concerned about property values but only 3.7% think this plant will increase local property values. About 85% believe either that this plant will decrease or will not affect local property values.

TRT PLANT WOULD NOT DECREASE NATURAL BEAUTY

Q20	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	4	1.0	4	1.0
AGREE	131	32.6	135	33.6
DISAGREE	133	33.1	268	66.7
STR DISAGREE	59	14.7	327	81.3
NOT SURE/UNDEC	75	18.7	402	100.0

Relating to aesthetics, this question is asked to discover if respondents believe this plant will adversely affect the natural surroundings of Hall County. More respondents (47.8%) think this plant would detract from the county's overall natural beauty; 33.6% believe the plant would not, and 18.7% are undecided.

TRT PLANT WOULD HELP CREATE MORE JOBS

Q21	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	5	1.2	5	1.2
AGREE	185	46.0	190	47.3
DISAGREE	100	24.9	290	72.1
STR DISAGREE	28	7.0	318	79.1
NOT SURE/UNDEC	84	20.9	402	100.0

This question is asked to determine if respondents think this plant will create more jobs for the county. More respondents (47.2%) recognize this plant will create more jobs, but 31.9% feel that it will not. Some respondents are undecided about this issue (20.9%). Compared to question 13, 49% of the respondents are concerned about the possibility of loss of jobs due to this plant, but about the same number respondents think the plant will create more jobs.

The high number of respondents concerned about loss of jobs may feel this way in general, since a recession was occurring during the time of the survey. From verbal responses to these questions after the survey was completed, quite a few of respondents feel the people managing the plant would bring in their own managerial people and then hire for nonmanagerial positions from the county. At any rate, many respondents made the comment that even if the plant did hire from the county, it would not be enough to make a big difference.

TRT PLANT WILL ENCOURAGE BUSINESS/DEVELOPMENT

Q22	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	2	0.5	2	0.5
AGREE	81	20.1	83	20.6
DISAGREE	174	43.3	257	63.9
STR DISAGREE	37	9.2	294	73.1
NOT SURE/UNDEC	108	26.9	402	100.0

Questions 13, 21, and 22 (this one) are related in that they are asking

about perceived economic impacts of this facility on the county. While 47.2% of the respondents feel this plant will create more jobs in the county (31.9% did not), a larger portion feel (52.5%) this plant would not encourage business and or development (20.6% feel it would). There obviously is not a lot community consensus on this issue; there are many different opinions. Similarly, some respondents feel this plant would not create more jobs (31.9%), compared to those who feel the plant would encourage business and or development (20.6%). There also were more individuals who were undecided (26.9%) about the plant encouraging more business, than creating more jobs.

MED WASTE CAN BE TRANSPORTED W/NO HEALTH PROBLEMS

Q29	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	3	0.7	3	0.7
AGREE	133	33.1	136	33.8
DISAGREE	111	27.6	247	61.4
STR DISAGREE	31	7.7	278	69.2
NOT SURE/UNDEC	124	30.8	402	100.0

This question asks about the safety of transportation of medical waste through communities to treatment plants. Some respondents (35%) think medical waste cannot be transported without adverse health effects, 34% reply that it can; 31% are undecided. A large majority of respondents in Q14 (86.1%) are concerned about the proper shipping of medical waste; however, only 34% of the respondents believe medical waste cannot be shipped without producing adverse health effects. Conversations with respondents after the survey was completed indicate that even those people somewhat accepting of the facility register concern about the transportation of untreated wastes through communities.

In summary, more respondents believe the plant will either decrease or not affect property values (85%), pollute the environment (63.7%), adversely

affect their health (56.2%), and encourage business and/or development (52.5%), as compared to the believing the plant would detract from the natural beauty of Hall County (47.8%), believing it would create more jobs (47.2%), and thinking medical waste cannot be transported without adverse health effects (35.3%).

- 5) Questions 14-16, 23, 27, and 28 identify concerns or attitudes reflected toward environmental groups, private industry, and federal and state officials involved in the siting process.

IF PLANT BUILT, WHAT ABOUT GOV'T INSPECT

Q14	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	205	51.0	205	51.0
CONCERNED	128	31.8	333	82.8
UNCONCERNED	44	10.9	377	93.8
STR UNCONCERNED	2	0.5	379	94.3
NOT SURE/UNDEC	23	5.7	402	100.0

This question is asked to determine attitudes reflected towards inspectors of these plant and also about the adequacy of the current standards. If this plant were built, the majority of respondents, 82.8% are concerned about inspections that should occur to maintain proper operation. Only 11.4 are unconcerned and 5.7 are undecided.

IF PLANT BUILT, WHAT ABOUT PROPER OPERATION

Q15	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	161	40.0	161	40.0
CONCERNED	153	38.1	314	78.1
UNCONCERNED	52	12.9	366	91.0
STR UNCONCERNED	3	0.7	369	91.8
NOT SURE/UNDEC	33	8.2	402	100.0

The question of proper operation of the plant, if built, is asked to determine attitudes reflected toward those managing these plants. Exactly 78.1% are concerned about inadequate operation, 13.6 are unconcerned, and

8.2% are unsure.

IF PLANT BUILT, WHAT ABOUT PROPER SHIPPING

Q16	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	217	54.0	217	54.0
CONCERNED	129	32.1	346	86.1
UNCONCERNED	38	9.5	384	95.5
STR UNCONCERNED	1	0.2	385	95.8
NOT SURE/UNDEC	17	4.2	402	100.0

Concerning proper transportation, results indicate that 86.1% of the respondents are concerned that this is not occurring, 9.7% were unconcerned, and 4.2% were undecided that proper shipping would occur.

ST. GOV'T IS DOING ITS BEST TO MANAGE MED WASTE

Q23	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	5	1.2	5	1.2
AGREE	116	28.9	121	30.1
DISAGREE	99	24.6	220	54.7
STR DISAGREE	31	7.7	251	62.4
NOT SURE/UNDEC	151	37.6	402	100.0

There appears to be less of a consensus on this issue as compared to the other issues relating to proper transportation and operation. More respondents are undecided (37.6%) about this issue; there does not seem to be a consensus from the community. Some individuals (30.1%) think state government is doing its best to manage medical waste, while others have no opinion (32.3%).

PRIVATE INDUSTRY CAN SAFELY OPERATE PLANT

Q27	Frequency	Percent	Cumulative Frequency	Cumulative Percent
AGREE	155	38.6	155	38.6
DISAGREE	94	23.4	249	61.9
STR DISAGREE	20	5.0	269	66.9
NOT SURE/UNDEC	133	33.1	402	100.0

This question is included on the survey to determine attitudes toward private industry and their ability to safely operate medical waste incinerators. Most of the respondents say they can (38.6%), 28.4% say they cannot, and 33.1% are unsure. Following the questions on this survey, respondents also had many comments about this question. There is not a question in people's minds that private industry CAN operate these type of facilities safely, but WILL they? The public does not seem to have much trust for these industrial operators, due to the huge amounts of profit these facilities are believed to make and past operators that have evaded regulations concerning inspections and adequate protection for workers.

IF ENV GROUPS APPROVE, I DO TOO

Q28	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	11	2.7	11	2.7
AGREE	222	55.2	233	58.0
DISAGREE	86	21.4	319	79.4
STR DISAGREE	19	4.7	338	84.1
NOT SURE/UNDEC	64	15.9	402	100.0

Concerning environmental groups, this question is asked to determine how much credibility the public gives environmental group(s). Most participants (57.9%) indicate they would be more willing to approve of the facility if environmental groups approved of this facility. About 26% wouldn't approve of this facility even in light of approval by environmental groups, and 15.9% were not sure how they would answer this question.

- 6) Questions 38 and 39 evaluate general public awareness of the components and generators of medical waste.

DISP OF PLAS RESRCH CONTAINERS AS MED WASTE

Q38X1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	298	74.1	298	74.1
NO	21	5.2	319	79.4
NOT SURE/UNDEC	83	20.6	402	100.0

DISP OF ADMIN PAPERS AS MED WASTE

Q38X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	54	13.4	54	13.4
NO	315	78.4	369	91.8
NOT SURE/UNDEC	33	8.2	402	100.0

DISP OF SURG GLOVES AS MED WASTE

Q38X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	381	94.8	381	94.8
NO	10	2.5	391	97.3
NOT SURE/UNDEC	11	2.7	402	100.0

DISP OF RES CADAVERS AS MED WASTE

Q38X4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	359	89.3	359	89.3
NO	22	5.5	381	94.8
NOT SURE/UNDEC	21	5.2	402	100.0

Questions 38X1 - 38X4 are asked to identify what type of wastes comprise medical waste. The responses to these questions show that generally the public is generally aware of the components and generators of medical waste. For instance, 74.1% of the respondents think "research containers"

are medical waste, 94.8% believed surgical gloves are medical waste, and 89.3% believe "research cadavers" are another component of medical waste. Most individuals (78.4%) did not believe "administrative papers" are medical waste.

DO HOSPITALS GENERATE MED WASTE

Q39X1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	393	97.8	393	97.8
NOT SURE/UNDEC	9	2.2	402	100.0

DO PRIV DENTAL PRACT GENERATE MED WASTE

Q39X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	350	87.1	350	87.1
NO	17	4.2	367	91.3
NOT SURE/UNDEC	35	8.7	402	100.0

DO MED RES LABS GENERATE MED WASTE

Q39X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	376	93.5	376	93.5
NO	5	1.2	381	94.8
NOT SURE/UNDEC	21	5.2	402	100.0

DO DRY CLEANERS GENERATE MED WASTE

Q39X4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	81	20.1	81	20.1
NO	209	52.0	290	72.1
NOT SURE/UNDEC	112	27.9	402	100.0

DO PRIV MED CLINICS GENERATE MED WASTE

Q39X5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	378	94.0	378	94.0
NO	5	1.2	383	95.3
NOT SURE/UNDEC	19	4.7	402	100.0

Questions 39X1-39X5 are asked to determine if the public is aware of types of businesses that generate medical waste. Of these questions, "hospitals", "medical research laboratories", "private medical clinics", and "private dental practices" are readily identified as generators of medical waste (87.1%, 93.5%, 94%, and 87.1%, respectively). About 79% realize "administrative papers" are not medical waste, and about half of the respondents believe "dry cleaners" generate medical waste, so there appears to be some confusion about what type of waste dry cleaners produce.

- 7) Questions 30-34 determine existing attitudes toward some types of compensation.

MIGHT ACCEPT PLANT IF IT ONLY HANDLES GA WASTE

Q30	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	27	6.7	27	6.7
AGREE	221	55.0	248	61.7
DISAGREE	95	23.6	343	85.3
STR DISAGREE	16	4.0	359	89.3
NOT SURE/UNDEC	43	10.7	402	100.0

Nearly 62% of the participants indicate they might accept the facility if it only treated medical waste generated in Georgia. About 28% reply they still would not want the facility for Hall County, and almost 11% are unsure about how they feel. This seems to mean that the host community is more willing to accept responsibility for the state's waste, but not waste from other states.

HOW CLOSE WOULD YOU LIVE & STILL FEEL SAFE

Q31	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 MILE AWAY	37	9.2	37	9.2
10 MILES AWAY	92	22.9	129	32.1
30 MILES AWAY	63	15.7	192	47.8
50 MILES AWAY	24	6.0	216	53.7
>50 MILES AWAY	136	33.8	352	87.6
NOT SURE/UNDEC	50	12.4	402	100.0

Although there does not appear to be a clear consensus on this issue, most individuals (87.6%) reply that being located greater than 50 miles from the facility would make them feel safe. The next two favored responses are 30 miles away (47.8%), followed by 10 miles away (32.1%). Therefore, the two favored responses would be between 30 and 50 miles away. There are 50 persons who do not have an opinion (12.4%).

WANT PLANT IF PRIV INDUSTRY IMPROVED ROADS

Q32	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	83	20.6	83	20.6
NO	169	42.0	252	62.7
NOT SURE/UNDEC	150	37.3	402	100.0

These next set of questions are used to determine attitudes toward different methods of compensation. Most respondents (42%) indicate that compensation would not affect their decision about the facility. About 20% say they would accept the plant if improved roads were also given to the community by private industry, and almost 38% are unsure, but this may be due to misunderstanding of the question. It is interesting to note that as respondents answered questions 32-33, those that are unsure about their opinion kept decreasing, which might mean that by question 33, they better understood the meaning of each question.

WANT PLANT IF PRIV IND PROV PROP TO AFFECTED RES

Q33	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	143	35.6	143	35.6
NO	148	36.8	291	72.4
NOT SURE/UNDEC	111	27.6	402	100.0

Concerning this form of compensation, nearly 36% of those surveyed indicate they would be more willing to accept the facility if private industry provided property to residents immediately affected by the siting of the facility (i.e., those owning property immediately at the edge of the facility). About the same percentage of respondents do not accept the facility even if property were provided to those residents affected by this plant. About 28% are unsure.

WANT PLANT IF PRIV IND WOULD BUILD/IMPROVE PARKS

Q34	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	99	24.6	99	24.6
NO	195	48.5	294	73.1
NOT SURE/UNDEC	108	26.9	402	100.0

Almost half of the participants (48.5%) do not want the facility, even if the siting facility officials would invest money into building and improving parks. From verbal responses, many respondents did not approve of these questions and many feel these compensation questions are a form of bribery by "buying off" people in the community. One respondent thinks the money for these "compensation projects" should go toward making the plant safer, such as better emission controls and emergency response plans.

- 8) Questions 24, 25, and 35 classify opinions toward types of treatment methods.

INCINERATOR IS GOOD WAY TO MANAGE MED WASTE

Q24	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	14	3.5	14	3.5
AGREE	178	44.3	192	47.8
DISAGREE	41	10.2	233	58.0
STR DISAGREE	12	3.0	245	60.9
NOT SURE/UNDEC	157	39.1	402	100.0

Most respondents (47.8%) recognize an incinerator is a good way to manage medical waste, while only 13.2% disagree. A rather large number of respondents, 40%, are undecided about this type of treatment for medical waste, which is almost as many as those who feel incinerators were a good way to manage medical waste. The responses to these questions indicate that this type of treatment is not well understood.

INCIN. IS BETTER THAN A LANDFILL FOR MED WASTE

Q25	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	43	10.7	43	10.7
AGREE	235	58.5	278	69.2
DISAGREE	17	4.2	295	73.4
STR DISAGREE	5	1.2	300	74.6
NOT SURE/UNDEC	102	25.4	402	100.0

While nearly 70% think an incinerator is a better way to manage medical waste than a landfill, 5.4% feel it is not. It seems that many of the respondents feel that incinerating the waste is a better alternative than landfilling it. From verbal responses to these questions after surveys were completed, there seems to be a quite a few participants who would like to know more about these technologies. Many respondents are unsure about opinions toward either process, but wanted to know more about other types of treatment methods and their advantages and disadvantages, or the risks associated with both technologies.

These next set of questions (Q35X1 - 35X13) are used to ascertain from citizens how we should be managing our medical waste. Below, Table 6 summarizes the frequency and percent of respondents who chose which option(s). This data is provided in table form for ease of understanding. Most respondents (52.5%) feel Georgia should "work first to reduce" the amount of medical waste we generate. Others believe the state of Georgia should "hold a vote" (43.5%) on locating it in Gainesville, and the next three favored responses were "other" (27.6%), "build the plant as soon as possible" (14.9%) , and "each county should be responsible for their medical waste" (13.2%). The other category evokes many responses, notably the following:

1. "We can't reduce all of the medical waste we have."
2. "Compensation has no bearing on the safe operation of these plants."
3. "Treat the waste on site; this will eliminate the need for massive transportation." "Main concern is transportation."
4. "We shouldn't accept waste from other states."
5. "It's easy to disagree, it's hard to come up with a solution."
6. "They shouldn't rush into building a plant, we don't know enough yet."
7. "Why is it a problem now? Each hospital incinerated its own waste and it stayed controlled."
8. "The government can't do anything right, and private industry is only out to make money."
9. "The siting company tried to sneak the plant into Hall County."
10. "Main concern is operation/monitoring standards and actual conditions at the site."
11. "Ensure the public of its safety."
12. "There is a need to show the past track record as evidence of management of past facilities."
13. "Fund a study for future reduction of medical waste." "We need research to improve technology." "Need to look seriously at alternatives, more biodegradable products are needed." "Need non-biased groups to conduct studies."

SUMMARY OF RESPONSES TO QUESTIONS 35X1 - 35X13

Table 6:

QUESTION	POSSIBLE RESPONSES	FREQUENCY	PERCENT
Work First To Reduce	YES	211	52.5
	NO	191	47.5
Hold Vote	YES	175	43.5
	NO	227	56.5
Other	YES	111	27.6
	NO	291	72.4
Build As Soon As Possible	YES	60	14.9
	NO	342	85.1
Each County Should Be Responsible	YES	53	13.2
	NO	349	86.8
Plant OK If Inspected Properly	YES	49	12.2
	NO	353	87.8
Build In More Isolated Area	YES	43	10.7
	NO	359	89.3
More Education Is Needed	YES	37	9.2
	NO	365	90.8
Utilize Existing Facilities	YES	26	6.5
	NO	376	93.5
Each State Should Be Responsible	YES	19	4.7
	NO	383	95.3
No Opinion	YES	12	3.0
	NO	390	97.0
Enforce Stringent Penalties	YES	5	1.2
	NO	397	98.8
Compensation Would Help	YES	4	1.0
	NO	398	99.0

14. "To burn is better than to bury."
15. "Give out booklets to inform public about facility before a state vote." "Sittings are handled poorly, education is needed."
16. "The media is not always informative." "We need informed opinions from the media."
17. "These facilities should be open to the public."
18. "EPD, EPA are swayed by public opinion, the public is not educated, and their fears and hysteria are unfounded."
19. "It's the fault of the people seeking the medical waste facility to educate the public." "Need clear presentation of what safety controls exist."
20. "These facilities are not inspected enough."
21. "I'm not a NIMBY person."
22. "People are opposed to change and are afraid of AIDS."
23. "I have more faith in private industry." "The government is more answerable for its mistakes."
24. "The biggest problem is untrained personnel in incineration." "Hire chemical engineers to run the plant."
25. "It would be worse for the environment if we didn't have a facility."
26. "The state needs it, but NIMBY for my county."

These responses mostly indicate the fear associated with the items that comprise medical waste and the public's desire and need for information about its management. (These types of concerns are also evident in the articles from *The Times* in Appendix 8.) Along with these responses, other survey participants feel Georgia needs to "properly inspect these facilities" (12.2%), "build in a more isolated area" (10.7%), "educate the public" (9.2%), and "utilize existing facilities" (6.5%). Some of the least favored responses were the following: "each state should be responsible for their own waste" (4.7%) and "enforce stringent penalties" (1.2%); only a few individuals (1%) thought compensation would help. About 3% had no opinion about what Georgia should do about its medical waste.

- 9) Questions 36 and 37 determine public awareness of possible consequences of not building this facility.

WILL NO PLANT INCREASE MEDICAL COSTS

Q36	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DEFINITELY	124	30.8	124	30.8
MAYBE	138	34.3	262	65.2
NOT LIKELY	76	18.9	338	84.1
DEFINITELY NOT	22	5.5	360	89.6
NOT SURE/UNDEC	42	10.4	402	100.0

WILL NO PLANT INCREASE ILLEGAL DUMPING

Q37	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DEFINITELY	96	23.9	96	23.9
MAYBE	147	36.6	243	60.4
NOT LIKELY	71	17.7	314	78.1
DEFINITELY NOT	21	5.2	335	83.3
NOT SURE/UNDEC	67	16.7	402	100.0

Questions 36 and 37 are asked of respondents to determine what effects they think may occur if the plant is not built. For the most part, the responses are almost identical. Most respondents think that not building the plant "may" result in increased medical costs (34.3%) and illegal dumping (36.6%); the next favored responses are, respectively, "definitely" (30.8% compared to 23.9%), "not likely" (18.9% compared to 17.7%), "undecided" (10.4% compared to 16.7%) and "definitely not" (5.5% compared to 5.2%). However, some respondents acknowledge, from verbal comments to the survey, that these events may occur anyway.

Summary of Univariate Analysis

The analysis of data indicate the following:

- 1) Although a large majority of respondents (58%) acknowledge the need for this proposed facility, half of the respondents (50%)

are opposed, 28.4% are undecided, and 21.6% are in favor of the proposed medical waste incinerator.

- 2) A vast majority of respondents (84%) remember the newspaper as the source of information from which they heard about the plant; of these respondents, most feel it is unbiased and has the most influence on their opinion. Two other important sources may be the radio (34.9%) and friends or neighbors (21.9%).
- 3) Nearly 82% of those interviewed have never attended a meeting pertaining to medical waste or other environmental issues, but an overwhelming majority (73.8%) believe they can influence private industry's decisions.
- 4) If this plant were built, respondents would be concerned about potential health effects (86.3%), transportation of medical waste (86.1%), inspections (82.8%), residential property values (78.8%), environmental effects (75.9%), operation of these facilities (78.1%), and the loss of local jobs (49%). As an internal check, specific questions find that 56.2% think the treatment/disposal would affect their health, 63.7% believe the plant would pollute the environment, 47.8% feel it would detract from the natural beauty of Hall County, 52.5% think it would not encourage business or development, and 35% feel medical waste could not be transported without adverse health effects.
- 5) Most respondents (37.6%) are undecided about the adequacy of the state's current/past management of medical waste, however, 38.6% believe private industry can safely (have the

technology) operate these facilities. In addition, most participants (57.9%) indicate they would be more willing to approve of the facility if environmental groups approved of the plant.

- 6) Although there does appear to be some confusion about the type of waste that dry cleaners generate (nearly half of the respondents indicate that dry cleaners generate medical waste), most respondents readily recognize various components and generators of medical waste.
- 7) Nearly 62% of the respondents indicate they might accept the facility if it only treated medical waste from the state (Georgia). Most respondents (87.6%) think that a safe distance from the proposed plant would be 50 miles; 30 miles is the next favored response (47.8%). For questions (30-34) involving types of compensation (which were improving roads, providing property to affected residents, and building or improving parks), most respondents would oppose those options.
- 8) While nearly 70% think incineration is better for managing medical waste than landfills, only 47.8% recognize that an incinerator is a good way to manage medical waste. However, most Hall County respondents feel Georgia should first work to reduce medical waste, followed by holding a vote (43.5%). About 30% want to build a treatment plant as soon as possible.
- 9) Most respondents believe there are some possible consequences of not building this facility, namely the increase of medical costs and illegal dumping.

Hypotheses of Bivariate Analysis (Cross-Tabulations)

Given the exploratory nature of this survey, several hypotheses relating to opposition/acceptance to the facility were tested. The following respondents were expected to be more opposed to the facility:

- 1) Those who have already heard about the facility;
- 2) Residing in Gainesville;
- 3) Women;
- 4) Young and Middle Aged;
- 5) Blacks;
- 6) Professionals;
- 7) Households with Children;
- 8) College Education or Higher Education;
- 9) Middle and High Incomes; and
- 10) Homeowners.

Results of Bivariate Analysis

The following are the results of the cross-tabulations of the demographical factors (Q 1,2, S1-S8) with the Question 7 which asks whether the respondent is in favor or opposition to the proposed medical waste incinerator in Hall County.

Have Heard About It

- * Those who have already heard about the plant are more opposed.
($p= 0.000$); (Cramer's $V= 0.358$; moderate association)

Community

- * Community residence has no significant effect on favoring or opposing the proposed plant.

Gender

- * Women are more opposed. (p= 0.099); (Cramer's V= 0.139; weak association)

Age

- * Younger ages are more opposed. (p= 0.002); (Cramer's V= 0.164; weak association)

Race

- * Race does not appear to be related to favoring or opposing the plant.

Occupation

- * Housewives and Students are more opposed. (p= 0.038); (Cramer's V= 0.241; weak association)

Households With Children

- * Having children in one's household does not appear to be related to favoring or opposing to the proposed plant.

Education

- * Education does not appear to be related to favoring or opposing the proposed plant.

Income

- * Income has no significant effect on favoring or opposing the plant.

Homeowner/Renter

- * Renters are more opposed to the proposed plant. (p= 0.016); (Cramer's V= 0.174; weak association)

Summary of Bivariate Analysis

Thus, those respondents found to be more opposed to the proposed facility are:

- 1) Those who have already heard about the plant,
- 2) Women,
- 3) Younger ages,
- 4) Housewives and Students, and
- 5) Renters.

PARCHMENT DEED

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CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The results of this study will be used in conjunction with previous risk perception studies to determine how to improve the siting strategy for medical waste incinerators and other such projects.

The analysis of data indicate that Hall County respondents:

1. acknowledge the need for a medical waste incinerator in Georgia, but would oppose the facility for Hall County;
2. perceive the newspaper to be the primary source of information about the plant; of these respondents, most feel it is unbiased and has the most influence on their opinion; data also indicate other important sources may include the radio and friends/neighbors;
3. indicate they have not been involved in public meetings pertaining to medical waste or environmental issues, but feel they could have an influence on private industry's decisions;
4. would be concerned about potential health effects, residential property values, proper inspections and operation of the proposed plant, environmental effects, transportation of medical waste, and the loss of local jobs; if plant was built, they also feel the treatment/disposal plant would affect their health, pollute the environment, detract from the natural beauty of Hall County, wouldn't encourage business or development, and medical waste could not be transported without adverse health effects;
5. are undecided about the adequacy of the state's current/past management of medical waste, believe private industry can safely

(have the technology) operate these facilities, and indicate they would be more willing to approve of the facility if environmental groups approved of the plant;

6. are generally aware of the various components and generators of medical waste;
7. indicate they might accept the facility if it only treated medical waste from the state (Georgia), think that a distance between 30 and 50 miles would be a safe distance from the proposed plant to their residence, and would oppose compensation;
8. think incineration is a good way to manage medical waste, but believe Georgia should first work to reduce medical waste,
9. believe that medical costs and illegal dumping may increase if this facility is not built.

In addition, respondents found to be more opposed to the proposed facility tend to be:

- 1) Those who have already heard about the plant,
- 2) Women,
- 3) Younger ages,
- 4) Housewives and Students, and
- 4) Renters.

Recommendations for Improving Siting Strategies

Although Amaral et. al. (1990), Susskind (1990), and Hance, Chess, and Sandman (1989) have provided invaluable insight into improving siting strategies for projects related to siting treatment and disposal facilities, this thesis has validated as well as created additional

recommendations.

1. Local governments/siting commissions and other such siting officials need to involve the public (the host community) in early stages of the siting process to help foster trust. Specifically, siting officials need to target those individuals most likely to oppose such projects (identified by this study and several others previously discussed), possibly using some of these individuals to comprise a citizen advisory board to help communications and/or negotiations with the community. Research has shown that increased knowledge will give one a feeling of more control over risks.

2. Improved risk communication skills of those involved in the siting process, especially communication addressing the perceived risks of the public, are badly needed when communicating with the public. An excellent source, discussed earlier in the literature review, is a risk manual which was written for the government and is entitled "Improving Dialogue with Communities: A Risk Communication Manual for Government" (Hance, et. al., 1988). This manual could be used for yearly courses to help siting officials (including private industry, federal and state officials) better involve and explain risks to potential host communities. Important concerns to address include health, environmental, economic, and aesthetic issues discussed in the conclusions section as well as concerns voiced in the articles taken from *The Times* (Appendix 8).

3. Early in the siting process, states and local governments need to target the populations most likely to oppose the facility and involve them in the siting process. Since most respondents tend to place quite a bit of confidence in environmental groups, they should be involved very early in the siting process and possibly utilized to gather community concerns.

4. Since the newspaper and radio appear to be important sources of information, these media should be used to announce community meetings for such projects and disseminate information from those involved in the siting process. Community concerns involving health, environmental, economic, and aesthetic issues could be addressed in these media, although this method of communication should never replace direct discussions with the community either through public meetings or small gatherings.

Another alternative is to have a general meeting with the community first and then later break into smaller informational meetings used to generate concerns from the community that the siting officials will need to address. Siting personnel may also want to obtain community concerns from newspaper articles in the area proposed for the plant.

5. Conduct a survey to look into suitable areas for the location of a medical waste incinerator. One study could target medical waste incinerators currently operating to develop a economic profile as well as siting techniques which were used to locate the plant. Other questions could ascertain compensation techniques used, distances to the nearest residence, and the overall opinion of the facility.
6. Conduct a study to determine if such treatment/disposal facilities negatively affect the local economies of the host community. A starting point would be to compare small, rural communities to larger, urban communities possessing such medical waste incinerators.
7. Consider making each state responsible for the treatment/disposal of its own waste. States that couldn't financially support an

incinerator could form regional pacts with other states. This will ensure that each state/states in a region are taking responsibility for adequately treating and disposing of such waste and giving them a reason to find ways to reduce/reclaim these wastes.

8. Although compensation has been shown to enhance negotiations between the siting party and the host community, it should never replace communications with the public. Again, Hawthorne (1988) has suggested that compensation measures tend to be mostly used in urban areas, so this may not be appropriate for small, rural communities.
9. The United States Environmental Protection Agency need to evaluate the Medical Waste Tracking Act of 1988 and present the findings (they were directed by Congress to complete this task in 1991). These results are needed to identify problems with the tracking system.
10. Future studies should only focus on meeting three to four objectives; this survey had nine which was too much material for a telephone survey. This would shorten the survey length and the amount of time needed to complete each survey. I would also increase the interviewing staff and would eliminate Question 36 and 37 because these will occur whether or not the facility is built.

In summary, involving the public early in the siting process through increased education/communication, using the media to increase the public's knowledge about medical waste treatment technologies and risks, enforcing environmental regulations, and funding ideas on reduction/reuse of medical waste will help to foster credibility of the siting process and those involved and, in the long term, help facilitate the siting process.

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APPENDICES

PARCHMENT DEED

SOUTHWOORTH CO. U.S.A.

100% COTTON FIBER

APPENDIX 1:

Populations Involved With Medical Waste

Populations potentially involved with medical waste can be divided into three broad categories: health care providers and workers, waste handlers, and the general public. These three categories are further divided into occupation subgroups and are discussed below (Lichtveld, et. al., 1990).

Human Health Care Providers and Workers:**Human Health Care Providers and Workers**

This category includes health care providers involved in direct patient care-- such as physicians, dentists, and nurses--engaged in an individual or group practice or working in a hospital or nursing care facility. The term "hospital" means general, surgical, and other specialty hospitals. This group also incorporates persons that work in medical or dental laboratories or other allied health professional settings, including blood banks and blood donor stations. Groups within this category are human health care providers and workers, laboratory workers, laundry workers, in-home health care providers, emergency response personnel, morticians, and veterinarians and animal care workers. Table 7 has further information about this category.

Laboratory Workers

In 1985, about 200,000 laboratory workers were employed in private diagnostic and dental laboratories. However, this estimate does not include research laboratories, publicly supported clinics and hospitals, or university-based research facilities. Hospitals employ approximately 250,200 laboratory workers.

Laundry Workers

Laundry workers clean dirty linen produced in hospitals, clinics, laboratories, and private health care facilities. The number of laundry workers employed solely in hospitals is not readily available, because these employees are normally included in the janitorial staff. The private sector employed approximately 484,000 people in this occupational subgroup during 1987.

In-Home Health Care Providers

This group includes visiting nurses, physical therapists, and related personnel who treat patients at home or in a hospice. Persons treated in these settings suffer from a broad range of diseases, including renal failure, diabetes, disorders of the cardiovascular system and respiratory tract, cancer, and AIDS. In-home health care providers' duties include maintaining life-support devices, administering drugs, and changing dressings. No estimates are available concerning the number of workers in this group.

Emergency Response Personnel

These workers respond to emergency situations such as chemical spills, natural disasters, and medical emergencies. Of these, emergency medical personnel have the greatest chance of contacting medical waste. The National Safety Council (NSC) approximates 400,000 emergency medical personnel in the United States.

HUMAN HEALTH CARE PROVIDERS

Table 7:

OCCUPATION SUBGROUP	LICENSED	HOSPITALS	DENTAL FACILITIES
Physicians	773,300	---	---
Registered Nurses	2,365,700	841,400	---
Licensed Practical Nurses	924,200	201,200	---
Dentists	187,100	---	126,000
Dental Assistants	---	---	181,000
Physicians/Dentists/Interns	---	131,300	---

Source: "The Public Health Implications of Medical Waste: A Report to Congress" (Lichtveld, et. al., 1990)

Morticians

As of 1987, there were 73,000 individuals working in establishments primarily engaged in preparing corpses for burial, conducting funerals, and cremating bodies. The vast majority in this occupational subgroup are morticians. The procedure of embalming involves removing the body's blood and replacing it with a preservative/restorative solution. Removed blood is routinely disposed of through the sanitary sewer system.

Veterinarians and Animal Care Workers

The group includes veterinarians involved in the practice of veterinary medicine, surgery, and dentistry for livestock and pets. Also included in this group are animal care technicians assisting veterinarians in private practice or in animal hospitals. As of July 1989, the American Veterinary Medical Association (AVMA) reported 63,300 veterinarians and 10,000 animal technicians in the United States.

Waste Handlers:

Members in this category normally are responsible for segregation, handling, and storage of medical waste. Groups within this category include janitorial workers, refuse workers, wastewater workers,

maintenance plant operators and repair workers, and waste site clean-up (remedial) workers.

Janitorial Workers

The duties of janitorial workers includes cleaning and waste collection primarily within hospitals, clinics, and doctors' offices. Approximately 281,500 janitorial and laundry workers are estimated to be employed in hospitals. In 1987, there were an estimated 3,382,000 janitorial workers in the private sector throughout the United States.

Refuse Workers

Workers in this group are those employed at public and private establishments primarily involved in waste collection and disposal by processing or destruction. Individuals in this category collect residential and industrial solid waste; work at landfills, transfer stations, and recycling centers; and operate incinerators. In 1987, 200,000 refuse workers were employed in the United States.

Wastewater Workers

These workers are employed in establishments primarily engaged in waste collection and disposal through a sanitary sewer system. Some medical waste (primarily blood, blood products, and other body fluids) is disposed of through the sanitary sewer system. In 1989, the Water Pollution Control Federation approximated that 75,000 persons are employed in this industry.

Hospital Engineers (Maintenance Plant Operators and Repair Workers)

This group of employees operates and repairs a variety of mechanical equipment including incinerators. It is estimated that approximately 198,100 building engineers are employed in facilities that generate medical waste. An estimated 675,000 building engineers worked in the

private sector in 1986.

Waste Site Clean-up (Remedial) Workers

These workers are usually involved in clean-up operations at hazardous chemical waste sites (for example, Superfund sites) that do not usually contain medical waste. However, medical waste has been found at a few hazardous chemical waste sites. The National Safety Council has approximated that 12,000 individuals are employed as waste site clean-up workers.

General Public:

Under normal circumstances, the population at large does not come in contact with medical waste unless it is generated through in-home health care and then improperly discarded. In addition, the public may encounter discarded needles generated by illegal intravenous drug use.

Lifeguards

Although this group is not included in the three major categories discussed previously, they may come in contact with medical waste while working at a pool, lake, or ocean beach, especially while performing clean-up duties. According to the National Safety Council, approximately 10,000 individuals are employed as lifeguards.

Postal Workers

Postal workers are another occupational group that might contact medical waste, which is infrequently sent through the regular mail system in the United States. According to the U.S. Postal Service, there were 785,000 postal workers at the end of fiscal year 1988.

APPENDIX 2:

Reviewers Of The Telephone Survey

<u>NAME/TITLE</u>	<u>AGENCY/ORGANIZATION/SCHOOL</u>
Dr. Al Turner, Envr. Mgt. & Prot.,	UNC School of Public Health
Dr. Don Fox, Envr. Mgt. & Prot.,	UNC School of Public Health
Dr. Pete Andrews, Envr. Mgt. & Prot.	UNC School of Public Health
Dr. Angell Beza, Statistician	UNC School of Public Health
Dr. Elmer Akin, Waste Mgt. Div.	U.S. EPA*
Betty Willis, Waste Mgt. Div.	U.S. EPA
Bruce Pruitt, Waste Mgt. Div.	U.S. EPA
Dr. Kevin Koporec, Waste Mgt. Div.	U.S. EPA
Becky Fox, Waste Mgt. Div.	U.S. EPA
Chuck Pietrosewicz, Reg. Rep.	ATSDR**
Bob Safay, Reg. Rep.	ATSDR
Wendy Kaye, Epidemiologist	ATSDR
Dr. Dick Levinson, Sociologist	Emory University
Dr. Nancy Thompson, Psychol./Epidem.	Emory University
Dr. Kathleen Minor, Health Educator	Emory University
Dr. John Richardson,	Emory University
Lil Smith	Research Triangle Institute
Gary Rush	Research Triangle Institute
Kay Nelson, Former Director,	Survey Research Center
Dr. Jack Martin,	Survey Research Center

* U.S. Environmental Protection Agency

** Agency for Toxic Substances and Disease Registry

APPENDIX 3:

Phone Service For Municipalities Of Hall County

AREA OF COVERAGE	NUMBER OF RESIDENCE LINES*	NUMBER OF BUSINESS LINES*	PERCENTAGE OF COVERAGE IN SERVING AREA
<u>Gainesville</u> includes: Gainesville Murrayville, New Holland, Chicopee, Cotton Mills, Oakwood PREFIXES: 287, 531, 532, 534-536	24,500	76,000	90%
<u>Flowery Branch</u> includes: Flowery Branch Chestnut Mountain PREFIX: 967	3,650	420	90% - 91%
<u>Clermont</u> includes: Clermont only PREFIX: 983	2,375	210	89%
<u>Lula</u> includes: Lula Gillsville PREFIX: 869	1,710	150	85%

Source: Larry Poole, (Phone Conversation June 6, 1990), Forecast Manager, Southern Bell, Athens, Georgia

* These numbers may also include duplicate lines; for instance, some businesses may have as many as 10 different lines.

The municipalities of Hall County are Oakwood, Lula, Flowery Branch, Clermont, Gillsville, and Gainesville. The five remaining towns are incorporated.

APPENDIX 4:

Calculation Of The Survey Completion Rate

C (Completed)	402
R (Refused)	269
U (Unreachable)	39
D (Disconnected)	56
B (Business)	22
NE (Not Eligible)	8
UNL (Unlisted)	2
L (Language Barrier)	1
NS (Not-In-Service)	11
UC (Unreachable, Survey Was Completed)	26
	836

Rate= $\frac{402 \text{ Completed Surveys}}{836 \text{ Total Calls Made}} = 48.1\% \text{ Completion Rate}$

Note: A "U" was assigned after 7 attempts were made to reach the household.

Note: A total of 903 numbers were generated for the pool of numbers, but 67 telephone numbers were not needed.

APPENDIX 5:

The Survey Instrument

PARCHMENT DEED

SOUTHWESTERN - C. S. A.

1909, CANTON, MISS.

SURVEY INTRODUCTION

Hello, this is Linda West, and I am a student working on a survey for one of my college courses. This is not a sales call! I am conducting a survey of Hall County residents to find out their opinions about environmental issues. All of your responses will be confidential, and I would greatly appreciate your help! This survey will take about 10-15 minutes.

[INTERVIEWER: AT START OF SURVEY: IF YOU SUSPECT A CHILD IS ON THE LINE, ASK TO SPEAK WITH THEIR MOTHER OR FATHER, AFTER BEGINNING INITIAL CONVERSATION---THEN REPEAT INTRO!]

Would you be willing to participate in the survey?

[IF "YES"---ASK IF THEY ARE 18 YEARS OF AGE OR OLDER!!]

YES [Skip to Q1]

NO [ASK TO SPEAK With Someone 18 years or older / REPEAT INTRO]

[IF ELIGIBLE RESPONDENT IS NOT HOME, DETERMINE WHEN BEST TO CALL BACK.]

[IF "NO"---USE PERSUADERS on separate sheet]

Would you be willing to participate in the survey?

YES [Skip to Q1]

NO [Politely Terminate--"Well, thank-you for your time!]

1990 MEDICAL WASTE SURVEY

Q1. Which community or town do you live in? _____

Q1-----

Q2. Before this phone call, have you heard about the medical waste treatment plant that is proposed for Gainesville?

1. Yes

2. No

Q2-----

(If "YES") The remaining questions are about medical waste, but I will give you some information before we start. (IF YOU NEED ME TO REPEAT THE RESPONSES AT ANY TIME, LET ME KNOW.) Please answer the questions the best you can, because your opinions are very important to me. [PAUSE] A company is planning to build a medical waste treatment plant in Gainesville. This plant will have an incinerator to reduce and detoxify medical waste from 27 counties in Georgia; it will be located next to the county-owned landfill so that the left-over ashes can be buried; and it will also have air pollution control devices. [SKIP TO Q3]

(If "NO" or hesitation, encourage respondent.) That's okay. The remaining questions are about medical waste, but I will give you some information before we start. (IF YOU NEED ME TO REPEAT THE RESPONSES AT ANY TIME, LET ME KNOW.) Please answer them the best you can, because your opinions are very important to me. [PAUSE] A company is planning to build a medical waste treatment plant in Gainesville. This plant will have an incinerator to reduce and detoxify medical waste from 27 counties in Georgia; it will be located next to the county-owned landfill so that the left-over ashes can be buried; and it will also have air pollution control devices. [SKIP TO Q7.]

Q3. Did you hear about it by one or more of the following sources?
[You can choose more than one.]

1. Radio
2. Television Report
3. Newspaper Article(s)
4. Local Environmental Group(s)
5. Conversation with Friend/Neighbor
6. Can't Remember ---SKIP TO Q7
7. Other (List)

----- Q3-----

Q4. For EACH of the sources of information, do you feel it:
[Record source next to response - for EACH source]

1. Presented Both Sides---of the issue equally?---SKIP TO Q6
2. Slanted Towards One Side---of the issue?
3. Advocated One Side---of the issue?
4. Strongly Advocated One Side---of the issue?
5. Can't Remember ---SKIP TO Q6

Q4-----

Q5. Was the source mostly for or against the medical waste incinerator?

1. For
2. Against
3. Can't Remember

Q5-----

Q6. Which source had the most influence on your current opinions about this medical waste treatment plant?

1. Radio
 2. Television Report
 3. Newspaper Articles(s)
 4. Local Environmental Group(s)
 5. Conversation with Friend/Neighbor
 6. Can't Remember
 7. Other
-

01

Q6----

Q7. Do you favor or oppose the medical waste treatment plant which is proposed for Gainesville?

1. Strongly Favor
2. Favor
3. Oppose
4. Strongly Oppose
5. Not Sure/Undecided

Q7----

Q8. Do you think Georgia needs this medical waste treatment plant to manage its medical waste?

1. Yes
2. No
3. Not Sure/Undecided

Q8----

Q9. Have you ever been to a meeting about medical waste or any other environmental issue?

1. Yes
2. No

Q9----

Next, I will list some concerns that people might have about BUILDING a medical waste treatment plant in their community. Please tell me whether you would be CONCERNED or UNCONCERNED. [INTERVIEWER: Repeat the "response categories" as needed.]

If a medical waste treatment plant was built in your community, would you be concerned or unconcerned: Repeat for Q'S 10-16

Q10. ...about the health of yourself or your family?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q10----

Q11. ...about residential property values?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q11----

Q12. ...about environmental effects?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q12----

Q13. ...about the loss of local jobs and business?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q13----

Q14. ...about the ability of the government to make appropriate yearly inspections?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q14----

Q15. ...about the ability of private industry to properly operate the facility?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q15----

Q16. ...about the ability of the transportation industry to safely ship the medical waste to treatment facilities?

1. Strongly Concerned
2. Concerned
3. Unconcerned
4. Strongly Unconcerned
5. Not Sure/Undecided

Q16----

Thank you. These next questions have a different perspective. Please listen carefully and indicate whether you AGREE or DISAGREE. [INTERVIEWER: Repeat the "response categories" as needed.]

Q17. A medical waste treatment facility built in my community would not affect my health or my family's health.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q17-----

Q18. A medical waste treatment plant would not pollute the environment.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q18-----

Q19. A medical waste treatment facility would increase the value of local property.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q19-----

Q20. A treatment plant would not take away the natural beauty of Hall County.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q20-----

Q21. I believe that a treatment plant would help create more jobs in Hall County.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q21-----

Q22. A treatment plant will encourage business and development. 84

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q22-----

Q23. I think the state government is doing it's best to develop a plan to manage medical waste.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q23-----

Q24. An incinerator is a good way to manage medical waste.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q24-----

Q25. When it comes to managing medical waste, an incinerator is better than a landfill.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q25-----

All right. For this next set of questions, we'll use the same choices for answers, but these questions will also have a different perspective.

Q26. People like me have no affect on private industry's decision to build this treatment plant.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q26-----

Q27. Private industry can safely operate these plants.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q27-----

Q28. If environmental groups approved this treatment plant, then I would, too.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q28----

Q29. Medical waste can be safely transported through my community without causing harmful health effects.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q29----

Q30. I would be more willing to accept this plant, if it accepted waste ONLY from our state.

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Not Sure/Undecided

Q30----

Just a few more questions about medical waste to go. The next question has several responses. Let me ask the question and read all the possible responses before you choose one.

Q31. How close would you live to this treatment plant and still feel safe?

- 1) 1 mile away from my house
- 2) 10 miles away from my house
- 3) 30 miles away from my house
- 4) 50 miles away from my house
- 5) More than 50 miles away from my house

Q31----

Would you want this facility to be built in your town:
Repeat for Q'S 32-34

Q32. ...if private industry improved or partly maintained some of the roads?

1. Yes
2. No
3. Not Sure/Undecided

Q32----

Q33. ...if private industry would buy and provide additional property to affected residents? (Residents whose property is backed up / adjacent to the facility)

1. Yes
2. No
3. Not Sure/Undecided

Q33----

Q34 ...if private industry would either provide land and build a community park or improve ones already in place?

1. Yes
2. No
3. Not Sure/Undecided

Q34----

Q35. What do you think Georgia should do about medical waste?:
[RECORD ALL RESPONSES]

- 1) Build the treatment plant as soon as possible
- 2) Hold a statewide vote to get the public opinion
- 3) Work first to reduce waste
- 4) Other (specify)

Q35----

Now I would like to read a question followed by three statements. After each statement, please respond with: DEFINITELY, MAYBE, NOT LIKELY, DEFINITELY NOT, or NOT SURE.

If this medical waste treatment facility is NOT built in Gainesville, Do you think that: ---READ FOR Q's 36, 37

Q36. ...there will be an increase in the cost of medical services and products, due to increased costs of transporting medical waste out of Georgia?

1. Definitely
2. Maybe
3. Not Likely
4. Definitely Not
5. Not Sure/Undecided

Q36----

Q37. ...there will be an increase in illegal dumping to avoid high costs of medical waste disposal?

1. Definitely
2. Maybe
3. Not Likely
4. Definitely Not
5. Not Sure/Undecided

Q37----

Q38. Which of the following do you believe should be disposed of as medical waste?

- | | | | |
|---|-----|----|----------|
| 1. Plastic containers used in medical research | YES | NO | NOT SURE |
| 2. Administrative papers and records | YES | NO | NOT SURE |
| 3. Gloves used in surgery | YES | NO | NOT SURE |
| 4. Bodies of animals used to test pharmaceuticals | YES | NO | NOT SURE |

Q39. Which of the following generate medical waste?

- | | | | |
|----------------------------------|-----|----|----------|
| 1. Hospitals | YES | NO | NOT SURE |
| 2. Private Dental Practices | YES | NO | NOT SURE |
| 3. Medical Research Laboratories | YES | NO | NOT SURE |
| 4. Dry Cleaners | YES | NO | NOT SURE |
| 6. Private Medical Clinics | YES | NO | NOT SURE |

Finally, I'd like to finish with a few brief questions about you. The answers you give will only be used to help me better understand the results of the study. Please remember that I don't have your name, and all of your answers are confidential.

S1. What is your occupation? [Record exact response]

1. _____

S1----

S2. Do you own or rent the residence you are currently living in?

1. Own
2. Rent

S2----

S3. Are there any children in your household?

1. Yes _____ (Record Ages)
2. No

S3----

S4. What is your race?

1. White
2. Black
3. Hispanic
4. Oriental/Asian or Pacific Islander
5. Other (specify) _____

S4-----

S5. What is the last year of school you completed? [DO NOT READ--JUST PROBE FOR AN ANSWER--WRITE DOWN RESPONSES TO THE RIGHT, IF NEEDED.]

1. Some elementary school (K-7)
2. Finished elementary school (8th)
3. Some high school (9-11)
4. Finished high school
5. Some college/2-yr. college
6. Finished 4-yr. college
7. Some graduate school
8. Graduate degree

S5-----

S6. Record (BY OBSERVATION) Respondent's sex:

1. Male
2. Female

S6-----

S7. What is your age?

----- Offer these ranges if no response.

1. Less than 20
2. 20-30
3. 30-40
4. 40-50
5. 50-60
6. Over 60

S7-----

S8. I'd like to offer a range of income levels. Please tell me which one best describes YOUR HOUSEHOLD yearly income for 1989 before taxes.

1. Less than \$5,000
2. \$5-\$10,000
3. \$10-\$20,000
4. \$20-\$30,000
5. \$30-\$40,000
6. \$40-\$50,000
7. \$50-\$75,000
8. More than \$75,000

S8-----

THIS COMPLETES THE INTERVIEW! THANK-YOU AGAIN FOR YOUR TIME AND YOUR HELP! YOUR RESPONSES HAVE PROVIDED IMPORTANT INFORMATION FOR MY STUDY!

APPENDIX 6:

Demographics of the Survey Population

The sample seems to be more diverse than the actual demographics of Hall County; however, overall the sample is fairly representative of the county. Comparison between people in this sample and persons in the county in some cases is difficult, because some information is not readily available or has been categorized differently. The demographics for Hall County were obtained from the Wonder Data Base which obtains U.S. Census Data for 1970-1990.

The sample is comprised of 38% males and 62% females (QS6), 11% more females than the actual population of Hall County; however the county is comprised of more females than men, and usually women are more willing to participate in surveys than men, which may explain this finding.

Hall County's three largest age groups in years (QS7) are <20, 31-40, and >60. The three largest age groups of the sample population are 31-40 and both 20-30 and 41-50 were tied for second and third place; the >60 category came in fourth place. Overall, the age of the respondents is evenly distributed with the exception of the <20 category. This is because the County includes all ages less than 20 years old in this category, whereas, only individuals 18 or older could qualify as a respondent in the survey, so the category <20 only includes individuals who are ages 18 and 19 years old.

Concerning racial make-up (QS4) of the respondents, most (94.5%) are white and about 5% are black. Very few (0.30%) are hispanic. However, the racial representation of the respondents seems to approximate the actual racial make-up of the county.

The respondents have a wide variety of occupations (QS1). Most of the respondents (33%) are "professionals", 20% are "nonprofessionals", and there are 17% of both "service" and "uncompensated" workers. Approximately 12.5% are inactive in the work force and 0.5% refused an answer. For Hall County, data are available for all categories except the "uncompensated" and "inactive" categories. However, 1980 census figures show that most of Hall County individuals are "non-professionals" (47%), followed by "service" (33%) and "professional" workers (20%).

The occupations of survey participants were categorized according to U.S. Census Socioeconomic Index Scores for Major Occupation Groups. These are listed below:

U.S. Census Occupational Categories

Table 8:

Census Group	Category
07	Professional, technical, and kindred workers
06	Managers, officials, and proprietors, except farm
05	Clerical, sales, and kindred workers
04	Craftsmen, foremen, and kindred workers
03	Operatives and kindred workers
02	Service workers, including private household
01	Laborers, except farm and mine

After surveys were completed, the occupation of the respondent was categorized as one of the seven possible categories, but some occupations of the participants were not listed (i.e. volunteer). For clarity, the categories were then collapsed into four possible groups. The "professionals" are made up of census groups 07 and 06. "Service workers" comprise groups 05 and 02. The "non-professionals" were defined as groups 04, 03, and 01. Participants who were "uncompensated" include housewives, students, and volunteers. "Inactive" participants were either retired, unemployed, or refused.

Of the 402 respondents, 52.5% of them have children. Comparatively,

almost 40% of Hall County households have children. The category of children (QS3) was included to observe if any differences are found in parents and those with no children in later cross-tabulation data.

Concerning education (QS5), the largest category is 13-16 years of education (some college and college degree) with 37%, followed by 12 years with 33%, 17+ years with 16% and 0-11 years with 14%. As of 1990, the majority (49%) of the Hall County population (based on 18 years of age and older) have 11 years of less of education, 27.6% a high school degree, and the remaining 13.4% have 13 years or more of education.

Concerning the respondents' income, (QS8), the largest groups are 10-30 with 33% and 30-50 with 31%. These categories appear evenly distributed. Comparatively, most households have incomes of \$10,000 to 29,999 (54.6), followed by less than \$10,000 (30.2%) and \$30,000 to 49,999 (11.5%). The remaining households have incomes of \$50,000 or more (3.7%).

Of the 402 respondents, the sample has a higher number of homeowners (85.3%) compared to Hall County homeowners (71.5%). The category of residence (QS2) was used to observe if any differences are found in renters and homeowners in later cross-tabulation data.

The majority of the participants are residents of Gainesville (73.6%), then followed by Flowery Branch (13.4%), Clermont (8.2%), and Lula (4.7%), respectively. Compared to the number of available phone lines for these main exchanges, Gainesville has 24,500 residence lines (76%), Flowery Branch has 3,650 (11.3%), Clermont has 2,375 (7.4%), and Lula has 1,710 (5.3%). These figures are summarized in Appendix 5 and illustrate that the relative number of survey participants from major calling areas within Hall County tend to correlate to the percentage of phone lines for each major calling area.

APPENDIX 7:

Survey Results

---DEMOGRAPHICS---

OCCUPATION				
QS1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
LABORER	8	2.0	8	2.0
SERVICE WORKER	16	4.0	24	6.0
OPERATIVE	32	8.0	56	13.9
CRAFTSMAN	30	7.5	86	21.4
CLERICAL/SALES	64	15.9	150	37.3
MANAGER/PROPR	52	12.9	202	50.2
PROFESS/TECH	80	19.9	282	70.1
HOUSEWIFE	52	12.9	334	83.1
RETIRED	48	11.9	382	95.0
VOLUNTEER	2	0.5	384	95.5
STUDENT	14	3.5	398	99.0
UNEMPLOYED	2	0.5	400	99.5
REFUSED	2	0.5	402	100.0

OWN/RENT RESIDENCE YOU LIVE IN				
QS2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
OWN	343	85.3	343	85.3
RENT	58	14.4	401	99.8
REFUSED	1	0.2	402	100.0

ANY CHILDREN IN YOUR HOUSEHOLD				
QS3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	211	52.5	211	52.5
NO	191	47.5	402	100.0

RACE

QS4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
WHITE	380	94.5	380	94.5
BLACK	21	5.2	401	99.8
HISPANIC	1	0.2	402	100.0

EDUCATION

QS5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
K-7	4	1.0	4	1.0
8TH	9	2.2	13	3.2
9-11	45	11.2	58	14.4
12	134	33.3	192	47.8
SOME COLL	89	22.1	281	69.9
COLLEGE GRAD	58	14.4	339	84.3
SOME GRAD SCH	19	4.7	358	89.1
GRAD DEGREE	44	10.9	402	100.0

SEX

QS6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
MALE	151	37.6	151	37.6
FEMALE	251	62.4	402	100.0

AGE

QS7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
<20	10	2.5	10	2.5
20-30	81	20.1	91	22.6
31-40	117	29.1	208	51.7
41-50	81	20.1	289	71.9
51-60	44	10.9	333	82.8
OVER 60	69	17.2	402	100.0

INCOME LEVEL

Q88	Frequency	Percent	Cumulative Frequency	Cumulative Percent
< \$5,000	10	2.5	10	2.5
\$5,000 - 10,000	20	5.0	30	7.5
\$10,001 - 20,000	51	12.7	81	20.1
\$20,001 - 30,000	79	19.7	160	39.8
\$30,001 - 40,000	70	17.4	230	57.2
\$40,001 - 50,000	58	14.4	288	71.6
\$50,001 - 75,000	58	14.4	346	86.1
> \$75,000	38	9.5	384	95.5
REFUSED	18	4.5	402	100.0

COMMUNITY/TOWN YOU LIVE IN

Q1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
GAINESVILLE	296	73.6	296	73.6
FLOWERY BRANCH	54	13.4	350	87.1
CLERMONT	33	8.2	383	95.3
LULA	19	4.7	402	100.0

HEARD ABOUT TREATMENT PLANT FOR GAINESVILLE

Q2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	272	67.7	272	67.7
NO	130	32.3	402	100.0

--QUESTIONS CONCERNING THE PROPOSED MEDICAL WASTE TREATMENT PLANT--

REMEMBER WHERE YOU HEARD ABOUT IT

Q2A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
CAN'T REMEMBER	3	0.7	3	0.7
CAN REMEMBER	296	66.9	272	67.7
INAP	130	32.3	402	100.0

HEARD ABOUT IT ON RADIO

Q3x1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	94	34.9	94	34.9
NO	175	65.1	269	100.0
INAP	133			

RADIO PRESENTED BOTH SIDES EQUALLY

Q3X1A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
BOTH	45	47.9	45	47.9
SLANTED	32	34.0	77	81.9
CAN'T REMEMBER	17	18.1	94	100.0
INAP	308			

WAS RADIO MOSTLY FOR OR AGAINST

Q3X1B	Frequency	Percent	Cumulative Frequency	Cumulative Percent
FOR	4	12.5	4	12.5
AGAINST	28	87.5	32	100.0
INAP	370			

HEARD ABOUT IT ON TELEVISION

Q3X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	39	14.5	39	14.5
NO	230	85.5	269	100.0
INAP	133			

TELEVISION PRESENTED BOTH SIDES EQUALLY

Q3X2A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
BOTH	17	43.6	17	43.6
SLANTED	15	38.5	32	82.1
CAN'T REMEMBER	7	17.9	39	100.0
INAP	363			

WAS TELEVISION MOSTLY FOR OR AGAINST

Q3X2B	Frequency	Percent	Cumulative Frequency	Cumulative Percent
FOR	2	13.3	2	13.3
AGAINST	13	86.7	15	100.0
INAP	387			

HEARD ABOUT IT FROM NEWSPAPER

Q3X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	226	84.0	226	84.0
NO	43	16.0	269	100.0
INAP	133			

NEWSPAPER PRESENTED BOTH SIDES EQUALLY

Q3X3A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
BOTH	111	49.2	111	49.2
SLANTED	81	35.8	192	85.0
CAN'T REMEMBER	34	15.0	226	100.0
INAP	176			

FRIEND/NEIGHBOR PRESENTED BOTH SIDES EQUALLY

Q3X5A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
BOTH	8	13.6	8	13.6
SLANTED	48	81.3	56	94.9
CAN'T REMEMBER	3	5.1	59	100.0
INAP	343			

WAS FRIEND/NEIGHBOR MOSTLY FOR OR AGAINST

Q3X5B	Frequency	Percent	Cumulative Frequency	Cumulative Percent
FOR	10	20.8	10	20.8
AGAINST	38	79.2	48	100.0
INAP	354			

HEARD ABOUT IT FROM PETITION

Q3X7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	24	8.9	24	8.9
NO	245	91.1	269	100.0
INAP	133			

PETITION PRESENTED BOTH SIDES EQUALLY

Q3X7A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
SLANTED	24	100.0	24	100.0
INAP	378			

WAS PETITION MOSTLY FOR OR AGAINST

Q3X7B	Frequency	Percent	Cumulative Frequency	Cumulative Percent
AGAINST	24	100.0	24	100.0
INAP	378			

HEARD ABOUT IT FROM MAGAZINE/NEWSLETTER

Q3X8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	2	0.7	2	0.7
NO	265	98.6	267	99.3
MISSING	2	0.7	269	100.0
INAP	133			

MAG/LETTER PRESENTED BOTH SIDES EQUALLY

Q3X8A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
BOTH	2	50.0	2	50.0
MISSING	2	50.0	4	100.0
INAP	398			

WAS MAG/LETTER MOSTLY FOR OR AGAINST

Q3X8B	Frequency	Percent	Cumulative Frequency	Cumulative Percent
MISSING	2	100.0	2	100.0
INAP	400			

HEARD ABOUT IT FROM PUBLIC HEARING/MEETING

Q3X9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	12	4.5	12	4.5
NO	254	94.4	266	98.9
MISSING	3	1.1	269	100.0
INAP	133			

HEARING/MEETING PRESENTED BOTH SIDES EQUALLY

Q3X9A	Frequency	Percent	Cumulative Frequency	Cumulative Percent
BOTH	2	13.3	2	13.3
SLANTED	10	66.7	12	80.0
MISSING	3	20.0	15	100.0
INAP	387			

WAS HEARING/MEETING MOSTLY FOR OR AGAINST

Q3X9B	Frequency	Percent	Cumulative Frequency	Cumulative Percent
FOR	2	15.4	2	15.4
AGAINST	8	61.5	10	76.9
MISSING	3	23.1	13	100.0
INAP	389			

DID RADIO HAVE MOST INFLUENCE ON OPINION

Q6X1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	29	10.8	29	10.8
NO	240	89.2	269	100.0
INAP	133			

DID TV HAVE MOST INFLUENCE ON OPINION

Q6X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	9	3.3	9	3.3
NO	260	96.7	269	100.0
INAP	133			

DID NEWSPAPER HAVE MOST INFLUENCE ON OPINION

Q6X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	108	40.1	108	40.1
NO	161	59.9	269	100.0
INAP	133			

DID ENV GROUP(S) HAVE MOST INFLUENCE ON OPINION

Q6X4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	5	1.9	5	1.9
NO	264	98.1	269	100.0
INAP	133			

DID FRIEND/NEIGHBOR HAVE MOST INFLUENCE ON OPINION

Q6X5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	32	11.9	32	11.9
NO	237	88.1	269	100.0
INAP	133			

CAN'T REMEMBER WHO HAD MOST INFLUENCE ON OPINION

Q6X6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	1	0.4	1	0.4
NO	268	99.6	269	100.0
INAP	133			

DID EARLIER OPINION MOST INFLUENCE ON CURRENT OPINION

Q6X7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	61	22.7	61	22.7
NO	208	77.3	269	100.0
INAP	133			

DID PETITION HAVE MOST INFLUENCE ON OPINION

Q6X8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	10	3.7	10	3.7
NO	259	96.3	269	100.0
INAP	133			

DID MAGAZINE HAVE MOST INFLUENCE ON OPINION

Q6X9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	2	0.7	2	0.7
NO	267	99.3	269	100.0
INAP	133			

DID HEARING/MEETING HAVE MOST INFLUENCE ON OPINION

Q6X10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	8	3.0	8	3.0
NO	261	97.0	269	100.0
INAP	133			

IS YOUR CURRENT OPINION STILL BEING FORMED

Q6X11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	16	5.9	16	5.9
NO	253	94.1	269	100.0
INAP	133			

FAVOR OR OPPOSE MEDICAL WASTE TRT PLANT

Q7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR FAVOR	11	2.7	11	2.7
FAVOR	76	18.9	87	21.6
OPPOSE	79	19.7	166	41.3
STR OPPOSE	122	30.3	288	71.6
NOT SURE/UNDEC	114	28.4	402	100.0

DOES GEORGIA NEED PLANT TO MANAGE MED WASTE

Q8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	233	58.0	233	58.0
NO	49	12.2	282	70.1
NOT SURE/UNDEC	120	29.9	402	100.0

EVER BEEN TO MEETING ABOUT MED WASTE/ENV ISSUE

Q9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	73	18.2	73	18.2
NO	329	81.8	402	100.0

IF PLANT BUILT, WHAT ABOUT YOUR HEALTH

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	184	45.8	184	45.8
CONCERNED	163	40.5	347	86.3
UNCONCERNED	40	10.0	387	96.3
STR UNCONCERNED	2	0.5	389	96.8
NOT SURE/UNDEC	13	3.2	402	100.0

IF PLANT BUILT, WHAT ABOUT RES PROP VALUE

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	150	37.3	150	37.3
CONCERNED	167	41.5	317	78.9
UNCONCERNED	65	16.2	382	95.0
STR UNCONCERNED	4	1.0	386	96.0
NOT SURE/UNDEC	16	4.0	402	100.0

IF PLANT BUILT, WHAT ABOUT YOUR ENVR EFFECTS

Q12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	188	46.8	188	46.8
CONCERNED	157	39.1	345	85.8
UNCONCERNED	43	10.7	388	96.5
NOT SURE/UNDEC	14	3.5	402	100.0

IF PLANT BUILT, WHAT ABOUT YOUR LOSS OF LOCAL JOBS

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	86	21.4	86	21.4
CONCERNED	112	27.9	198	49.3
UNCONCERNED	137	34.1	335	83.3
STR UNCONCERNED	5	1.2	340	84.6
NOT SURE/UNDEC	62	15.4	402	100.0

IF PLANT BUILT, WHAT ABOUT GOV'T INSPECT

Q14	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	205	51.0	205	51.0
CONCERNED	128	31.8	333	82.8
UNCONCERNED	44	10.9	377	93.8
STR UNCONCERNED	2	0.5	379	94.3
NOT SURE/UNDEC	23	5.7	402	100.0

IF PLANT BUILT, WHAT ABOUT YOUR PROPER OPERATION

Q15	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	161	40.0	161	40.0
CONCERNED	153	38.1	314	78.1
UNCONCERNED	52	12.9	366	91.0
STR UNCONCERNED	3	0.7	369	91.8
NOT SURE/UNDEC	33	8.2	402	100.0

IF PLANT BUILT, WHAT ABOUT YOUR PROPER SHIPPING

Q16	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR CONCERNED	217	54.0	217	54.0
CONCERNED	129	32.1	346	86.1
UNCONCERNED	38	9.5	384	95.5
STR UNCONCERNED	1	0.2	385	95.8
NOT SURE/UNDEC	17	4.2	402	100.0

TRT PLANT WOULD NOT AFFECT MY HEALTH

Q17	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	2	0.5	2	0.5
AGREE	76	18.9	78	19.4
DISAGREE	131	32.6	209	52.0
STR DISAGREE	95	23.6	304	75.6
NOT SURE/UNDEC	98	24.4	402	100.0

TRT PLANT WOULD NOT POLLUTE ENVIRONMENT

Q18	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	3	0.7	3	0.7
AGREE	60	14.9	63	15.7
DISAGREE	159	39.6	222	55.2
STR DISAGREE	97	24.1	319	79.4
NOT SURE/UNDEC	83	20.6	402	100.0

TRT PLANT WOULD INCREASE LOCAL PROP VALUES

Q19	Frequency	Percent	Cumulative Frequency	Cumulative Percent
AGREE	15	3.7	15	3.7
DISAGREE	220	54.7	235	58.5
STR DISAGREE	122	30.3	357	88.8
NOT SURE/UNDEC	45	11.2	402	100.0

TRT PLANT WOULD NOT DECREASE NATURAL BEAUTY

Q20	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	4	1.0	4	1.0
AGREE	131	32.6	135	33.6
DISAGREE	133	33.1	268	66.7
STR DISAGREE	59	14.7	327	81.3
NOT SURE/UNDEC	75	18.7	402	100.0

TRT PLANT WOULD HELP CREATE MORE JOBS

Q21	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	5	1.2	5	1.2
AGREE	185	46.0	190	47.3
DISAGREE	100	24.9	290	72.1
STR DISAGREE	28	7.0	318	79.1
NOT SURE/UNDEC	84	20.9	402	100.0

TRT PLANT WILL ENCOURAGE BUSINESS/DEVELOPMENT

Q22	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	2	0.5	2	0.5
AGREE	81	20.1	83	20.6
DISAGREE	174	43.3	257	63.9
STR DISAGREE	37	9.2	294	73.1
NOT SURE/UNDEC	108	26.9	402	100.0

ST. GOV'T IS DOING ITS BEST TO MANAGE MED WASTE

Q23	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	5	1.2	5	1.2
AGREE	116	28.9	121	30.1
DISAGREE	99	24.6	220	54.7
STR DISAGREE	31	7.7	251	62.4
NOT SURE/UNDEC	151	37.6	402	100.0

INCINERATOR IS GOOD WAY TO MANAGE MED WASTE

Q24	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	14	3.5	14	3.5
AGREE	178	44.3	192	47.8
DISAGREE	41	10.2	233	58.0
STR DISAGREE	12	3.0	245	60.9
NOT SURE/UNDEC	157	39.1	402	100.0

INCIN. IS BETTER THAN A LANDFILL FOR MED WASTE

Q25	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	43	10.7	43	10.7
AGREE	235	58.5	278	69.2
DISAGREE	17	4.2	295	73.4
STR DISAGREE	5	1.2	300	74.6
NOT SURE/UNDEC	102	25.4	402	100.0

I HAVE NO AFFECT ON INDUSTRY'S DECISION

Q26	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	5	1.2	5	1.2
AGREE	85	21.1	90	22.4
DISAGREE	243	60.4	333	82.8
STR DISAGREE	54	13.4	387	96.3
NOT SURE/UNDEC	15	3.7	402	100.0

PRIVATE INDUSTRY CAN SAFELY OPERATE PLANT

Q27	Frequency	Percent	Cumulative Frequency	Cumulative Percent
AGREE	155	38.6	155	38.6
DISAGREE	94	23.4	249	61.9
STR DISAGREE	20	5.0	269	66.9
NOT SURE/UNDEC	133	33.1	402	100.0

IF ENV GROUPS APPROVE, I DO TOO

Q28	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	11	2.7	11	2.7
AGREE	222	55.2	233	58.0
DISAGREE	86	21.4	319	79.4
STR DISAGREE	19	4.7	338	84.1
NOT SURE/UNDEC	64	15.9	402	100.0

MED WASTE CAN BE TRANSPORTED W/NO HEALTH PROBLEMS

Q29	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	3	0.7	3	0.7
AGREE	133	33.1	136	33.8
DISAGREE	111	27.6	247	61.4
STR DISAGREE	31	7.7	278	69.2
NOT SURE/UNDEC	124	30.8	402	100.0

MIGHT ACCEPT PLANT IF IT ONLY HANDLES GA WASTE

Q30	Frequency	Percent	Cumulative Frequency	Cumulative Percent
STR AGREE	27	6.7	27	6.7
AGREE	221	55.0	248	61.7
DISAGREE	95	23.6	343	85.3
STR DISAGREE	16	4.0	359	89.3
NOT SURE/UNDEC	43	10.7	402	100.0

HOW CLOSE WOULD YOU LIVE & STILL FEEL SAFE

Q31	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 MILE AWAY	37	9.2	37	9.2
10 MILES AWAY	92	22.9	129	32.1
30 MILES AWAY	63	15.7	192	47.8
50 MILES AWAY	24	6.0	216	53.7
>50 MILES AWAY	136	33.8	352	87.6
NOT SURE/UNDEC	50	12.4	402	100.0

WANT PLANT IF PRIV INDUSTRY IMPROVED ROADS

Q32	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	83	20.6	83	20.6
NO	169	42.0	252	62.7
NOT SURE/UNDEC	150	37.3	402	100.0

WANT PLANT IF PRIV IND PROV PROP TO AFFECTED RES

Q33	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	143	35.6	143	35.6
NO	148	36.8	291	72.4
NOT SURE/UNDEC	111	27.6	402	100.0

WANT PLANT IF PRIV IND WOULD BUILD/IMPROVE PARKS

Q34	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	99	24.6	99	24.6
NO	195	48.5	294	73.1
NOT SURE/UNDEC	108	26.9	402	100.0

GA SHOULD BUILD TRT PLANT ASAP

Q35X1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	60	14.9	60	14.9
NO	342	85.1	402	100.0

GA SHOULD HOLD VOTE TO GET PUBLIC OPINION

Q35X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	175	43.5	175	43.5
NO	227	56.5	402	100.0

GA SHOULD WORK FIRST TO REDUCE WASTE

Q35X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	211	52.5	211	52.5
NO	191	47.5	402	100.0

NO OPINION ON WHAT GA SHOULD DO

Q35X4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	12	3.0	12	3.0
NO	390	97.0	402	100.0

EACH COUNTY SHOULD BE RESP FOR OWN WASTE

Q35X5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	53	13.2	53	13.2
NO	349	86.8	402	100.0

EACH STATE SHOULD BE RESP FOR OWN WASTE

Q35X6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	19	4.7	19	4.7
NO	383	95.3	402	100.0

GA SHOULD BUILD PLANT IN MORE ISOLATED AREA

Q35X7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	43	10.7	43	10.7
NO	359	89.3	402	100.0

GA SHOULD UTILIZE EXISTING FACILITIES

Q35X8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	26	6.5	26	6.5
NO	376	93.5	402	100.0

PLANT O.K. IF OPERATED/INSPECTED PROPERLY

Q35X9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	49	12.2	49	12.2
NO	353	87.8	402	100.0

GA SHOULD ENFORCE STRINGENT PENALTIES

Q35X10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	5	1.2	5	1.2
NO	397	98.8	402	100.0

MORE INFO/EDUCATION NEEDED FOR PUBLIC

Q35X11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	37	9.2	37	9.2
NO	365	90.8	402	100.0

COMPENSATION WOULD HELP

Q35X12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	4	1.0	4	1.0
NO	398	99.0	402	100.0

OTHER

Q35X13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	111	27.6	111	27.6
NO	291	72.4	402	100.0

WILL NO PLANT INCREASE MEDICAL COSTS

Q36	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DEFINITELY	124	30.8	124	30.8
MAYBE	138	34.3	262	65.2
NOT LIKELY	76	18.9	338	84.1
DEFINITELY NOT	22	5.5	360	89.6
NOT SURE/UNDEC	42	10.4	402	100.0

WILL NO PLANT INCREASE ILLEGAL DUMPING

Q37	Frequency	Percent	Cumulative Frequency	Cumulative Percent
DEFINITELY	96	23.9	96	23.9
MAYBE	147	36.6	243	60.4
NOT LIKELY	71	17.7	314	78.1
DEFINITELY NOT	21	5.2	335	83.3
NOT SURE/UNDEC	67	16.7	402	100.0

DISP OF PLAS RES CONTAINERS AS MED WASTE

Q38X1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	298	74.1	298	74.1
NO	21	5.2	319	79.4
NOT SURE/UNDEC	83	20.6	402	100.0

DISP OF ADMIN PAPERS AS MED WASTE

Q38X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	54	13.4	54	13.4
NO	315	78.4	369	91.8
NOT SURE/UNDEC	33	8.2	402	100.0

DISP OF SURG GLOVES AS MED WASTE

Q38X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	381	94.8	381	94.8
NO	10	2.5	391	97.3
NOT SURE/UNDEC	11	2.7	402	100.0

DISP OF RES CADAVERS AS MED WASTE

Q38X4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	359	89.3	359	89.3
NO	22	5.5	381	94.8
NOT SURE/UNDEC	21	5.2	402	100.0

DO HOSPITALS GENERATE MED WASTE

Q39X1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	393	97.8	393	97.8
NOT SURE/UNDEC	9	2.2	402	100.0

DO PRIV DENTAL PRACT GENERATE MED WASTE

Q39X2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	350	87.1	350	87.1
NO	17	4.2	367	91.3
NOT SURE/UNDEC	35	8.7	402	100.0

DO MED RES LABS GENERATE MED WASTE

Q39X3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	376	93.5	376	93.5
NO	5	1.2	381	94.8
NOT SURE/UNDEC	21	5.2	402	100.0

DO DRY CLEANERS GENERATE MED WASTE

Q39X4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	81	20.1	81	20.1
NO	209	52.0	290	72.1
NOT SURE/UNDEC	112	27.9	402	100.0

DO PRIV MED CLINICS GENERATE MED WASTE

Q39X5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
YES	378	94.0	378	94.0
NO	5	1.2	383	95.3
NOT SURE/UNDEC	19	4.7	402	100.0

APPENDIX 6:

Articles Taken From The Times

The following articles were taken from April to June of 1990, which is when the community concern over the incinerator was the greatest:

PAWSONS INCINERATOR
SOUTH-WESTERN CO. U.S.A.
HOOD & BOYTON ENGINEERS

Air quality meeting to focus on incinerator

By Steve Lambert
The Times

A meeting of concerned citizens and officials will focus on the air quality impact of a proposed medical waste incinerator in Gainesville, Fla., on Friday.

The meeting is sponsored by the Florida Department of Environmental Protection and is being held at the Gainesville Convention Center. The meeting will be held at 7:30 p.m. Friday.

The meeting will be held at the Gainesville Convention Center, 1000 S.W. 10th St., Gainesville, Fla. 32601.

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Air Quality

The map shows the location of the proposed incinerator in Gainesville, Florida. It includes labels for major roads like I-75 and US-90, and nearby landmarks like the Gainesville Convention Center. A handwritten note next to the map reads '4/12/90 1A, 8A'.

Incinerator plan sparks heated debate

By Richard Shegata
The Times

A trio of experts from Mirinda Incinerator Corp. spent Friday night trying to convince a crowd in Gainesville that a proposed medical waste incinerator is safe and necessary.

They didn't succeed. "I don't think you all have come here under the guise of being nice and sweet. Do you think we're stupid?" said Tom Minda, Mirinda's president.

The hearing was scheduled at a usual time to invite public opposition. "It's a funny way to inform people," said Jimmy Johnston, a local environmentalist.

Company officials said they came to the meeting to try to inform the public that the technology in the plant would keep it from becoming a health hazard.

Most of the comments from the audience were negative and included several sharp exchanges between audience members and officials from Mirinda, which is based in Atlanta.

The Georgia Environmental Protection Division requires the hearing as part of the permit process, although complaints from incinerator opponents have forced the company to conduct the hearing, which was held at the Georgia Mountain Center.

The company has already received approval for the incinerator from the state's Commission on Environmental Quality.

The plant would be built on a 6-acre site off Ga. 60 south of Gainesville.

The plant would be built on a 6-acre site off Ga. 60 south of Gainesville.

Debate

Continued from Page 1A

"We want to take the fear out of medical waste incineration," said Rick Flager, the company's marketing director. "Disease has been contracted in the Southeast by contact with pathological or medical waste."

After June 30, new federal rules will prohibit the dumping of medical waste in landfills, which will leave incineration as the main alternative.

Flager said the company has agreed with county officials that it won't accept waste from more than 70 miles from the plant and will monitor emissions on a regular schedule.

"We won't be bringing waste in from New Jersey. We won't be bringing it in from New York," said Flager, who also said any waste that "has radioactive won't be accepted."

That the company will be bringing waste from Atlanta, which doesn't have a well with some of those who spoke out here project on...

Atlanta and take care of yours," Minda engineer, Joe Keith, said. "burning the waste at the plant would produce emissions of dioxin and other toxins that are less than what is released by a backyard barbecue or a single cigarette. And he said the incinerator would be an improvement over the present situation, where much of the medical waste is burned by hospitals under less than ideal conditions."

What you're presently doing is burning this in the middle of nowhere," he said.

Keith of the incinerator also complained that the company has little background in operating a medical waste incinerator. Mirinda operates one plant in Wisconsin, which it bought in early 1990. And, he said, the company has no experience in operating incinerators in Gainesville.

Keith said the company officials pointed out that the industry is new, and 1980's one commercial waste incinerator in Gainesville has forced the company to...

has more than 15 years experience in building incinerators, but admitted that his experience has been with garbage incineration, not medical waste.

Deborah Adams of the Georgia Environmental Project, an environmental group based in Atlanta, said the novelty of the technology is a prime reason medical waste incinerators should not be built in Gainesville.

Keith said he didn't have enough information to say it isn't a hazard to anyone's health, she said.

Many of the people in the audience opposing the incinerator are also part of an effort to stop a regional garbage incinerator proposed for the area near Brooksville, Fla.

Keith said the company officials who appeared at the hearing also advised citizens to hold another public hearing before presenting the permit application to the DEP.

Keith said they did not have the authority to schedule another meeting. Although they said the request would be part of the hearing record forwarded to the DEP.

4/14/90
1A, 8A

DNR denies proposed Hall incinerator

By Richard Baum et al.
The Times Staff

The Georgia Department of Natural Resources has shot down a medical waste incinerator planned for Hall County.

The DNR has denied Minda Inc. a permit to release emissions from the proposed incinerator, which would have been located off Ga. 66 south of Gainesville. The move comes just a week after a public hearing where opposition to the plant was strong and vocal.

"That's fantastic. It's kind of incredible," said Gail Brookshire of Gainesville, a member of Action for a Clean Environment, an environmental group that opposed the incinerator.

DNR Commissioner Leonard Ledbetter informed Rep. Bobby Lawson, D-Gainesville, of the decision this morning, Lawson said.

When informed by The Times of the DNR's decision, Johnny Freeman, owner of Minda, said he had not received notification from the DNR. But he said the company would respect Minda's decision to deny the permit.

"We have completed all the state's regulations," Freeman said. "We have everything in place to get the permit."

Freeman said the company had spent \$1 million on the plant and had received all the necessary permits from the state and local governments.

"We have completed all the state's regulations," Freeman said. "We have everything in place to get the permit."



action. The company would like to see a chance to study the reasons for the DNR's rejection. "I haven't the slightest idea," he said. "But I have the reasons."

Company officials insisted at the hearing last week that the incinerator would present no danger to public health. The Hall County commission had approved plans for the facility, with stipulations that Minda periodically test for pollutants in the air.

When asked for the details, the company officials said they would provide them to the DNR. They said the DNR had the right to deny the permit.

Freeman said the company would respect Minda's decision to deny the permit.

4/21/90
1A, 10A

DNR

You and I know this is an emotional issue, not a technical issue," he said.

Lawson, an opponent of the incinerator, joined the rest of the county's legislative delegation this week in sending Ledbetter a letter requesting that Minda be required to hold another public hearing.

Gainesville City Councilwoman Gary Lawson, Rep. Lawson's wife, brought the issue before the council this past Tuesday, asking if there was anything the council could do to prevent the incinerator.

Lawson's tenure at the DNR has also become an issue in the governor's race, with environmentalists charging that the commissioner is too soft on polluters and too eager to give permits to new industries.

The decision to deny the permit to Minda marks the second time this month that the DNR has stopped a controversial industrial facility in Northeast Georgia by denying an air-quality permit. On April 13, the department denied a permit for a quarry in White County.

DNR spokesperson Lucy Justice said Friday that Minda was denied the permit because the company failed to meet minimum standards in design and operation of the plant.

Two areas of specific concern: the company's procedure for testing the toxicity of ash produced by the plant and its plans if the company decided to close the facility. She said the DNR also had concerns about the financial arrangements surrounding a trust fund Minda would provide in case the incinerator closed.

Action for a Clean Environment has scheduled its own public hearing on the incinerator Monday. Brookshire said the meeting would proceed despite the DNR's decision, to educate the public about the dangers of incinerators.

"We feel like it is a broader issue than just (Minda's incinerator)," he said. "And we feel like this medical thing is not over."

The meeting is scheduled for 7:00 p.m. Monday at the First United Methodist Church on Thompson Bridge Road.

4/23/90
1A

Official: Incinerator plan could turn Hall into a dumping site

By Clay Lambert
The Times Staff

State and local officials have joined in opposition to a medical waste incinerator planned for Hall County in the wake of a turbulent Good Friday public hearing on the issue.

Rep. Bobby Lawson said the proposed incinerator would turn Hall County into a dumping site. "We feel like it is a broader issue than just (Minda's incinerator)," he said. "And we feel like this medical thing is not over."

The Georgia Department of Natural Resources, the Environmental Protection Division of the DNR and the Georgia Department of Health have all expressed their opposition to the plant.

At the time of the hearing, the DNR had already denied the permit to Minda. The DNR Commissioner, Leonard Ledbetter, said the DNR had the right to deny the permit.

Freeman said the company would respect Minda's decision to deny the permit.

4/18/90
8A

ACE meets tonight on medical waste

Action for a Clean Environment is scheduled to hear about medical waste incineration at its meeting in Gainesville tonight.

The group will meet at 7:00 p.m. at the First United Methodist Church.

4/23/90
1A

LETTERS

How to oppose medical burning

As a former Fullenwider Road resident of Gainesville, I was shocked and appalled to see the general community apathy to the proposed medical waste incinerator.

I now live in Crossville, Tennessee, a small rural community located in a tourist area on the Cumberland Plateau. Our community was surprised to learn of a similar application for a medical waste incinerator that was to be located in the Eastern section of our county. Immediately, an awareness group was formed by concerned citizens to provide information and facts about the proposed incinerator. Politicians, local, state and national, worked together to contact government agencies and provide information to the public. The concerned citizens group placed radio and newspaper advertisements to oppose the incinerator and also spoke to civic clubs and churches giving information to our citizens.

Our community was completely opposed to this facility locating in our area. After studying and reviewing the known facts and the unanswered scientific questions, 4,000 people attended the public hearing, voicing strong opposition against the Medical Waste Facility. With this strong show of public opposition, the public hearing was canceled, to be rescheduled.

The community focus immediately turned toward the lawmakers and gov-

ernor in Nashville. State legislators sponsored bills before both Houses to place a moratorium on the building of any medical waste incinerators in Tennessee until the unknown questions are solved by the scientific community.

Lobbying efforts began, culminating with bus loads of concerned citizens from many Tennessee communities descending on the governor and Tennessee lawmakers. The end result was the governor placed a moratorium on building any medical waste incinerators in Tennessee.

The purpose of this letter is to inform Gainesvillians on how another community fought the medical waste incinerators. I would urge you to get the facts, get involved, and make your decision about this problem facing your community.

PEPE PERRON
Crossville, Tennessee

4/23/90
8A

LETTERS

We can stop medical incinerator

With regard to the proposed medical waste incinerator to be built in Hall County (three miles from Gainesville's Downtown Square), I have asked Carla Segars, chairman of the Hall County Commission, to call a special meeting to allow the commission members, individually and collectively to state positions on this project.

If the Georgia Department of Natural Resources authorizes this facility to be built, medical waste will be brought by the truckload from as far south as Griffin and beyond the northern and eastern borders of Georgia — a circle which is 140 miles across (for starters).

Press Tall Chairman Segars at 634-6019 or 635-8235 and express to him your feelings about bringing medical waste from outside Hall County for burning here.

Also, please write to J. Leonard Ledbetter, Director, Department of Natural Resources, 200 Butler Street, Suite 1252, East Tower, Atlanta, Ga. 30334.

HURL J. WOED
Flowers Branch

4/21/90
8A

Medical waste incinerator plan still alive

By Cary Lambert
The Times

Plans to construct a controversial medical waste incinerator in Hall County apparently are going up in smoke with a final permit application last week.

When the Georgia Environmental Protection Division denied Minds Incineration Corp. an air quality permit to operate a double-burning incinerator for medical waste in Hall County, many here assumed the project was dead.

But not Burl Word, a retired Flower Branch resident, told commissioners he was "blissfully unaware" of the incineration plans until a recent newspaper article. He then pleaded with the elected officials to deny the company the right to build on land near the intersection of May and Fulenwider roads during Friday's commission meeting.

Minds first approached the county commission in the spring of 1989 for a rezoning to allow the construction and operation of a commercial incinerator that would burn medical waste from strong North Georgia.

Last December the county agreed to rezone the land, noting that the incinerator could be built without local government approval on an adjacent tract that required rezoning. The commission subsequently amended the zoning ordinance to restrict any future incinerators in Hall County.

But only a week later officials from the

Georgia Department of Natural Resources EPD denied the project, saying Minds lacks an air quality permit necessary for incineration in the state.

One of the commissioners, Fred Reed, said the county that was not titled the plan, but that the home was already built.

Friday, Word said the EPD may have looked that long, and maybe we can get it back in the hands of the county.

Word asked commissioners to do everything in their power to deny the incinerator, but the opportunity to build in Hall County, Commissioner Steve Stepp said yes, he would attend to block the incinerator.

Others were more vague.

"At this point I am not willing to say how I will vote in the future," Commissioner Chairman Curtis Segars said.

There has to be a better solution for the medical waste disposal than what we are doing now, he said.

On July 1, a new state law will prohibit dumping of biomedical waste, defined as anything that is soaked in blood, in a facility and fills in Georgia.

Currently, both Lanier Park Hospital and Northeast Georgia Medical Center in Gainesville operate small incinerators to handle their waste.

Word said he would like to see the county commission vote on the rezoning to add high-tech scrubbers to the incinerators.

Should Georgia follow the lead of other states?

Please see "Waste" page 10.

Bio-medical waste incinerator tough issue to decide

THE WISDOM OF SOLOMON IS needed to solve the dilemma of what to do about a proposed medical waste incinerator for Hall County.

Minds Incineration Corp. owns a tract of land near the intersection of May and Fulenwider Roads that is zoned appropriately for such a facility. A number of local citizens have protested location of the facility here, and the state Environmental Protection Division denied an air quality permit to operate it.

That doesn't mean the idea's dead. Minds said it would pursue the effort and satisfy any state objections. A new state law prohibiting the dumping of bio-medical waste in landfills takes effect July 1.

Some hospitals such as the Northeast Georgia Medical Center operate small waste incinerators. But stronger environmental laws are about to require the addition of high-cost, high-technology scrubbers on these units. A basic question arises: Is it more economical, safe and efficient for each hospital to make the investment to handle its own waste or to permit commercial firms to build central incinerators to handle the bio-medical waste from a number of area hospitals?

In bio-medical waste is a reality wherever a hospital operates, and it must be disposed of.

Opponents warn of potential dire consequences should Hall County permit construction of the Minds unit only three miles from the downtown square. A less efficient incinerator without scrubbers has operated for years at Northeast Georgia Medical Center less than a mile from the square and hasn't bothered these same opponents. Do they prefer continuing this operation locally and adding to overall medical costs by requiring those area hospitals now using landfills to build individual incinerators and the local hospitals to add expensive scrubbers? Or is there yet another alternative that can be put into effect by July 1?

Proponents say the high-tech Minds operation can meet air quality standards. Advanced technology has averted the potential dangers in the disposal process. We now use some process that we should depend upon and use of technology to make the disposal process safe.

Waste

officials with the disposal of the potentially infectious waste, said Hall County attorney Bill Linnis cautioned commissioners that it was "somewhat inappropriate" to answer direct questions relating to Minds' future. He said the commission could be used in court to prove a predispotion against the Minds plan.

Linnis said he was studying whether Minds will need further local approval with or without EPD concurrence. He said company officials had contacted the county since the air quality permit was denied.

That contact appears imminent.

"At this point it is pretty definite that we will continue to pursue a plan in Hall County," said Greg Keelth, director of operations for Minds Incineration Corp. "We're preparing a response to the EPD

permits with a letter that pointed out perceived deficiencies in the plan. He said the company had 30 days to respond.

He said the issue is between the state government and Minds. He said he knew of nothing the Hall County Commission could do to intervene in the debate.

"As far as I understand it we still have the zoning and land-use permit from Hall County," Keelth said.

Saturday morning, Word said he received word from state Rep. Bobby Lawson, D-Hall County, that a high official with the DEPR said Minds had retained a "major engineering firm in Atlanta" that already was inquiring into the next steps necessary to build a medical waste incinerator in Hall County.

4/24/90
1A, 3B

5/1/90
8A

Mindis can reapply for incinerator permit

By Clay Lambert
The Times Staff

Environmental concerns
• Jackson plants cited for pollution
• Incinerator opponents to meet

Although the Georgia Department of Natural Resources has granted Mindis Incineration Corp. one of two state permits necessary to operate a medical waste incinerator in Hall County, a department spokeswoman said the company can re-apply at any time. And Mindis officials have indicated

that they will do just that. The DNR issued a clarification after confusion arose over the next step for Mindis. Greg Kenish, director of operations for the incineration company, said last week that he'd received a letter of

denial from DNR Commissioner Leonard Ledbetter. Kenish said the company was working on an answer to that letter, adding that his firm was not dropping plans for Hall County. But Ledbetter, in a separate correspondence with project opponent Bill Brooksher, said Mindis' request for a solid waste handling permit had been denied. Ledbetter wrote that the company's application for an air quality

permit was on hold as a result of previous permit denial. Lucy Justice, spokeswoman for the DNR's Environmental Protection Division, admitted the "permitting" and "deal process is confusing. She pointed to Ledbetter's April 18 letter to Kenish, specifically stating that the permit had been denied. Please send Mindis Page 6A

• Mindis

Continued from Page 1A
"Of course, the company can certainly re-apply and we would re-evaluate their information at that time," she said. Mindis had planned to truck medical waste — defined as anything that soaked in blood — from a 70-mile radius around Gainesville to an incineration plant on May Drive off Candler Road. The proposal had a bumpy ride through the reasoning process as Hall County commissioners repeatedly questioned the safety of such an operation. A second wave of opposition to the company's incineration plans surfaced during an April 12 public hearing on the permit applications. The uproar centered on the incineration process and the proposed importation of infectious medical wastes into Hall County. Local citizens said incineration

creates toxic smoke and potentially harmful ash. In his April 18 letter to Kenish, Ledbetter wrote that the company failed to meet minimum standards for in the areas of obtaining samples of residue and fly ash (fine solid particles of ashes, dust and soot carried out from burning) and the development of an adequate closure plan for the facility. Mindis officials charge that the denial was based more on political than technical considerations. "It is purely political and it's turned into a big mess," said Mindis salesman Rick Flagler, who attended the public hearing on the permit applications. "We have the zoning and then four people get up at the public hearing who are against the thing. Why? Well, just because," he said. "I don't know what we're doing now."

5/5/90
1A, 6A

Consider environmental concerns

Your May 1 editorial confirmed my suspicion that The Times is not interested in knowing or presenting the complete story on medical waste incineration. If you paper had made even a minor attempt at investigative journalism or had you covered the April 23rd public information meeting of Action for a Clean Environment (ACE) or at least contacted a member of ACE in an attempt to gain some insight, then maybe that same space could have been used for a constructive and informed opinion. Of greater concern is the trend in The Times' coverage of other related issues. Apparently, it is taboo to investigate proposals generated by particular entities. If industry says it is looking after the environment there is no reason to dig deeper. Consider your unquestioning coverage and promotion of "integrated waste management" (with regional incineration) as an answer to our municipal waste problems. Consider your similar coverage of the activated carbon water treatment proposal with hardly a mention of the pyrolysis plant that will make the carbon. Surely, The Times and government officials at all levels will wake up soon and realize that the public will no longer tolerate the environment being an afterthought in decision-making.

By the way, who are the "proponents" of the Mindis Incinerator? A video on med-waste should interest them: Wednesday, May 9th, 7:00 p.m., Chestnut Regional Library, presented by ACE and open to the public.

Oppose Incinerator

The editorial "Bio-medical Waste Incinerator Tough Issue to Decide" begs for comment. Your first sentence speaks of a medical waste incinerator for Hall County. If the proposed incinerator is built, it will be in Hall County, but for Fulton, DeKalb, Cobb and the others within the 140-mile circle. Your second sentence states that the proposed site is "zoned appropriately for such a facility." We are advised by the state EPD that because the state denied Mindis a permit, Mindis must start all over and ask Hall for a permit to build. Are you aware that construction has not yet begun on the incinerator? You say that proponents say the high-tech Mindis operation can meet air quality standards. Opponents say that the ash from high intensity burning is hazardous waste.

Solutions are needed. But we submit that if you had Atlanta's problem to Gainesville, then Atlanta will be unwilling to spend the talent, money or energy necessary to solve its problem. Each entity must live with its own waste and learn to recycle, sterilize, and invent new methods, not new dreamed of.

We will be on the downtown Gainesville square Sunday, May 8 from 2 p.m. until dark. Those who oppose the hauling of medical waste from outside Hall County into Hall County for incineration are requested to drive by and sign the petition.

BURL J. WORD
Flowers Branch

Letters welcome, FAX available

The Times welcomes signed letters of no more than 200 words on topics of current interest. Please include address and phone number. In case we need to contact you, Write Letters, The Times, P.O. Box 638, Gainesville, Ga. 32603. If more convenient, you may write via FAX to 404-532-0457.

5/5/90
8A

Retiree wants incinerator plan dumped

By Chris Boese
The Times

Retirement wasn't supposed to be a busy time for 64-year-old Burl Word. Instead of relaxing, Word spends most of his time canvassing against the proposed construction of a medical waste incinerator six miles from his Flowery Branch home.

Sunday, he and his supporters took to the Gainesville square, circulating petitions against the incinerator.

"Businessmen don't have a right to affect my quality of life just for profit," Word said.

Officials with the Mindia Incineration Corp., which has been denied one of two permits necessary to operate an incinerator in Hall County, said they have not dropped plans for the incinerator and are taking steps to acquire the necessary permit.

Word said the petitions so far have garnered more than 900 signatures. They are meant as a show of support for Hall County commissioners who must decide



Word said the petitions so far have garnered more than 900 signatures. They are meant as a show of support for Hall County commissioners who must decide whether to allow Mindia to truck medical waste from a 70-mile radius to the plant site on May Drive off Candler Road, he said.

The list of signatures, which includes Hall County Sheriff Dick Mecum, Gainesville City Commissioner George Wangemann, and state representatives, Lobby Lawson and Jerry Jackson — will be sent to the Georgia Department of Natural Resources next week.

"I haven't talked to one person who supports it," Word said of the proposed incinerator. "It's mostly automated, so it isn't going to bring many jobs to the area."

Word, retired from General Motors, said he wouldn't be opposed to an incinerator which would burn medical waste from only local hospitals. But he doesn't like the idea of Gwinnett County and Atlanta hospitals bringing their waste to his county.

"Mindia tells us it's safe, so my question is if it's so safe then why don't they build them in Gwinnett County and Atlanta?" he said.

Mindia's director of operations Greg Keith has compared the safety of the incinerator to a lit cigarette.

"I (don't) know of anyone who thinks cigarette smoking is good for you," said incinerator opponent Don Pulliam, a Flowery Branch lawyer.

Pulliam, 64, said the county might be facing a suit from Mindia if the corporation gets the second permit from the DNR. Word said Lawson told him Mindia has contacted a large law firm in Atlanta to represent their interest in Hall County.

"But the county shouldn't worry about a lawsuit," Word said. "If they get sued, so what? If it's necessary, let's have a court injunction. We'll be right behind them no matter what."

Word and his supporters — many of whom are older residents — said they are newcomers to the environmental movement.

"Two weeks ago, I didn't even know how to spell environmentalist," he said. "Now I am one. As time goes by, everyone will be."

In two weeks, Word's nameless group has been able to attract new members to their movement by taking petitions to churches and civic clubs, organizations which have been largely ignored in the past by environmental activists.

"I went into one church and gave a pastor a petition, and he guaranteed me 300 signatures. When people learn about this, when it hits close to home, they want to sign."

A potential county commissioner also signed the petition, pledging to support the fight against the incinerator.

Please see Word
Each page the section

Word

(Continued from Page 1A)

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5/7/90
1A, 3A

Hall County has no say-so over proposed incinerator's future

By Clay Lambert
The Times Staff Writer

A proposal to build a medical waste incinerator in Hall County is beyond local control, and instead will be decided by a state regulatory agency, Georgia's top environmental administrator said Thursday.

The instrument that Hall County has is leasing and Minda Incineration Corp. already has that Leonard Ledbetter, commissioner of the Georgia Department of Natural Resources, said during a presentation in Gainesville.

The Hall County Commission earlier this year approved a peti-

tion to rezone property near the intersection of May and Fullenwider drives. Minda plans to track biomedical waste described as most anything soaked in blood in from a 10-mile area for incineration here.

The company was denied a state permit last month after Ledbetter's staff at the Environmental Protection Division found insufficient testing procedures for fly ash that would result from the incinerator.

Company officials are now compiling answers to the EPD complaints, according Greg Kerth, director of operations for Minda.

Please see Say-so

Say-so

Ledbetter in Gainesville in a meeting of the Georgia Municipal Association, said his office has no opinion on the advisability of incineration for the disposal of medical waste.

The general populace is under the impression that it is our job to protect them from things like incineration," Ledbetter said. "Well, we must, by law, issue permits to these people if they meet our requirements."

Local governments must protect themselves with land-use plans and zoning ordinances," he said.

Minda has retained John Blackmon, with the firm of Smith, Gambrell and Smith in Atlanta, to represent company interests in Hall County.

Blackmon is a former resident of Gainesville for the past 10 years. He represented Party in the 1980s. He is now a member of the Board of Directors of the Gainesville Chamber of Commerce.

5/11/90
1A, 2A

The real environmental questions

By Joseph Brown
For The Times

GUEST COLUMN

Protecting the environment is not an either/or proposition. It is a society's choice. It requires an objective approach with technical, operational and economic knowledge along with common sense.

In my opinion the news media has not provided really useful information in any of the environmental issues that have surfaced in Hall County in the past 10 years. A plant some would have thought desirable was turned away. Now there is word of a carbon (what type?) plant from trash for water treatment. Won't this be a "dirty" plant and how does it compete with other methods?

Let's get up a top-of-the-head list of questions for, in this case, Minda International:

- 1. The Process
 - What are the steps?
 - How many are there and how long will they take?
 - What are the operating results, normal and under full load?
 - What are the operating parameters?
 - What are the operating parameters?
 - What are the operating parameters?
 - What are the operating parameters?

- 2. The Feedstock
 - What is it (details)?
 - How will it be brought to the plant?
 - Will trucks, or whatever, be designed to avoid spillage, no matter where or what?
 - Is every inch of the way, from pickup to process feed under cover or enclosed?
 - Will certain things be excluded? (I think of certain metals such as mercury and cadmium.)
- 3. The Workers
 - What kind of workers?
 - What protection for workers?
 - Do they operate around the clock?
- 4. The Infrastructure
 - Is an environmental impact report required? Where can I see it?
 - Effect on traffic?
 - Effect on neighbors (appearance, odor, noise, etc.)
 - Effect on the overall goal and its penalties or costs?

And in the "Information Age" no less, I know full well that no process plant is perfectly safe, perfectly efficient, perfectly clean, always at top efficiency and profitable, no matter what. I do know that people who do be operating units take pride in their work from design through all the steps to full time operations. They manage the operations to minimize faults and to make improvements.

Finally, remember that our elected and appointed officials must always abide by and work within the technical guidelines and regulations that are "carved in stone" at any one time. Or go to jail. Be able to fault them, maybe ask a question instead!

A nasty editor has forced me to shorten this to delete all the funny humor and gutsy stuff.

Joseph Brown

But wait, maybe I have done more than I speak against. I have written. Cannot call for the above definition opportunity for gains in this case, Minda International to provide a guide to stopgap fold-out brochure to inform the public. I have written to the Gainesville News, Gainesville News, Gainesville News (and many more) that they act and maintain. I will be sure to provide a guide to stopgap fold-out brochure to inform the public. I have written to the Gainesville News, Gainesville News, Gainesville News (and many more) that they act and maintain. I will be sure to provide a guide to stopgap fold-out brochure to inform the public.

5/14/90
6A

Handle medical waste other ways

Your editorial concerning the Bio-medical waste incinerator is an example of how editorials can be used to confuse and influence people without presenting factual information to back up broad statements.

The editorial states: "A new state law prohibiting the dumping of bio-medical waste in landfills takes effect July 1." Actually the EPD regulation states that effective June 29, 1990 the EPD will require "incineration or other treatment of bio-medical waste prior to disposal." Autoclaving or other methods approved by the director are permitted as well as incineration.

We are producing too much waste. Incineration does not make this fundamental problem of waste disappear. There seems to be tremendous potential for source reduction in the medical field. Many items that were routinely sterilized and reused only a few years ago are now disposable. Maybe the basic editorial question should be re-stated: Is it more economical, safe, and efficient for each hospital to continue to waste valuable resources or to look at methods of waste reduction and reuse of materials and also find the most environmentally safe and sustainable solution to things that cannot be removed from the waste stream?

It is true that small incinerators are operated by area hospitals and that these do indeed present hazards. The basic question that arises in the editorial leaves out the fact that commercial firms who would build a central incineratory to handle bio-medical wastes from a number of area hospitals plan to draw business from a 70-mile radius of Gainesville, which includes the most populous counties in Georgia. The Mindus unit proposes to burn 10 tons of bio-medical waste per day, but has the capacity to burn 20 tons per day. This

gives a capacity to burn 3,650 to 7,300 tons of bio-medical waste per year. The way such a business maximizes profits is to burn as much waste as possible.

The editorial states: "Proponents of the high-tech Mindus operation can meet air quality standards." The only proponents who have come forward so far seem to be The Times and Mindus employees. The question here is: How much of Georgia's clean air resources are we willing to allot to a business that could be scaled down and has such a poor environmental track record as incineration?

When we look to "advanced technology" to cure society's ills, it would only be prudent to remember that "advanced technology" also brought us Love Canal, Three Mile Island, the Space Shuttle "Challenger," the Savannah River Plant, cars that suffer sudden acceleration, and any number of maladies afflicting society and the environment.

Source reduction, autoclaving, landfilling, and a program of intensive study seem to be viable alternatives to a technologically quick fix for now. The future is important enough for us to spend the time, energy, and money to make the answers for today not be the toxic nightmares for tomorrow.

JAMES L. JOHNSTON
Santee

5/15/90
8A

How to handle medical waste?

HOSPITALS MAY HAVE to improve their means of disposing of medical waste. One of several possible options is to install expensive, high-technology equipment to incinerators now used to burn the waste. Numerous small hospitals find that individual incinerators are not cost-effective.

On the other hand, environmental activists oppose larger-scale incineration. Neighborhood groups oppose location of incinerators in their communities.

Are there other viable alternatives for safely disposing of medical waste? How would they be financed? If you had to make the community decision on what to do, how would you handle the medical waste disposal problem?

First Monday invites your comments to appear on the special monthly page devoted to reader views. In order to be considered, the letters must be no more than 200-250 words and must be in our office by the end of the day Wednesday May 30.

5/26/90
8A

Petition against incinerator

With regard to the proposed medical waste incinerator, the people of Gainesville must take time to look at a Hall County map. The proposed site is one mile east of I-95 (off Candler Highway 80 at Fullenwider Road), three miles from the downtown square and four miles from Lake Lanier. The agriculture center under construction in Chicopee Woods is 1.6 miles from the proposed site. The Elachee Nature Center is being built approximately two miles from the site. Recently a film about a medical waste incinerator operating in South Carolina was shown. Please see the film when it is shown again and learn more about this threat to the quality of your life and the value of your property. Do not make the fatal mistake of waiting until the smell reaches you to learn the facts about medical waste incineration. If you oppose the hauling of medical waste from outside Hall County into Hall County for incineration, please call 667-2341 and you will be sent a petition to sign. BURL J. WORD
Flowers Branch

Schools have needs

Being a student at Gainesville High and a member of the band, I understand the great need for the bond referendum to pass. I am appalled at the voters in our community who think there is no need for a new elementary school and fine arts complex, among other things. Maybe those who believe this should visit our campus. I'm sure you would instantly recognize our teacher's. They are not just at our school, right? These inadequacies exist in the entire system. If you, as voters, do not take advantage of every opportunity to improve the conditions in our schools, what hope can we, as students, possibly have for our futures? I urge every voter to vote, yes, in our education. After all, we can only learn and grow as much as you allow.

5/17/90
12A

STEPHANIE POLCHER
Gainesville

Rezoning

Minda officials have since said they are working to appeal the EPD decision and are not giving up hope of building a medical waste incinerator in Hall County.

Commissioner Lou Stangel proposed the rezoning Monday after several concerned citizens pleaded for their elected officials to intervene in the debate. The planning commission is now scheduled to take up the discussion of the rezoning and to forward a recommendation back to the elected board. Bill Brookaber, a member of Action for a Clean Environment, said his group had collected more than 2,700 names on petitions opposing the Minda plans. "It goes a lot further than a medical waste incinerator," Brookaber said. "We have to know that government — at all levels — is responsive to environmental concerns." Commissioner Jane Hemmer said the commission shared ACE's environmental concerns at the initial Minda rezoning. "But, because county fathers never considered the incineration of medical waste, the commission had no grounds to disallow the Minda request. "Inherently, medical waste incinerators were allowed," she said. "But then so are elephant pits. It's hard to limit things you have no history on." The move could provide a legal challenge from Minda. The company currently is embroiled in a court battle against the middle Georgia city of Grantville, where city council members reneged on a rezoning that allowed the company to build a similar incinerator. Hall County Administrator Mike Bryant said late Monday afternoon that the rezoning action already had been transmitted to the planning department. The outlet the county planning commission could reverse the issue is 720-2113, according to department staff.

Ordinance would ruin Mindis plan

Hall proposes law to bar importation of hazardous waste for incinerator

By Clay Lambert
The Times

An Atlanta company has re-applied for a state permit standing between the fledgling enterprise and a controversial medical waste incinerator planned for Hall County. But local government officials plan to introduce an ordinance Tuesday that would prohibit the importation of toxic, hazardous or infectious wastes into Hall County. Such a law could choke the stream of available medical waste and kill the economic benefits Minda Incineration Corp. could realize from building an incinerator. The ordinance could combine with an unusual county-induced rezoning of the company's May Drive land in a two-pronged attack on the unpopular incineration proposal. Mindis announced plans in the spring of 1989 to build the incinerator to burn medical wastes from a 70-mile radius in the Hall County plant. At the time, the government had no regulations regarding incineration of medical wastes. Since then a vocal citizens' group has emerged, waving more than 3,000 signatures of opponents to the project. The company applied for a solid waste handling permit for the second time May 18. More than a month after a new state law dubbed the Comprehensive Solid Waste Management Act took effect, the law requires Minda to begin mediation process with the county government and concerned citizens prior to the release of the Georgia Environmental Protection Division permit.

5/26/90
1A

Rezoning could trash plans for incinerator

By Clay Lambert
The Times

Hoping to block construction of a proposed medical waste incinerator, Hall County commissioners voted unanimously Monday to rezone an 8-acre tract belonging to Mindis Incineration Corp. The action could bring the property under new, tougher land-use restrictions that would prevent medical waste incinerators. Mindis officials forwarded telephone calls to their lawyers who, in turn, declined comment. The commission's decision came after more than a year of community debate about the company's plans in Hall County. Minda officials had hoped to

truck medical waste — defined as anything contacting human blood — from a 70-mile radius around Gainesville for burning and disposal here. Last spring, county commissioners approved a rezoning to a heavy industrial zone that allowed incineration. Later, commissioners amended county zoning ordinances, removing incineration from the list of land uses that are allowed without governmental review. Then, in April, the Georgia Environmental Protection Division denied Mindis a solid waste handling permit, further derailing the company's plans. Please see Rezoning Back page this section

5/15/90 1A, 10A

Incinerator will harm quality of life in area

The proposed medical waste incinerator will hurt the quality of life for Gainesville/Hall County and surrounding areas will be harmed greatly.

The Minds Corporation would have us believe that most of the emissions would be trapped and therefore not escape from the smokestack into the air. You and I know that actual operating conditions usually vary from the laboratory ideal and that much would escape into the air. Do not keep in mind that what doesn't go out of the smokestack remains at the site and will be buried in our county landfill. No thought has been given to using the landfill to reduce the risk of groundwater contamination. Many people and much livestock and much egg production and much poultry drink well water in Hall County. Landfill runoff will flow with creeks and streams toward the Oconee River which serves the Athens area.

The dioxins and other toxins which do escape into the air will settle on the land where farm animals grass and vegetables and grain grow. Some of the fly ash which escapes from the smokestack will fall into or be washed into Lake Lanier.

If you would like to know more about medical waste incineration, please come to the Chesapeake Library on Thursday May 31 at 7 p.m. The video lasts one hour and is free.

If you are not one of the 4,500 who have already signed a petition, please call 687-2341.

DURL J. WORD
Flowers Branch

Don't accept polluters

It is clear to me that our city council members aren't interested in future population growth in Hall County. If they were, they would not have allowed Minds zoning approval. Instead, they have set a precedent for industries who are unwanted elsewhere because of their potentially harmful effects on the environment. I hope they will reconsider and revoke zoning approval on the property. Minds purchased it for one will be sure and vote for a more forward thinking commission come election time.

I am not against all industry. Just those that pose possible environmental problems. We have all the right ingredients for being a desirable, sought after place to live and work. Let's preserve that image and build on it wisely. Let's invite the kind of industry that will make a positive contribution to the people and environment of Hall County.

The question is not how much pollution is tolerable from the Minds Incinerator but how many more polluters will our commission put their stamp of approval on. And where were the city manager or even the mayor when the people of Hall County were being sold a contaminated pig-in-a-poke?

FERDINAND ROSA
Gainesville

EDITOR'S NOTE: The property Minds owns was rezoned by the Hall

County Commission, not the city council

Protect environment

I want to share with you how Billy Breakaker showed a tape on the importance of protection of our air, land, water, trees for all now and for future.

We are here to serve you/your family in this. I ask you to write to have done to tell others it's up to you. Please Face this tape if you'd have a chance.

LOUISE KEMP
Gainesville

5/30/90
4A

Gainesville may join Hall in waste incinerator battle

By Clay Lambert
The Times Herald

City of Gainesville officials may find their peers in county government in what could be a money fight against plans for a controversial medical waste incinerator in Hall County.

But the city and county may be left with fibering hands, tied, according to Gainesville's attorney, who said council members Tuesday that the transport and disposal of waste is largely controlled by state and federal governments.

Gainesville City Council member Clay Lawson asked that the city attorney be authorized to intervene in the state permitting process, if

granted, the permit would allow Enviro-Solutions Inc. to begin construction on the unpopular incinerator in unincorporated south Hall County.

Lawson later withdrew his request, which could have made the city government a party to any litigation and jointly liable for any judgment the company might win against Hall County officials.

"I feel that the county is trying to stop this and our intervention would help them," Lawson said. "This (incinerator) would affect our real estate values in the city of Gainesville and a lot of other things as well, and we need to act to prevent it."

The council instead instructed

city attorney James E. Palmour III to file a brief with the Hall County position in opposition to the plans of Enviro-Solutions Inc., formerly known as Minds Incineration Corp. City officials didn't rule out the possibility of becoming a party to future litigation.

Palmour recently has counseled with county attorneys who are studying ways to prevent construction for the incinerator.

Last week, attorney Stanley Franz, working for the Hall County Commission, presented an ordinance that would ban the incineration of infectious waste into the incinerator.

Page 30

battle

6/6/90
1B, 3B

Incinerator

Interstate commerce

Palmour urged the council to avoid any litigation against Enviro-Solutions for now.

rather not intervene on the leading edge of a rapidly emerging field of law," he said. "The road gets a little rocky, and it's going to get rockier."

City council interest came a day after Hall County's legislative delegation wrote to Georgia Department of Natural Resources Commissioner Leonard Lombetter concerning the incinerator.

BURNING ISSUE

The battle against incineration

The following is the text of a letter from the Georgia Department of Natural Resources Commissioner Leonard Lombetter on Monday, June 12, 1990, in response to the plans of Enviro-Solutions Inc. The letter was signed by Sen. Nathan Deal and Rep. Jerry Jackson, Betty Brown and Wyo Orr.

Over 6,000 of our constituents have signed petitions regarding the proposed Minds medical waste incinerator being located in Hall County. Our legislative delegation continues to protest any incineration because the hearing held on a holiday (April 12) did not properly follow the public hearing process.

In addition, we continue to be opposed to locating any incinerator in Hall County.

We would appreciate your consideration of this matter.

Incinerator exceeds standards

Lanier Park Hospital's medical waste incinerator exceeds the state of Georgia's safety requirements as governed by the Environmental Protection Division (EPD). The announcement was made after recent media reports related to incinerator safety issues in the northeast Georgia area.

The hospital also practices on-site separation of infectious waste and non-infectious waste to reduce the amount of incineration needed. Any infectious waste is "red-bagged" for incineration. All non-infectious waste, such as paper by-products from hospital clerical areas, is disposed of in area landfills. This policy has been in effect since the hospital opened in 1977.

According to the Georgia Department of Natural Resources, the hospital is not required to have a permit to operate the incinerator due to the low volume of infectious waste generated at the facility. In addition, the manufacturer of the incinerator operated by Lanier Park has stated the device surpasses the state of Georgia's guidelines on hospital medical waste incinerators.

The hospital's incinerator was purchased in 1989 in accordance with the state's safety requirements. The Lanier Park unit is adaptable to add scrubbers, which would further clean emissions, if

the state regulations governing hospital incinerator operations increased.

LANIER PARK HOSPITAL
Gainesville

6/19/90
6A

Incinerator debate requires more fact before decision

OUR COMMUNITY NEEDS to call a halt to the emotionalism in the debate over medical waste incineration, settle back and take a thoughtful, objective look at whether present methods of disposing of medical waste pose an environmental hazard, and, if so, whether incineration as proposed by the Enviro-Solutions firm is the best alternative.

Through all the intense debate over the course of many weeks, comments have been conspicuously absent from what one would think would be a vitally interested party, the medical community. Doctors and hospitals produce most of the medical waste in the community. The Northeast Georgia Medical Center is the region's largest producer. Why haven't its officials commented?

Surprisingly, it appears that the region's largest medical facility hasn't even been asked whether it has any opinions on the matter.

Enviro-Solutions has bought land and proposes to invest more than a million dollars in a facility to incinerate medical waste. Apparently, it hasn't even contacted what presumably would be its largest customer to see if the hospital would be interested in using the facility. This raises questions of what kind of businessman would invest that kind of money in a venture without at least testing the local market interest — unless the local community would provide but a fraction of the total market? Maybe the firm's attorney wasn't kidding when he told the county commission last week that what the firm didn't know, it would learn as it went along.

Such seeming indifference, or the prospect of substantial volumes of imported waste to be incinerated here, doesn't generate confidence.

On the other hand, some environmentally concerned opponents, in recommending alternatives, don't seem to have contacted the hospitals to determine what, if any, alternatives they may consider needed or reasonable.

Technology has given us the means to discover treatments that have prolonged life and made life more livable for the ill. It has enabled us to discover dangers we never knew existed. And we must depend upon continued technology to develop ways to overcome those dangers. That means testing new ideas, new products, new methods.

Incineration may be old hat, but it is a new technology for this particular field. It is so new that operating regulations and standards haven't even been developed.

A regional facility serving more than a third of a state's population shouldn't be a test operation. Any test should be on a much smaller scale.

Hall County citizens might be mistaken in their assessment of potential danger, but they can be forgiven their apprehension given the record — or lack of record — they've seen so far.

6/4/90
6A

Other solutions to medical waste abound

Various times and locations, a medical waste facility at Hampton, S.C. Conditions in the operation of that plant appeared almost inhuman. Workers reported exposure to blood and ash, laden with heavy metals and other toxins with little or no protection and repeated needle sticks. Neighbors, even from miles around, reported odors that were unbearable, ash on their windows and clothes, the loss of enjoyment of their yards even to use an outdoor grill. There were reports of ash with concentrated levels of heavy metals and toxins put into a landfill that was unlined, and sited directly over their underground water supply.



Lillian Hall is a local environmental activist.

Although we keep hearing about medical waste transported from within a 10-mile radius, the fact of the law is that once a facility is sited, imported medical waste cannot be limited to any distance. That would be interfering with interstate commerce. We learned from the head of the state Environmental Protection Division that we are operating under the mistaken belief that the EPA is there to protect them (us) from things that we've done. That's exactly what we thought our tax money was for (them for).

The video being shown around town

at various times and locations, a medical waste facility at Hampton, S.C. Conditions in the operation of that plant appeared almost inhuman. Workers reported exposure to blood and ash, laden with heavy metals and other toxins with little or no protection and repeated needle sticks. Neighbors, even from miles around, reported odors that were unbearable, ash on their windows and clothes, the loss of enjoyment of their yards even to use an outdoor grill. There were reports of ash with concentrated levels of heavy metals and toxins put into a landfill that was unlined, and sited directly over their underground water supply.

This particular DECOM facility is reported to have hundreds of violations. As shocking as this seems, local, state, and federal authorities don't seem to be able to do anything about it. OSHA didn't even know the facility, which had been operating for more

than three years, was even there.

Solutions? You bet, there are. One obvious one is to separate (in the case of the hospitals, 50 to 85 percent) non-infectious wastes from the 15 percent infectious wastes. Lumping them all together only serves to infect ALL of it. This would reduce dramatically the total volume to be disposed of. (And, as the medical waste burners know, sharply cut into their profits.)

Next would be increased use of autoclaving. Don't manufacturers (or designers) not to be autoclaved and reused. Again, disposable is much more profitable to the plastics industry. Think about it, if infectious wastes are handled improperly, someone is stuck with an infected needle. It will do its damage whether the equipment is disposable or reusable. What is fueling this mad rush to burn isn't the risk of handling infectious waste, but rather the huge back-back profits — at \$100 to \$200 a ton.

A recent report by the non-profit Institute for Southern Studies states that the South has become the nation's biggest waste dump. Two-thirds of the nation's wastes are disposed of here. We have the largest per capita toxic chemical discharge and the greatest

risk of cancer in any world. It also has the highest premature death rates, occupational death rates and cancer incidence rates. This is an accident. This report calls for Southern lawmakers to maintain a backward resistance against any solution in the face of extraordinary profit of poison.

What can you do? You can do something. Get involved. Realize that we have a collective and individual responsibility for what happens in our community and our future. That's not just a right but a duty. And besides the political involvement, hear your consumer's right. If you're a financial institution that you will be collecting from, if they finance bringing poison into our community. And in the process of doing something, you might just learn something about the environment, democracy, and just plain human nature. Do more than that you'd better have an answer for your children and grandchildren if they ever ask you what you did to stop pollution on this earth.

And they will.

Lillian Hall is a local environmental activist.

6/4/90
6A

DNR chief: Incinerator OK if requirements are met

By Clay Lambert
The Times Staff Writer

ATLANTA — Georgia's top administrator of environmental policy offered little hope Thursday for a Hill County delegation looking for ways to prevent construction of a medical waste incinerator.

Six county officials along with Gainesville resident and Department of Natural Resources board member Donald Ledbetter, traveled to Atlanta to discuss the unpopular proposal with Leonard Ledbetter, commissioner of the Dept. of Natural Resources. The meeting is the latest attempt by officials to keep Enviro-Solutions Inc., formerly Health In-

ternational, from building the incinerator off May Drive in southern Hill County. The company was granted a rezoning that allowed the incinerator in the zoning of 1980. Since then, opposition to the plant has snowballed. Ledbetter said and more than 6,000 people reportedly have signed petitions asking that the plant not be built. County commissioners are now backtracking, seeking ways to prevent construction of the plant

which would burn potentially infectious medical waste originating up to 20 miles away from downtown Gainesville. The group received little encouragement from the state commission. Ledbetter said. "Unfortunately, I can't deal with petitions," Ledbetter told the delegation, which included three Hill County commissioners. "I have to deal with the law and the law says (Enviro-Solutions) gets a permit if they meet the requirements. Ledbetter already has denied the company one of two permits necessary to build the incinerator but county officials have appealed that decision to the state Attorney

General's Office and filed a separate application for the same permit. Ledbetter suggested the county request to intervene in the appeal a move that would allow the local government to present testimony opposing the incinerator before the administrative law judge who will decide the case. The DNR commissioner said new legislation known as the Comprehensive Solid Waste Management Act will be a locally new tool local governments can use in the future to prevent entrepreneurs from using controversial technologies for waste disposal. The legislation requires governments to



Leonard Ledbetter is the DNR commissioner.

6/8/90
3A

Waste importing ordinance would cause legal fire

Attorney says Hall law proposal aimed directly against incinerator plans

By Clay Lambert
The Times

Hall County commissioners are headed for a legal inferno after considering an ordinance that would ban the importation of biomedical wastes and effectively kill plans for a commercial incinerator on May Drive, an Atlanta attorney said Tuesday.

The ordinance takes aim at all types of wastes but is clearly designed to scuttle plans for a proposed medical waste incinerator in south-Hall County. Commissioners are scheduled to vote on the ordinance June 11.

Representatives of Enviro-Solutions Inc., formerly Minds Incineration Corp., promise to fight the ordinance in court. And, in a letter to county commissioners, John Blackmon, the attorney hired to represent the company, warned of "serious legal consequences" should the board sign the ordinance into law.

The ordinance prohibits the disposal of imported hazardous, toxic, or infectious wastes in Hall County. It is part of a two-pronged commission attack against the company's incineration plans.

The commission also has initiated rezoning proceedings on company land that would force Enviro-Solutions to convince elected officials here of the need for the incinerator.

Several opponents of the Enviro-Solutions plans in Hall County spoke during the commission meeting. They say they have more than 5,000 signatures of area residents who are against the construction of the incinerator.

And, in an election year, at least two commissioners have worked openly to prevent the Enviro-Solutions incinerator.

"I think the Hall County Commission has done about everything we can do to keep this thing away," Commissioner Lou Stargel told incineration opponents. "I think this (ordinance) gives Minds a message: 'We don't want you.'"

Commissioner Jane Hemmer also has opposed the idea of importing wastes into Hall County for incineration.

Blackmon told commissioners Tuesday the ordinance was "highly suspect" and said the incinerator his client proposes would actually improve Hall County's environment.

"This is state-of-the-art technology to be used. And if your doctors and hospitals used this facility, you will immediately have a better environment."

Currently, both Lanier Park Hospital and Northeast Georgia Medical Center operate incinerators for medical wastes described as anything contacting blood. Neither incinerator includes scrubbers designed to

Pleasant, Incinerator

Hall County Commission
John Blackmon, Attorney

Incinerator

(Continued from Page 1B)

remove toxins from the smoke stacks. My client offers a solution, not a problem. The company plans to forge ahead with construction and will review unspecified legal options if the commission passes the ordinance.

Opponents say they interpret the remark as a threat and vowed not to be alienated by legal wrangling.

This is the United States of America, not South Africa, and we do have the right to express ourselves to our commissioners, said Lillian Hall, founder of Lakewatch, an environmental group in Hall County.

Blackmon has represented the company for about three weeks. Enviro-Solutions' interest in incineration in Hall County dates back to the spring of 1989.

Last year, the company applied

for rezoning from an agricultural to an industrial designation for five acres adjacent to a recycling center. It owns at the intersection of Fullenwider Road and May Drive.

Company officials announced plans, therefore, for the incinerator which would burn wastes from outside Gainesville.

The commission granted the rezoning after gaining a number of concessions, including a limit on the area the company could draw from for a waste stream.

Strong opposition to the proposal didn't surface until this April, when the company held a public hearing at the Georgia Mountains Center in conjunction with application for state permits allowing incineration.

The Georgia Department of Natural Resources denied the company a permit for the incinerator at that time. Enviro-Solutions has since re-applied with the DNR.

5/30/90
10,28