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Postal Information

Sociological Inquiry (ISSN 0038-0245) is published quarterly in February, May, August, and November by the University of Texas Press, Journals Department, Box 7819, Austin, Texas 78712. The rates are $24 a year for Institutions and $15 a year for Individuals. Third class postage paid at Austin, Texas. POSTMASTER: Send address changes to *Sociological Inquiry*, University of Texas Press, Box 7819, Austin, Texas 78712.

Sociological Inquiry is published by the University of Texas Press in cooperation with Alpha Kappa Delta. All views or conclusions are those of the authors of the articles and not necessarily those of the editorial staff, the University of Texas Press, The University of Texas at Austin, The University of Texas System or Alpha Kappa Delta.

SOCIOLOGICAL INQUIRY

Volume 53, Number 2/3, Spring 1983

The Quarterly Journal of the International Sociology Honor Society

ARTICLES

*Solid Waste Sites and the Black Houston Community**

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This paper presents data on the siting of solid waste facilities in one of the nation's fastest growing cities, Houston, Texas. The findings reveal that solid waste sites were not randomly scattered over the Houston landscape but were likely to be found in predominantly black neighborhoods and near black schools. Institutionalized discrimination in the housing market, lack of zoning, and decisions by public officials over the past fifty years are major factors that have contributed to Houston's black neighborhoods becoming the "dumping ground" for the area's solid waste.

Much attention in recent years has been devoted to the problem of equality and urban public services. Institutional racism and discrimination have been shown to greatly influence the quality of life in America's urban centers (Feagin, 1978; Knowles and Prewitt, 1970). Wellman asserts that "racism can be seen to systematically provide economic, political, psychological, and social advantages for whites at the expense of blacks and other people of color" (1977:37). Studies that focus on urban service allocation and delivery are inquiries into discrimination and equality (Lineberry, 1977:15). Lineberry describes the problem of differential public services in urban areas:

> That municipal governments may disadvantage the underclass through differential provision of public services, is the more common focus. The other face of services equality, however, may be more important. It arises from the semimonopolistic character of public service delivery systems. . . . Escaping a deteriorating public school system, or a high crime rate or unsightly neighborhoods involve either moving or securing comfort and convenience from the private sector. . . . The ease of exit is roughly proportional to affluence. When racial barriers also exist, minority groups suffer a sort of double jeopardy in attempting to exit an unresponsive monopoly. (1977:174–175)

The idea that the poor and minority groups suffer a differential effect of inadequate public services is a widely held view (Fowler, 1974). The principal factors that contributed to the urban disturbances of the 1960s included dissatisfaction with municipal services in the urban ghettos (e.g., policing, educational institutions, parks and recreational facilities, garbage and refuse collection, etc.). The National Advisory Commission on Civil Disorders found that "inadequate sanitation services are viewed by many ghetto residents not merely as instances of poor public services but as manifestations of racial discrimination" (1967:148). Lower-income and minority neighborhoods in many urban areas are often less well served by municipal governments than their high-income counterparts. Many of the early federal poverty programs were designed to combat these service inequities (Hallman, 1968; Lowry, 1968).

Urban neighborhoods within America's municipalities are not randomly scattered over the urban landscape. Minority and lower-income neighborhoods often occupy the "wrong side of the tracks" and subsequently may receive inadequate public services. The sociospatial groupings that emerge in urban areas are a result of "the distribution of wealth, patterns of racial and economic discrimination, access to jobs, housing, real estate practices, and a host of other variables" (Lineberry, 1977:11). While neighborhoods are not randomly located in the metropolitan complex, neither are nonresidential activities randomly scattered. David M. Smith contends that

> the location of every new facility favours or disfavours those nearby, and thus redistributes well-being or ill-being. Any development of land has similar effects. How people in different areas establish differential claims on society's resources depends upon the spatial exercise of political power. . . . Ultimately, who gets what *where* and how must be viewed as a question of equity or fairness. (1974:294)

Zoning has been the major land use control of external diseconomics and disamenities imposed by nonresidential activities on nearby residents. Externalities as "polluting discharges to air and water, noise, vibrations, traffic congestion and hazard, and aesthetic disamenities" are often segregated from residential areas because of "public goods, or more commonly public bads." These activities are "spatially located, that is, their adverse effects fall off with distance from the source" (Smith, 1974:521–522).

A great deal of attention in recent years has been devoted to the issues of pollution, waste disposal, and the possible health problems that may result from mismanagement of waste. The more than 20,000 active hazardous waste sites scattered across the United States were not publicized until the Love Canal incident made the news. The Environmental Protection Agency estimates that 90 percent of these sites do not meet the federal standards. Waste disposal sites cover more than 100,000 acres of land in the United States; many of these sites are located on prime real estate. As America has developed into a "throw away society," waste collection and disposal is big business. American consumers spend over $4 billion each year to collect and dispose of waste; it will cost consumers over $6 billion a year to collect and dispose of waste by 1985 (Purcell, 1980).

The siting of waste disposal facilities has become a controversial issue in the Houston area. As one of the largest American cities without zoning, Houston's land use pattern is somewhat erratic. A proliferation of waste disposal facilities dots the Houston landscape. A liberal annexation policy has allowed the city to expand from a mere 9 square miles in 1850 to over 550 square miles in 1982. The city's lax enforcement of deed restrictions in many inner-city and minority neighborhoods has contributed to uneven growth and has accelerated neighborhood decline (Bullard and Tryman, 1981). Industrial encroachment into residential areas has become an ever increasing problem in a number of minority neighborhoods. Lower-

income and minority neighborhoods (e.g., "poverty pockets") lie in the path of expanding industrial markets.

The decisions to locate a municipal waste disposal facility near a residential area were political decisions made by local city council members. Prior to 1970, no black or Hispanic person had ever held a city council seat in Houston. Thus, Houston's all-white and all-male city council, with the assistance from its planning and solid waste departments, made key decisions on where to dispose of the city's waste. As landfills and waste disposal sites are considered to be disamenities to residential areas, it seems plausible that white council members would locate these facilities *away* from their neighborhoods (i.e., white neighborhoods).

The development of residential areas in Houston continues along racial and ethnic lines. Specifically, blacks remain segregated from both whites and Hispanics (see Phillips, 1971; Davidson, 1972; Bullard, 1978; Bullard and Pierce, 1979; Bullard and Tryman, 1980a, 1980b). Over three-fourths of the city's blacks live in neighborhoods that are more than 70 percent black (Farrell, Johnson, and Johnson, 1978). Houston's black population has had a steady increase over the past thirty years, growing from 125,000 in 1950 to 440,257 in 1980, or 27.6 percent of the city's population (U.S. Bureau of the Census, 1980).

Thus, the purpose of this study was to test the proposition that waste disposal siting has followed the "path of least resistance" in the Houston area. The research attempts to answer the following three questions:

1. Is there a relationship between the location of waste disposal facilities and racial composition of neighborhoods?
2. Is there a significant difference between the waste disposal siting pattern of municipalities and private sector disposal companies?
3. Are black children more likely to attend schools near municipal landfills than their nonblack counterparts (e.g., whites and Hispanics)?

The Politics of Waste Disposal and the Environment

Prior to 1976, the term "solid waste" meant only one thing to most people: namely, municipal garbage. However, the passage of the Resource Conservation and Recovery Act (RCRA) in 1976 directed the nation's attention to hazardous waste, industrial waste, and to all waste, solid or liquid, that is disposed of in landfills. Jorling (1974:3) has asserted that "prior to the passage of RCRA the effect of our public policy was to subsidize dumping" (1977:3). There were over 14,000 "dumps" in the United States in 1972 that posed a serious environmental and health problem (see Weddle and Garland, 1974:21–22; Cimino, 1975:41–42).

Finding suitable sites for sanitary landfills has become a critical problem nationwide mainly because people are reluctant about living near a facility where garbage is dumped. The standard public reaction has been "not in

my neighborhood'' (Dunne, 1977:1). Solid waste management and land disposal siting have become volatile political issues throughout the nation. There is a general consensus that ''everyone wants you to pick up their garbage, but no one wants you to put it down'' (see Wahl and Bancroft, 1975:24). The ''politics of garbage'' has plunged elected officials deeper into the collection and disposal problems associated with municipal waste. Political ''fall guys'' are often created at which elected officials can point their fingers. When a landfill site is located near a residential area, public officials often place the blame away from their offices onto the federal government, state or other governmental jurisdiction, or private disposal companies (Wahl and Bancroft, 1975).

Christopher Lindley, a city council member from Rochester, New York, adequately summed up the political nature of landfill siting as follows:

> The political problem is not only that people do not like landfills around them anymore, but also the problem of the interrelationship among the communities in a metropolitan area. Traditionally, the public's view of their relationship with the central city has always been ''what's ours is ours and what's yours we share. . . . The central cities have become the dumping grounds frequently for metropolitan social costs across the board. But when we raise the question of a landfill outside our jurisdiction, all of a sudden it becomes intolerable. (in Wahl and Bancroft, 1975:25)

The differential quality of affluent and poor neighborhoods has long been documented. The quality of life in many lower- and working-class neighborhoods is far worse than that in middle- and upper-class neighborhoods (Buttel and Flinn, 1978:436). The various forms of pollution take a heavy toll on inner-city neighborhoods because ''the poor or near poor are the ones most vulnerable to the assaults of air and water pollution, the stress and tension of noise and squalor'' (Zwerdling, 1973:26). Air pollution in inner cities can be found at levels up to five times greater than those in suburban areas; middle- and upper-class households can often shut out the noise, fumes, and odors with their air conditioning, grind up their garbage, and keep out the rats (Zwerdling, 1973:27).

While lower and working classes are subjected to a disproportionately larger amount of pollution within their workplace as well as neighborhoods, these groups have only been marginally involved in the nation's environmental movement (Burch, 1971; Deutsch and Van Houten, 1974; Smith, 1974; Zwerdling, 1973; Buttel and Flinn, 1978; Morrison, 1973; Tucker, 1978; Schnaiberg, 1980). The historical development of the environmental movement in America emerged with agendas that were primarily supported by middle- and upper-middle-class people; the poor and working-class people who often have less favorable environments desire a better physical environment but have less basis to expect a more favorable setting (Morrison, 1973). Many environmental battles were waged that seemed

only to affect the elites and to injure the poor. The mobility of middle-class people makes them less vulnerable to environmental problems than the poor. People and businesses that can afford to flee to the suburbs do so while the poor and the less advantaged stay behind and suffer from poverty and pollution (Zwerdling, 1973:27).

Research Procedure

This case study of Houston's municipal solid waste disposal system was developed from in-depth interviews with personnel from Houston's Solid Waste Management Division and the Houston Air Quality Board. Initial contacts were made by telephone with both city departments and personal interviews were undertaken with key administrative personnel.[1] During these interviews field notes were taken and these form the basis for this report. On-site visits were made to the solid waste disposal facilities to verify the data obtained from the interviews.

Secondary data were also used as a source for this study. The major sources of secondary data include: (1) the Texas Department of Health Solid Waste Active Permit Sites in Harris County as of August 30, 1979; (2) the U.S. Bureau of the Census tract and block statistics for the Houston–Harris County area; and (3) pupil enrollment data for the Houston area public schools.

Houston-Owned Garbage Incinerators

The City of Houston operated its own garbage disposal facilities up until the early 1970s. The historical disposal approaches that have been used by Houston include incineration and landfills. One of the oldest city-owned incinerators was located in Houston's Fourth Ward (see Table 1). This site dates back to the 1920s. Other city-owned incinerators include the Patterson Street site, the Kelly Street site, the Holmes Road site (located on Bellfort), and the Velasco site. The data in Table 1 clearly illustrate that the City of Houston historically located its incinerators in nonwhite neighborhoods. Specifically, four of the five incinerator sites were located in predominantly black neighborhoods; the sixth site was located in a predominantly Hispanic neighborhood. The five neighborhoods where Houston incinerators were operated include: (1) Fourth Ward, (2) West End/Cottage Grove, (3) Kashmere Gardens, (4) Sunnyside, and (5) Second Ward or ''Segundo Barrio.'' The cost of operating these incinerators and the problems of pollution generated by these systems were major factors in their closing.

Houston Mini-Incinerator Project

The City of Houston contracted with a private company to conduct a ''pilot project'' of mini-incinerators that were supposed to be more efficient

TABLE 1

City of Houston Garbage Incinerators[a]

Site of Incinerator	Neighborhood	Ethnicity	Location
Fourth Ward (Gillette and Hobson)	Fourth Ward	Black	Southwest
Patterson Street (2500 Patterson and Katy Freeway)	West End/ Cottage Grove	Black	Northwest
Kelly Street (North Loop and Eastex Freeway)	Kashmere Gardens	Black	Northeast
Holmes Road (Bellfort and South Freeway)	Sunnyside	Black	Southeast
Velasco (Velasco and Navigation)	Second Ward	Hispanic	Southeast

[a]The above Houston-owned garbage incinerators were in operation from the 1920's to 1975.

(i.e., cost less to operate and burn cleaner). The City of Houston invested $1.9 million in a contractual agreement with Houston Natural Gas Company in 1972 for these mini-incinerators that were thought to be "pollution free." Three sets of incinerators were installed in the city (see Table 2). One site was located on Westpark, another site was located on Kelly Street near the North Loop, and the third site was located on Sommermeyer in northwest Houston. The Northwest Service Center Incinerator site is the current site of Houston's first garbage transfer station. The incinerator and the present garbage transfer station are located in the Carverdale neighborhood, a predominantly black neighborhood. In addition, the Kelly Street mini-incinerators are also located in a predominantly black neighborhood (Kashmere Gardens). The Westpark mini-incinerator site, which is located on Westpark near the Southwest Freeway, was adjacent to a predominantly white neighborhood (Larchmont). Pilot tests of the mini-incinerators found them not to be "pollution free" because they performed with mixed results. The mini-incinerators did not meet the pollution standards of the Houston Air Quality Control Board and were shut down after a short period of operation in the mid 1970s.

TABLE 2

Mini-Incinerators Operated by the City of Houston[a]

Site of Mini-Incinerator	Neighborhood	Ethnicity	Location
Westpark (5900 Westpark)	Larchmont	White	Southwest
Kelly Street (North Loop and East Freeway)	Kashmere Gardens	Black	Northeast
Northwest Service Center (14300 Sommermeyer)	Carverdale	Black	Northwest

[a]The City of Houston contracted with a private firm, Houston Gas Company, to operate a "pilot" mini-incinerator project in 1972.

City of Houston Landfills

The City of Houston was in the landfill business for over fifty years. At least one of Houston's garbage dumpsites dates back to the 1920s. Table 3 includes a listing of Houston landfill sites. The Fourth Ward dump was located on the site of present Jefferson Davis Hospital. That is, Jefferson Davis Hospital sits on top of Houston's Fourth Ward dump. The hospital was constructed in 1937–38; the dumpsite was cleared and filled in for the building of the hospital. The Fourth Ward dumpsite extended from Taft Street on the west all the way to Lamb Street on the east. The Fourth Ward Incinerator on Gillette and Hobson was near the center of the dump.

Another Houston landfill that is over thirty years old is the Sunnyside site on Bellfort and Woodard, the Sunnyside Dump. Adjacent to the Sunnyside site on Bellfort is the Reed Road landfill. These two landfill sites are located just east of the Holmes Road Incinerator on Bellfort in southeast Houston. The landfill site on Bellfort and Woodard, the site on Reed Road and the Holmes Road Incinerator—Houston's largest incinerator—are located in the heart of the predominantly black Sunnyside neighborhood. This area has a long and rich history as a semirural black community. The major business corridor in the Sunnyside neighborhood lies along Reed Road. Historically, Reed Road is to Sunnyside what Lyons Avenue is to Fifth Ward, Dowling Street is to Third Ward, and West Dallas is to Fourth Ward. The Sunnyside area developed as a "self-

TABLE 3

City of Houston Municipal Landfill Sites[a]

Landfill Site	Neighborhood	Ethnicity	Location
Fourth Ward (Gillette and Allen Parkway)	Fourth Ward	Black	Southwest
Sunnyside (3500 Bellfort)	Sunnyside	Black	Southeast
Reed Road (2300 Reed Road and Kish)	Sunnyside	Black	Southeast
Kirkpatrick (Kirkpatrick and HB & T Railroad)	Trinity Gardens	Black	Northeast
West Donnovan (West Donnovan and Ella Boulevard)	Acres Homes	Black	Northwest

[a]The above landfill sites were not permitted by the Texas Department of Health. The period of operation of the sites was from the 1920s to the early 1970s.

contained'' segregated community in the 1940s. Much of the development of the neighborhood took place along Holmes Road. The placing of these waste disposal facilities along the major streets in this area is equivalent to such facilities being placed along Bellaire Boulevard in the City of Bellaire or along University Boulevard in the City of West University Place or along Main Street in the City of Houston.

The Kirkpatrick landfill in Trinity Gardens operated during 1970 and 1971. This landfill is also located in a predominantly black neighborhood. Residents in the neighborhood strongly protested the siting of the landfill in their neighborhood. However, the site was opened and operated for a short period of time.

The West Donnovan site off Ella Boulevard or the ''Acres Homes Dump'' has been an issue in this predominantly black neighborhood in northwest Houston. This northwest Houston neighborhood has four solid waste sites that were permitted by the Texas Department of Health from 1970 to 1975.

In tracing the historical development of Houston's waste disposal systems, the data revealed that Houston has operated incinerators and

landfills, the earliest of which date back to the 1920s. Houston initiated a ''pilot project'' of mini-incinerators in the early 1970s that was not successful. Houston incinerators and landfills were more likely to be located in black Houston neighborhoods than nonblack Houston neighborhoods (see Table 4). Specifically, four (80 percent) of the five Houston-owned incinerators were located in black neighborhoods, while one incinerator (20 percent) was located in a nonblack neighborhood (i.e., it was located in a Hispanic neighborhood); two (66.7 percent) of the three mini-incinerators Houston operated under its pilot program were located in black neighborhoods, while the third site was near a nonblack neighborhood. The location of Houston's landfill sites revealed that all five sites (100 percent) were operated in predominantly black neighborhoods.

Texas Department of Health Permitted Houston Landfills

Between 1970 and 1978, the Texas Department of Health permitted a total of twenty-one solid waste sites in the Houston area. Of the twenty-one solid waste sites permitted by the state, eleven (or 54.2 percent) were located in predominantly black neighborhoods (blacks constituted 26 percent of the Houston population in 1970 and 27.6 percent in 1980). The Texas Department of Health permitted a total of six landfill sites to receive municipal garbage from 1970 to 1978 in the Houston area; five of the six Houston landfills (83.3 percent) were located in predominantly black neighborhoods and the sixth landfill site was located near a predominantly white neighborhood undergoing racial transition (see Table 5).

The City of Houston was not alone in its siting of municipal landfills in predominantly black neighborhoods. The data in Table 5 indicate that the City of West University Place and the City of Bellaire both located

TABLE 4

Summary of City of Houston Solid Waste Disposal Sites

Waste Disposal Sites	Ethnicity		Total
	Black	Nonblack	
Incinerators	4 (80.0%)	1 (20.0%)	5 (100.0%)
Mini-incinerators	2 (66.7%)	1 (33.3%)	3 (100.0%)
Landfills	5 (100.0%)	—	5 (100.0%)

TABLE 5

Texas Department of Health Permitted Municipal Landfill Sites, Houston, Texas, 1953–1978

Landfill Site	Year Permitted/ Opened	Neighborhood	Ethnicity
City of Bellaire (9792 Ruffino)	1953[a]	Riceville	Black
West University Place (9610 Ruffino)	1956[b]	Riceville	Black
American Refuse Systems (1140 Holmes Road)	1970	Almeda Plaza	Black
Browning Ferris Industries (11013 Beaumont Highway)	1971	Chatwood	Nonblack[c]
Browning Ferris Industries (1140 Holmes Road)	1978	Almeda Plaza	Black
Southwestern Waste Management (11800 E. Houston Dyersdale Road)	1978	Northwood Manor	Black

[a]This date represents the year in which the City of Bellaire site opened; the site was later permitted in 1970.
[b]This date represents the year in which the West University Place site opened; the site was later granted a permit in 1970.
[c]The Chatwood subdivision is a predominantly white area that lies within Houston's Community Development Program Settegast Target Area. The Settegast Target Area is a racial transitional area because its racial composition has increased from 40 percent black in 1970 to over 70 percent black in 1980.

their landfills during the mid 1950s in a predominantly black neighborhood in southwest Houston, namely, Riceville. The Riceville neighborhood dates back to the 1850s. The area was developed as a rural community surrounded by rice fields. The City of Houston annexed the Riceville community in 1965. However, the area is still without many neighborhood amenities such as paved streets, regular garbage pickup, running water, and sewer and gas hookups. It seems somewhat ironic that two virtually all-white cities (Bellaire and West University) would select the nearby all-black Riceville neighborhood as the site to dispose of their garbage. On the other hand, the Riceville community after nearly seventeen years since annexation has

yet to receive regular garbage pickup services on all of its streets.

When the City of Houston prepared to discontinue its own waste disposal facilities, private waste disposal companies were used to fill the void. The City of Houston contracted with a private waste disposal company (American Refuse Systems, Inc.) in 1968 to dispose of city waste by landfill. The city contract with American Refuse Systems was extended in 1971. From 1969 to 1972, American Refuse Systems operated five landfill sites: (1) Ella site, (2) Kirkpatrick site, (3) Almeda site, (4) Holmes Road site, and (5) Beaumont Highway site. American Refuse Systems was subsequently bought out by the Houston-based Browning-Ferris Industries (BFI), the "General Motors" of the garbage disposal business. Browning-Ferris Industries or its subsidiaries operated six state-permitted sites from 1970 to 1978. Five (83.3 percent) of the six landfill sites were located in predominantly black Houston neighborhoods; the sixth site was located in a nonblack transitional neighborhood, the Chatwood subdivision (see Table 6).

TABLE 6

Browning Ferris Industries Landfill Sites, Houston, Texas, 1970–1978[a]

Site	Year of Permit	Neighborhood	Ethnicity	Location
American Refuse (1140 Holmes Road)	1970	Almeda Plaza	Black	Southeast
International Disposal (2100 Nieman Lane)	1970	Acres Homes	Black	Northwest
Browning Ferris Industries (11013 Beaumont Highway)	1971	Chatwood	Nonblack	Northeast
Tex-Haul, Inc. (7200 Tidwell)	1972	Settegast	Black	Northeast
Browning Ferris Industries (1140 Holmes Road)	1978	Almeda Plaza	Black	Southeast
Southwestern Waste Management (Whispering Pines) (11800 E. Houston Dyersdale Road)	1978	Northwood Manor	Black	Northeast

[a]The above landfill sites are owned by Browning Ferris Industries or its subsidiaries.

Solid Waste Sites and Neighborhood Schools

A great deal of public opposition to landfills has occurred in Houuston neighborhoods. A central theme of this opposition seems to center on the location of landfill sites near neighborhood schools. The lack of city ordinances or restrictions in locating landfills has contributed to the siting concerns by residents of affected areas. Landfills located near schools can present special problems: (1) schools may not have air conditioning; (2) the neighborhood may not have sidewalks and the students may have to walk along the streets in going to and from school; and (3) increased truck traffic may present a special safety problem for elementary school age children.

The data in Table 7 reveal that solid waste sites are located near a significantly large number of Houston area schools. A disproportionately large number of predominantly black schools were found near solid waste sites than their nonblack counterparts. This was true for city-owned landfills as well as privately owned landfills. Specifically, the landfill sites that were operated by the City of Houston were located near ten public schools; all ten schools were predominantly black schools. The twenty-one solid waste sites that were permitted by the Texas Department of Health between 1970 and 1978 were located near forty-seven schools of which thirty-one

TABLE 7

Racial Composition of Area Schools near Solid Waste Sites[a]

Solid Waste Sites	Ethnicity of Schools		
	Black	Nonblack	Total
City of Houston landfills (1920–1976)	10 (100.0%)	— —	10 (100.0%)
Texas Department of Health permitted solid waste sites (1953–1978)	31 (66.0%)	16 (34.0%)	47 (100.0%)
Texas Department of Health permitted municipal landfills (1953–1978)	13 (77.0%)	3 (23.0%)	16 (100.0%)
Browning Ferris Industries landfills in Houston (1970–1978)	18 (85.7%)	3 (14.3%)	21 (100.0%)

[a]The above schools are located in the neighborhoods and census tracts where the solid waste sites were located.

(66 percent) were predominantly black. The six Texas Department of Health municipal sites (licensed to receive municipal garbage) permitted in Houston were located near sixteen schools, ocver three-fourths (77 percent) of which were mostly black schools. And the six Browning-Ferris Industries landfill sites were located near twenty-one schools, 85.7 percent of which have a majority of black pupils. These data lend support to the notion that Houston's black school children are more likely to attend schools near landfills than their nonblack counterparts.

Conclusions

The conclusion that can be drawn in this paper reveals that the City of Houston located and operated solid waste disposal sites (incinerators and landfills) primarily in black neighborhoods. Thus, black Houston residents are more likely to live near Houston waste disposal sites than nonblacks. This historical pattern of municipal waste disposal siting occurred over a fifty-year span.

The private waste disposal industry in Houston has followed the lead of local municipalities (cities of Houston, Bellaire, and West University Place) in locating their solid waste sites; that is, Houston solid waste disposal sites are more likely to be located in predominantly black neighborhoods than nonblack neighborhoods. A disproportionately large percentage of waste disposal sites are located near predominantly black schools. Thus, the data indicates that black children are more likely to attend schools that are near solid waste sites than their nonblack Houston counterparts.

The Texas Department of Health, a state permitting agency, has not deviated significantly from the long established pattern of siting Houston municipal landfills in black neighborhoods. The state's record on Houston landfill permits clearly demonstrates that a significantly large percentage of such facilities are permitted in predominantly black neighborhoods.

Citizen opposition and environmental concerns over waste disposal are likely to increase and intensify in the future. Public opposition along with a shrinking pool of "cheap" land will force the adoption of alternative methods of waste disposal (e.g., resource recovery). However, landfills are likely to be with us for some time as the chief method of waste disposal.

Finally, the jury is still out on the possible health hazards of municipal waste disposal sites on humans. That is, the long-term effects of municipal waste disposed of in landfills are not known. However, landfill sites are spatially localized; adverse effects decrease with distance from the landfill sites. Those neighborhoods and schools that are nearest to the waste disposal sites are likely to pay a significantly higher health price (i.e., shorter lives, illnesses, and traffic hazards for children). It appears that institutionalized discrimination through the siting of waste disposal facilities

has systematically provided social and economic advantages for whites at the expense of blacks, because whites do not live around or send their children to schools near landfills.

ENDNOTES

*Paper presented at the annual meeting of the Southwestern Sociological Association, March 17-20, 1982, San Antonio, Texas.

'Personal interviews were conducted between November 13, 1981 and February 10, 1982. Key City of Houston staff persons interviewed included Dr. Ta-Bin Yim, Director of Planning, Solid Waste Management Division; Mr. Anthony Lamott, an administrator in the Houston Solid Waste Management Division and city employee since 1956; Mr. Carl Seltzer and Mr. Virgil Lehmburg, both of the Houston Air Quality Control Division.

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