

Zoning Law, Health, and Environmental Justice: What's the Connection?

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Zoning laws determine what types of land uses and densities can occur on each property lot in a municipality, and therefore also govern the range of potential environmental and health impacts resulting from the land use. Zoning regulations are the most ubiquitous of the land use laws in the United States, as well as in many other countries.¹ As such, they have far-reaching effects on the location of noxious uses, and any concomitant environmental or human health impacts.

Zoning has enormous implications, in general, for shaping our environment, and because changes to zoning are made through a political process, it has possibilities for abuse. One zoning expert stated:

I suppose what really disturbs me is that because zoning is the most universal of the legal tools for shaping the character of the municipality, any unwise use of the process has a far greater impact upon our national character than does the abuse of a less widely employed device.²

The uneven spatial distribution of noxious uses and their potential adverse effects are a major focus of environmental justice research. Environmental justice has been defined as “the provision of adequate protection from environmental toxicants for all people, regardless of age, ethnicity, gender, health status, social class, or race.”³ Much of the environmental justice research deals with the presence of noxious uses within communities, and the resulting disproportionate burden on such communities, which are generally poor neighborhoods and/or communities of color.⁴ However, the underlying zoning designations and

subsequent zoning changes are rarely factored into the analysis.

In fact, zoning tends to act as the “gatekeeper” in terms of where noxious uses can be legally sited within a municipality, but the ramifications of zoning on environmental health and equity have been somewhat hidden. Zoning is often overlooked as a root enabling cause of disproportionate burdens/environmental injustice. Based on criteria of “appropriateness,” zoning seemingly reflects the natural order of things. However, zoning designations were originally determined by a human decision-making process, and zoning is changed all the time. Under what circumstances are zoning designations changed? What types of areas have received zoning changes? Who requests them and shepherds them through the labyrinthine system? Which neighborhoods are protected by zoning regulations regarding proximity to industrial uses? Does zoning differentially protect certain property values/land uses/people?

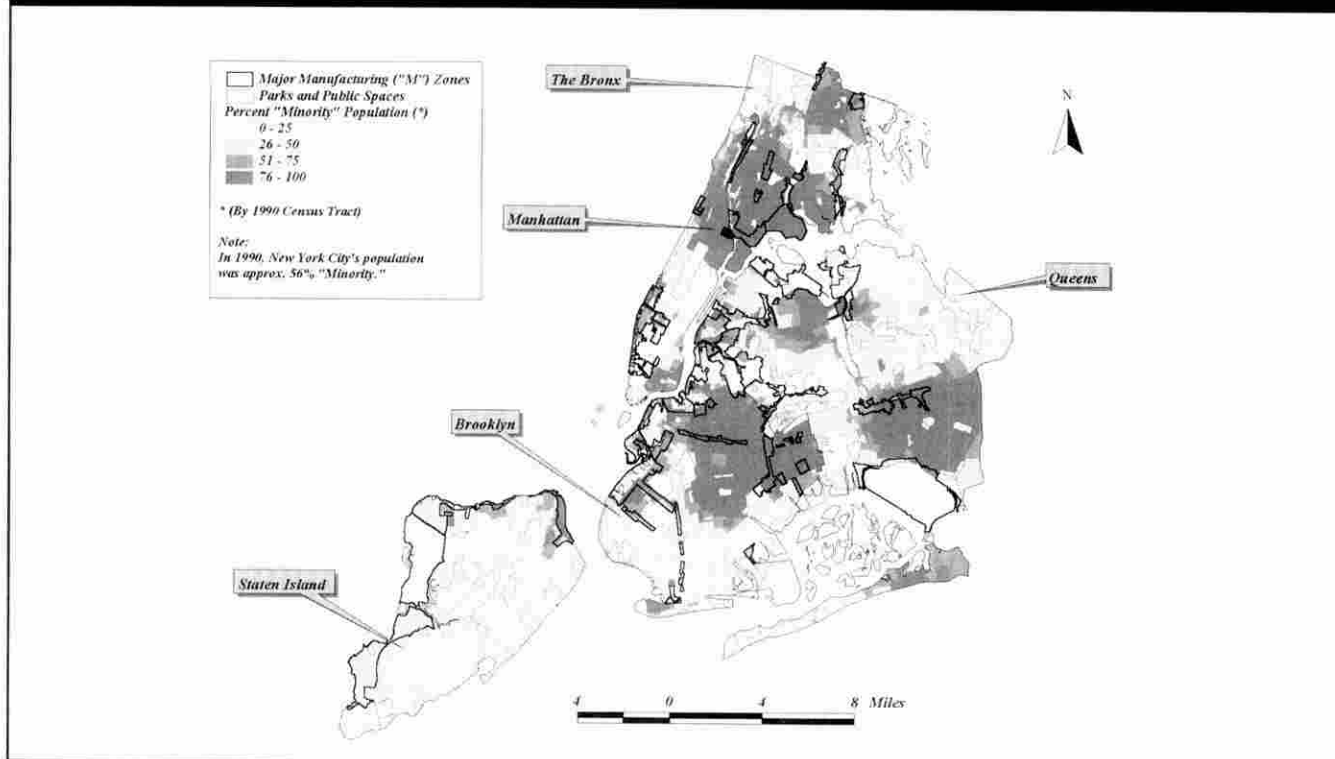
This paper explores the relationship between land use laws and environmental equity, and the implications of these laws for public health. Using New York City as a case study, the workings of the zoning ordinance were documented over time to show the effects of these laws on environmental justice and health concerns.⁵ This paper looks at the location of “M” zones, or manufacturing zones, in New York City,⁶ and the nearby residential populations potentially affected by any environmental and health hazards resulting from the noxious land uses within the M zones. M zones are the only areas within the city legally permitted to contain noxious uses, and M zones are not distributed evenly throughout the city, and thus affect some populations more than others. (See Figure 1.)

This paper also looks at changes to the areal extent of M zones over time (1961–1998)⁷ via the legal mechanisms of the zoning map change process: where M zones were en-

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FIGURE 1. MAJOR MANUFACTURING ZONES AND PERCENT “MINORITY” POPULATION IN NEW YORK CITY.



Data Sources: U.S. Census Bureau, 1990; New York City Department of City Planning, Citywide Industry Study: Geographical Atlas of Industrial Areas (New York: New York City Department of City Planning, January 1993).

larged in area (“increases”), as well as where they were diminished in area (“decreases”), relative to the demographic and socioeconomic characteristics of proximate populations.⁸ Again, these zoning changes were not distributed evenly throughout the city, and thus have affected different populations differently.

In summary, this paper investigates the role played by zoning laws in the distribution of noxious land uses, and examines whether zoning, which is supposed to protect the public welfare, in fact contributes to disproportionate environmental loadings, and thus perpetrates and perpetuates environmental injustices and adverse health impacts for some of New York City’s population.

The first part of this paper reviews the environmental justice implications of zoning, using New York City as a case study. Historical land use patterns, regulatory background, and policy background; a Geographic Information Systems (GIS) spatial analysis of industrial zoning changes from 1961–1998; interviews with zoning experts; and five detailed neighborhood-level longitudinal comparison studies were the main components of the case study investigation. The second part of this paper takes the findings of the case study research and applies them to an exploration of the themes of NIMBY-ism (Not In My Back Yard), the public participation process, the regulatory and policy framework, and other possible mechanisms for achieving environmental justice.

NEW YORK CITY’S INDUSTRIAL ZONING AND ENVIRONMENTAL JUSTICE

Environmental and health impacts of industrial zones

Although New York City still has a substantial number of manufacturing facilities within its M zones, in recent decades much of this manufacturing activity has left the city, replaced in many places by waste-related facilities, such as solid waste transfer stations, medical waste treatment facilities, sludge pelletization plants, waste water treatment plants, recycled materials handling facilities, auto salvage yards, scrap metal processing plants, construction and demolition debris processing plants, combined sewer overflow outfalls, junkyards, and marine transfer stations. These facilities are limited as to where they can be sited, generally only being permitted in areas designated as M zones.⁹

Industrial zones generally carry a higher environmental burden than do purely residential neighborhoods in terms of pollution impacts and risks.¹⁰ These impacts stem directly from industrial processes as well as from associated heavy truck traffic. For instance, just one solid waste transfer station may require 1,000 truck trips per day to access its facility through a residential neighborhood, and some neighborhoods may have twenty or more of these facilities.¹¹ The adverse

impacts from truck traffic include reduced pedestrian safety and increased air pollution, noise, vibration, and traffic congestion.

The impacts from industrial and waste-related processes include emissions of toxic substances to air, soil, and water; visual blight; illegal dumping of hazardous materials; and safety and health risks from the use and storage of hazardous materials. Many of these impacts have been suspected of being linked to diseases, especially respiratory ailments and various types of cancers. Although there are uncertainties in assessing the exact impacts of noxious land uses on human health, there are numerous reported cases of nearby communities being affected by abnormally high rates of cancers and other debilitating, chronic, life-threatening, or rare diseases. These cases have been documented predominately outside the realm of traditional epidemiology.¹²

As an example drawn from New York City of the health impacts from noxious land uses, parts of the city closest to the heaviest industrial zones have extremely elevated rates of asthma.¹³ For instance, the Hunts Point Peninsula and Mott Haven sections of the South Bronx are major industrial and waste-processing areas that also contain roadways having some of the city's highest volume of vehicular traffic. According to figures issued by the New York City Department of Health, these areas have a 250 percent higher rate of childhood asthma hospitalization than New York City, and a 1,000 percent higher rate than that of New York state.¹⁴

The scope of these impacts is not trivial: About 22 percent of New Yorkers reside in or adjacent to a major industrial zone, according to the GIS analysis conducted during this research.¹⁵ The GIS allowed me to map the major M zones and the re-zoning actions in order to examine the pattern of industrial zones and zoning changes. These locations were overlain with a spatial database of census tracts, linked to attribute data of population characteristics, such as race/ethnicity and household income. New York City was divided into 2,218 census tracts for the 1990 census. Census attribute data from 1960, 1970, 1980, and 1990 were mapped and compared using a standard deviation classification method in order to allow longitudinal comparison of deviation from the average, since absolute numbers for income and the percentage of "minorities"¹⁶ changed drastically over the four-decade period.

Population information was aggregated at the following geographic levels: citywide, boroughwide, census tracts within major M zones, census tracts within a half-mile of large and very large M zones "increases," and census tracts within a half-mile of large and very large M zone "decreases," for each of the four census periods. Re-zoning actions were defined as "increases" if the areal extent of the M zone was larger after the re-zoning than before, or if the zoning designation had been changed to allow "heavier" (potentially "dirtier" or more polluting) industrial uses. "Decreases," on the other hand, were defined as re-zoning actions that re-

sulted in a reduction of the areal extent of an M zone, or the zoning designation being changed to permit only "lighter" (less polluting) industrial uses and prohibit the "heavier" uses formerly allowed.

The re-zoning actions were classified by type and magnitude, and were aggregated both by decade and by borough. Five size categories were used: "minor boundary adjustments" (zoning change measured in feet); "small" (one block or less); "medium" (more than one block, up to four blocks); "large" (more than four blocks, up to ten blocks); and "very large" (more than ten blocks). Zoning changes were categorized as to type based on the "before the change" zoning designation and the "after the change" designation. This resulted in nineteen different categories of zoning changes, reflecting the various combinations of sizes and types. This matrix of all industrial zoning changes for 1961–1998 was then incorporated into the GIS and mapped. Half-mile buffers were generated around each "large" and "very large" zoning change and intersected with the census data to enable characterization of the proximate population.

The GIS analysis found that people living in or directly adjacent to the major M zones were more likely to be a member of a minority group (see Figure 1 and Table 1), and were more likely to be poorer than the average New Yorker. For instance, the mean household income in the census tracts within M zones citywide was 16 percent lower than for the city as a whole, and the mean household income in the M zones of each borough was lower than borough averages for every borough and every time period (1960, 1970, 1980, and 1990).¹⁷ (See Figure 2 and Table 2.)

This characterization of the population within M zones also extends to those in close proximity to noxious land

LEGEND FOR TABLES AND FIGURES

M Zone: District zoned for manufacturing uses.

Increases: M zone rezoned either to expand the boundaries of the M zone in areal extent or to change the zone designation to allow "heavier" (potentially more polluting) industrial uses within the zone.

Decreases: M zone rezoned either to reduce the boundaries of the M zone in areal extent or to change the zone designation to allow "lighter" industrial uses and prohibit "heavier" industrial uses within the zone.

"Very Large" Changes: Rezoning actions affecting M zones where the change involves more than ten square blocks.

"Large" Changes: Rezoning actions affecting M zones where the change involves more than four and up to ten square blocks.

"Medium" Changes: Rezoning actions affecting M zones where the change involves more than one and up to four square blocks.

"Small" Changes: Rezoning actions affecting M zones where the change involves up to one square block.

"Minor" Changes: Rezoning action affecting M zones where the change involves a very small area, measured in feet.

One square block in New York City averages between 1 and 3 acres.

TABLE 1. "MINORITY" POPULATION WITHIN MAJOR M ZONES BY BOROUGH PER DECADE, AS COMPARED WITH NEW YORK CITY AND BOROUGH AVERAGES.

	PERCENTAGE MINORITY POPULATION					
	BRONX	BROOKLYN	MANHATTAN	QUEENS	STATEN ISLAND	NEW YORK CITY
1960 – Borough	25.4	21.6	39.1	9.6	5.8	22.9
1960 – M Zones	38.4	31.8	33.1	11.7	7.6	28.2
1970 – Borough	49.2	38.4	45.3	20.2	8.9	36.1
1970 – M Zones	68.3	45.9	42.5	21.5	18.9	43.6
1980 – Borough	63.7	49.0	43.6	32.2	13.4	44.2
1980 – M Zones	75.1	54.0	37.9	32.2	33.3	48.4
1990 – Borough	77.1	59.7	51.0	51.7	19.8	56.6
1990 – M Zones	87.4	63.6	37.9	51.2	33.1	60.7

uses: Previous studies have shown that in the borough of the Bronx, for example, people living in closest proximity to Toxic Release Inventory facilities or solid waste-processing plants have a higher likelihood of being a member of a minority group and being poorer than the Bronx average.¹⁸

I will now turn to a discussion of some of the historical factors involved with zoning and, in particular, industrial zoning changes in New York City, before moving on to how these findings can be applied in the regulatory and policy realms to enhance environmental justice.

What are the purposes of zoning?

Zoning began as an attempt to control land use in order to protect public health, safety, and welfare within an existing legal concept of the "police powers." In *Public Health Law: Power, Duty, Restraint*, Lawrence Gostin states that "the police power is the most famous expression of the natural authority of sovereign governments to regulate private interests for the public good,"¹⁹ and defines the police power as:

The inherent authority of the state (and, through delegation, local government) to enact laws and promulgate regulations to protect, preserve, and promote the health, safety, morals, and general welfare of the people. To achieve these communal benefits, the state retains the power to restrict, within federal and state constitutional limits, private interests — personal interests in autonomy, privacy, association, and liberty, as well as economic interests in freedom to contract and uses of property.²⁰

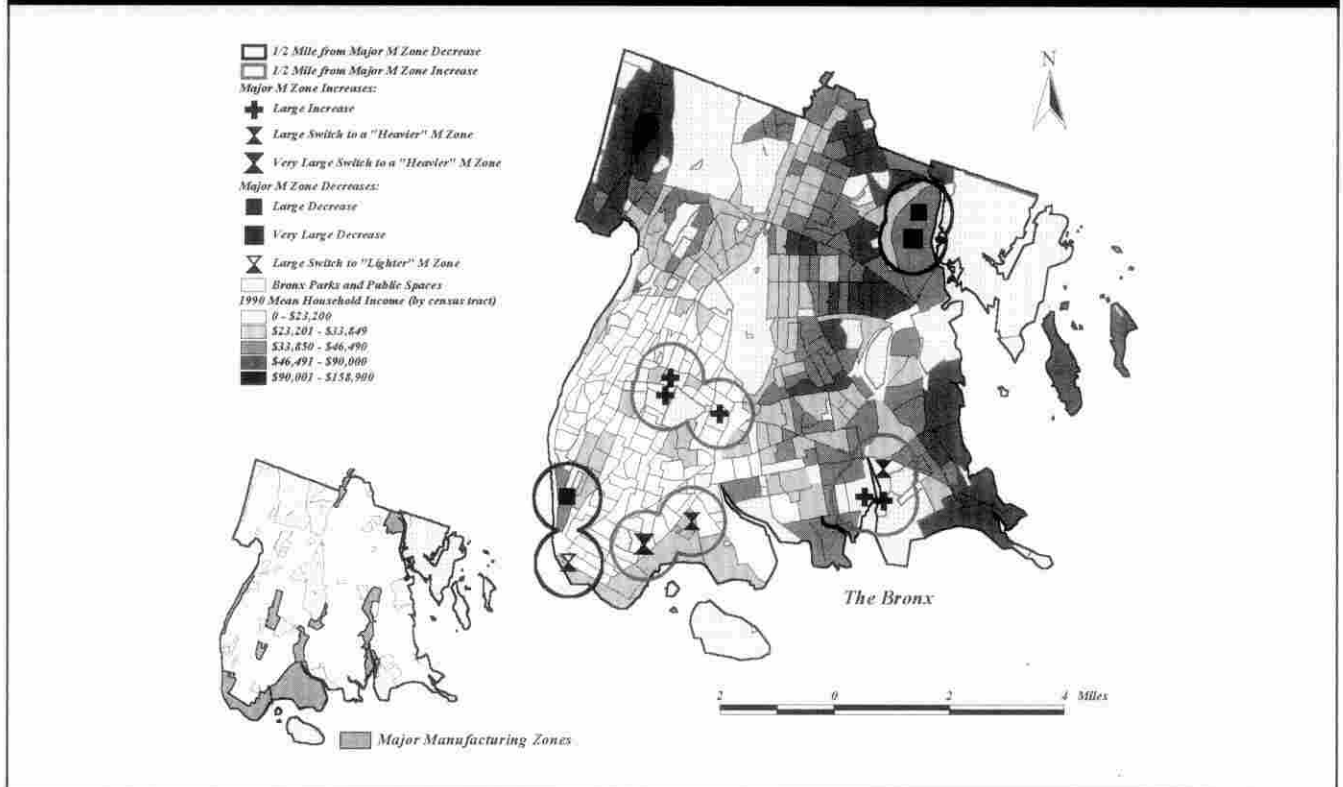
The power to enact zoning ordinances (and engage in their police powers) is delegated to local governments by the state through enabling acts. Section 3 of the Standard State Zoning Enabling Act states:

Such [zoning] regulations shall be made in accordance with a comprehensive plan and designed to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate

TABLE 2. MEAN HOUSEHOLD INCOME WITHIN MAJOR M ZONES BY BOROUGH PER DECADE, AS COMPARED WITH NEW YORK CITY AND BOROUGH AVERAGES.

	MEAN INCOME (IN DOLLARS)					
	BRONX	BROOKLYN	MANHATTAN	QUEENS ISLAND	STATEN CITY	NEW YORK CITY
1970 Borough	9,635	10,181	14,242	13,003	12,934	11,638
1970 M Zones	7,889	9,113	10,597	11,549	10,921	9,696
1980 Borough	16,402	17,653	27,163	22,895	25,795	20,960
1980 M Zones	14,797	15,988	19,779	20,383	20,075	17,646
1990 Borough	29,176	33,926	57,114	41,180	50,570	41,700
1990 M Zones	25,218	31,658	44,365	36,778	43,105	35,453

FIGURE 2. MAJOR MANUFACTURING ZONE CHANGES IN THE BRONX, 1961–1998, WITH 1990 MEAN HOUSEHOLD INCOME WITHIN HALF MILE OF ZONING CHANGES.



Data Sources: U.S. Census Bureau, 1990; New York City Department of City Planning, Map Sections 1–35, Archival Record of Zoning Map Amendments, 1961–1998.

light and air; to prevent the overcrowding of land; to avoid undue concentration of population; to facilitate the adequate provision of transportation, water, sewage, schools, parks and other public requirements. Such regulation shall be made with reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout such municipality.²¹

Zoning in New York was conceived as a means of protecting the public through the separation of “incompatible” land uses, and limitations on building bulk, height, and density. Typically, zoning serves to segregate broad categories of land uses, such as residential, commercial, and industrial, and to place controls on what goes where.

But some of the implicit purposes of zoning include the protection of certain property values, the exclusion of certain undesirable uses (and people) from areas determined to be valuable and worthy of protection, and the enhanced stability to property values and less risky real estate speculation brought about by zoning.²² To be accepted by the public as a

legitimate instrument of public law, and not be seen primarily as placing objectionable limitations on private property rights, the need to impose zoning has been couched in terms of protecting the public’s health, safety, and welfare.

Who is the public that zoning is intended to protect? Public protection is interpreted according to the standards and values of the policymakers at the time, and each government is free to determine the limits to public welfare and exactly who is the public that is being protected, with virtually no oversight from higher levels of government. In the early days of New York City zoning, documents stated in a rather straightforward manner that zoning was not intended or expected to protect everyone equally. Phrases such as “maintaining the character of the better residential neighborhoods” and “preserving property values in the better residential and commercial areas” were often used when giving reasons for instituting zoning or zoning changes.²³

New York City promulgated the nation’s first comprehensive zoning ordinance in 1916 for the stated purpose of public protection, in the spirit of earlier tenement housing reform laws and sanitary infrastructure improvements. In reality, a main impetus to the creation of New York City’s zoning ordinance was a desire to protect the property values

of exclusive commercial and residential properties and to make real estate investments more secure:

The tendency of districting [zoning] is to convert interests in land — which in undistricted cities have proved to be of uncertain and fluctuating value — from speculative into conservative investments. It is like changing a somewhat risky 10 percent bond or stock into a conservative one. The result is an increase of fully 50 percent in its value, with no lack of buyers.²⁴

With zoning, an investor could expect a stable and unchallenged return from any use within the law, no matter how sensitive or irascible its present and future neighbors. That is, whatever the costs of complying with zoning ordinances — reducing rentable space to comply with density requirements, for example — these would be less than the costs envisaged from a future neighbor whose nuisance of a business might drive tenants away. Further, zoning restrictions were a surer hedge against loss than going to court against a detrimental neighbor without winning the case, or as the plaintiff being taken to court, deprived of the right to continue without being compensated for the loss.²⁵

Zoning, in one fell swoop, took care of two of the major property value problems of the day in New York: the overbuilding of commercial space in bulk and height, so as to rob nearby structures of their light and air, and thereby reducing their value; and the encroachment of manufacturing land uses and associated people into exclusive shopping and residential districts.²⁶ Thus, zoning preserved property values in two major ways, both of which aided zoning's covert connection to exclusion.

The exclusionary nature of zoning

Although zoning was ostensibly intended to protect the public health, safety, and welfare, it has often proven to be exclusionary. Exclusion was, in fact, one of the *raison d'être*s of land use regulations. Examples of early proto-zoning ordinances, such as San Francisco's 1885 prohibition against laundries in residential areas, were blatant attempts to restrict the locations of Chinese people, and prevent them from living in white neighborhoods.²⁷

The controls were an expression of the hatred and antipathy which San Franciscans were directing against the Chinese, trying to force them to quit the city. The immigrant is in the fiber of zoning. He appeared first as an Oriental. In early twentieth-

century New York he is seen as a southeastern European, the lower East Side garment worker whose presence in midtown Manhattan created one of the decisive moments in the history of zoning.²⁸

As alluded to in the quotation above, an original impetus of New York City's 1916 Zoning Resolution was to keep the immigrant factory workers out of sight of the wealthy women shopping on Fifth Avenue by creating an exclusive zone for the commercial and residential uses deemed most in need of protection, those catering to the interests of the affluent.

Zoning ordinances throughout the country often prohibit mobile homes, apartment complexes, factory-built housing, and anything else that is deemed to be undesirable or has the potential to reduce property values in exclusive residential communities.²⁹ By requiring a certain amount of money to be spent on housing, the zoning is, in effect, legislating the income level of the community's residents.

Many zoning ordinances have been successfully challenged in the courts and been found to be discriminatory and in violation of the Fair Housing Act of 1968 by requiring minimum lot size, housing type, house size, or construction materials in order to keep out lower income people and maintain community homogeneity and property values.³⁰ The best known instance was addressed in the landmark 1974 New Jersey State Supreme Court case of *Southern Burlington County NAACP v. Township of Mount Laurel*, where:

the legal question is whether a municipality like Mount Laurel may validly, by a system of land use regulation, make it physically and economically impossible to provide low and moderate income housing in the municipality for the various categories of persons who need it, and thereby as Mount Laurel has, exclude such people from living within its confines because of the limited extent of their income and resources.³¹

In many cases, the effort to keep out low-income people was directed at minorities (primarily black Americans), as opposed to poor white people, and this was the thinly disguised impetus behind these zoning ordinances.

The poor are not randomly distributed throughout the American metropolis.... By surveying American metropolitan areas, the study produces significant evidence that clustering [of lower income people] is aggravated by the imposition of public land use controls — such as zoning — in the suburbs. The study finds that income group clustering is greater the more heavily non-white are the low income groups involved.... Our findings may mean that clustering is caused by racially

motivated public controls which erect barriers to the poor generally: that is, suburbanites may perceive that economic integration means racial integration. No town can lawfully adopt general policies that explicitly exclude racial minorities. Thus a *class* policy may be the only effective way to achieve racial goals.... Public controls do affect the degree of income group clustering, and these controls may be racially motivated.³²

Zoning, in and of itself as a policy tool, is not inequitable, but it can be used to promote inequitable ends, with policymakers often having full awareness of that intent and the foreknowledge of the likely results.

In addition to the problem of direct exclusion of low-income people and minorities from certain communities, there is a problem with zoning enforcement in low-income and minority neighborhoods. Previous studies have demonstrated differing levels of environmental enforcement, penalties to polluters, and governmental response to problems, based on the race and income of surrounding communities.³³ For instance, based on an analysis of census data and the civil court case docket of the U.S. Environmental Protection Agency, a *National Law Journal* investigation found:

- penalties under hazardous waste laws at sites having the greatest white population were about 500 percent higher than penalties at sites with the greatest minority population;
- for all the federal government laws aimed at protecting citizens from air, water, and waste pollution, penalties in white communities were 46 percent higher than in minority communities; and
- under the giant Superfund clean-up program, abandoned hazardous waste sites in minority areas take 20 percent longer to be placed on the national priority action list than those in white areas.³⁴

Zoning, then, has often been used to restrict the living location choices of poor and minority people to less desirable neighborhoods. In addition to being exclusionary, zoning can be inequitable in its overall distribution of benefits and burdens, and can cause direct harm to certain populations. Zoning can help reduce the quality of life in the very places where poor and minority people are often restricted (by zoning) to live, because zoning or re-zoning an area to permit heavier industries, or more concentrated industrial uses, can adversely impact the people who live there.

Perhaps the main reason that zoning is often a promoter of inequity rather than a protector of the public weal is the inequity of the underlying system of market forces that is relied upon in many places, and drives zoning in many places, especially in New York City.

The problems of land use — class exclusion in housing, local refusals to accept collective responsibilities for the siting of key facilities, overuse of unregulated land, and underuse of territory already geared to urban expansion — reflect the normal and predictable motivations of an exclusionary form of economic development, namely capitalism itself.... The starting point [to changing the system] is to recognize that exclusion and expansion are not natural forces, but the specific patterns through which a capitalist society organizes the social relations of development. Once this is understood, it becomes possible to imagine a future society in which growth and community protection need not be pitted against each other; where they could be integral elements of a community in control of its material as well as its political destiny.³⁵

Therefore, not only imbalances in political power but the inherently exclusionary “market forces” framework of our economic system are responsible for the disproportionate distribution of noxious land uses, and have a profound impact on the equity of land use practices and protections.

How were the locations of M zones determined?

The boundaries of many of the city’s industrial and mixed-use communities have shifted considerably over time, but the rough locations of industrial areas remain the same at least since the 1961 Zoning Resolution, and many remain the same since the advent of zoning in New York City in 1916. Indeed, a majority of the industrial areas of the city today were industrial virtually since the city achieved preeminence as the United States’ major port and population center in the mid-nineteenth century.³⁶

The reasons for this are primarily logistical. Industry tended to locate in areas with access to transportation (waterways, rail, highway), large concentrated markets (urban centers), and large pools of skilled and semi-skilled labor (again, densely settled urban centers). Some of these requirements have changed over the years, but, in general, industry in New York City located along virtually every waterfront location, major railroad corridor, and more recently near highway interchanges and airports, and is still predominantly located near fixed transportation infrastructure.³⁷

In the original zoning plan, eventually adopted as the 1916 zoning ordinance, the city was divided up into broad categories of residential, commercial, and unrestricted zones. The unrestricted zones were districts for which no regulations or restrictions were provided.³⁸ Industry as well as residences and businesses could locate in an unrestricted zone.

The City Planning Commission generally had won residents over to the zoning camp by stressing during public

meetings that “preservation of neighborhood virtues” and “preserving the character of existing neighborhoods” were the purposes of zoning. Many areas that had been originally designated in the proposed zoning plan as “unrestricted districts” or “business districts” were changed to residential districts at the behest of community groups during the public hearings on the proposed zoning plan.³⁹ The neighborhoods so accommodated generally were the more affluent areas, such as Brooklyn Heights and Riverdale, which are still among the city’s most affluent enclaves. There were nearly 100 changes from one type of zone to another between the time of the original proposed districting plan and the zoning as finally adopted in 1916.⁴⁰ The resolution adopted in 1916 took into account many of the adjustments to zone locations and designations requested by community leaders during the public hearings.

Virtually the only residential areas designated as official residential zones were the more affluent and middle-class residential neighborhoods. The poorer residential neighborhoods were usually designated as part of unrestricted zones. Unrestricted zones typically had very mixed land uses, with worker tenement housing cheek by jowl with industries. From the beginning of zoning in New York City, it was a given that industrial areas would also contain worker housing, in keeping with the then-prevalent “walk-to-work” planning ideals for the lower and working classes.⁴¹ As a result of this decision-making process, industrial areas in New York still very often contain either large residential enclaves or large numbers of residences interspersed amongst industrial uses, or are surrounded by large residential areas.

In 1961, the zoning resolution was completely overhauled. This was the first major revision since 1916, although there had been over 2,500 individual amendments from 1916 to 1961⁴² and several major studies had been undertaken on revamping the zoning code.⁴³ Based on then-current thinking about the need for absolute segregation of incompatible land uses, the city was to be re-divided into residential (R), commercial (C), and manufacturing (M) zones. This required reviewing each of the old unrestricted zones, and deciding whether it was to be designated R, C, or M. Taking into account that most existing industrial areas (unrestricted zones) were in fact a thorough mixture of industrial and residential uses, the planners had to determine for each existing industrial area whether it should be given over to industry or housing.

Some areas that contained a virtually equal mix of manufacturing and residential uses in 1961 were zoned manufacturing, but some were zoned residential. This was done by the planners after having examined land use “trends” and existing land use frequencies, but in fact the zone designation for each unrestricted area was actually quite arbitrary and subjective. Unrestricted districts surrounded by “blighted” residential neighborhoods or areas with high vacancy rates (typically neighborhoods that had experienced “white flight,”

landlord abandonment, and a subsequent influx of minority populations) were usually re-zoned as manufacturing, while unrestricted districts surrounded by residential neighborhoods that seemed to be demographically stable or gentrifying tended to be re-zoned as residential.⁴⁴ Both areas might have contained an equal number or percentage of residences.

In formerly unrestricted zones that were re-zoned for manufacturing, existing residences became non-conforming uses. Industrial uses became non-conforming uses in formerly unrestricted zones that were re-zoned for residential. It was thought that these non-conforming uses would in time disappear, but many did not leave, and certainly they did not leave immediately.⁴⁵ Non-conforming uses seemed to persist in most of the formerly unrestricted zones, but they assumed the unfortunate status of existing in limbo, not able to expand, significantly alter, nor rebuild after a fire. Residential property values suffered from this limbo state, and home equity potential was also adversely affected. Many of these areas were “redlined” by banks and insurance companies, and homeowners were unable to secure mortgages or home improvement loans. Residences that were “left behind” in areas re-zoned exclusively for industrial uses were trapped in a virtual and literal “no man’s land” of non-compliance, as well as being disadvantaged by a lack of adequate protection from the surrounding industrial uses.

By understanding the rationale behind the initial zoning determinations, we can better appreciate the complexities of how and why zones are changed.

Why are M zones changed?

Once zoning for a municipality is set in place and made concrete with a zoning map, what is the process of change, and how is change decided?

It is always intriguing to inspect zoning maps of large cities and contemplate the reasons why any one or more individual parcels happened to be given particular zoning classifications. Was it to promote the public health, safety, and welfare? Was it to enhance property values — and whose? Perhaps it was bought and paid for. Was it upon recommendation of a planner, political committeeman, or the “right” lawyer? Was it pressure from the homeowners association? Was it because two, twenty, or two hundred people appeared at a public hearing to express opposition? How many re-zoning petitions were approved in whole or in part during the preceding twelve month period? For the forty-seven largest cities, each with a population of 250,000 or more, the survey indicated an average of 1,030 re-zoning petitions acted upon per city, with 72 percent of these approved wholly or in part.⁴⁶

Two types of changes are possible to the Zoning Resolution in New York City. The first involves changes to the official zoning map, which generally changes the designation of a zone or shifts the zone's boundaries. The second type involves a change to the actual text of the Resolution, which can affect requirements and standards for a zone pertaining to bulk, height, setbacks, yard dimensions, parking, and permissible use groups. Text changes can also occur when an altogether new zone designation is created, such as M1-5A, allowing mixed use in a manufacturing zone, or when a "special district" is established. These latter types of changes are more unusual and are undertaken almost exclusively by the Department of City Planning or at the behest of another city agency. The following discussion applies mainly to zoning map changes (changes in M zone extent, or boundaries, and/or zoning designation), since that is the primary issue of interest in this study.

The city has re-zoned a substantial amount of its manufacturing zones to other uses. There were approximately 409 re-zoning actions (map changes) affecting M zones between 1961 and 1998. Eighty-two of these changes were "large" or "very large" in scope, affecting between more than four blocks and up to ten blocks, and more than ten blocks, respectively. The city re-zoned land from M to R or C about 50 percent more often than it re-zoned land from other uses to M. Not only was there a disparity between the number of M zone decreases versus increases, but there was a disparity in where these changes occurred. (See Table 3.) By comparing thousands of archival zoning change maps and spatially plotting the changes in industrial zones over time, the pattern of zoning changes affecting industrial zones from 1961–1998 can be shown.⁴⁷

Based on a review of City Planning Commission reports and Public Hearing records available for the study time period, it was seen that many of the minor, small, and medium zoning changes appeared to be tied to the needs of specific property owners, and seemed to be an application of "spot zoning," having little to do with comprehensive planning objectives.⁴⁸ Therefore, this analysis concentrated on the large and very large changes, which seem, at least ostensibly, more connected to fulfilling policy objectives, which generally require major planning studies and entail land use planning of a more comprehensive nature. Also, the large and very large zoning changes could be thought of as having a larger impact on the surrounding communities as well as on the city as a whole.

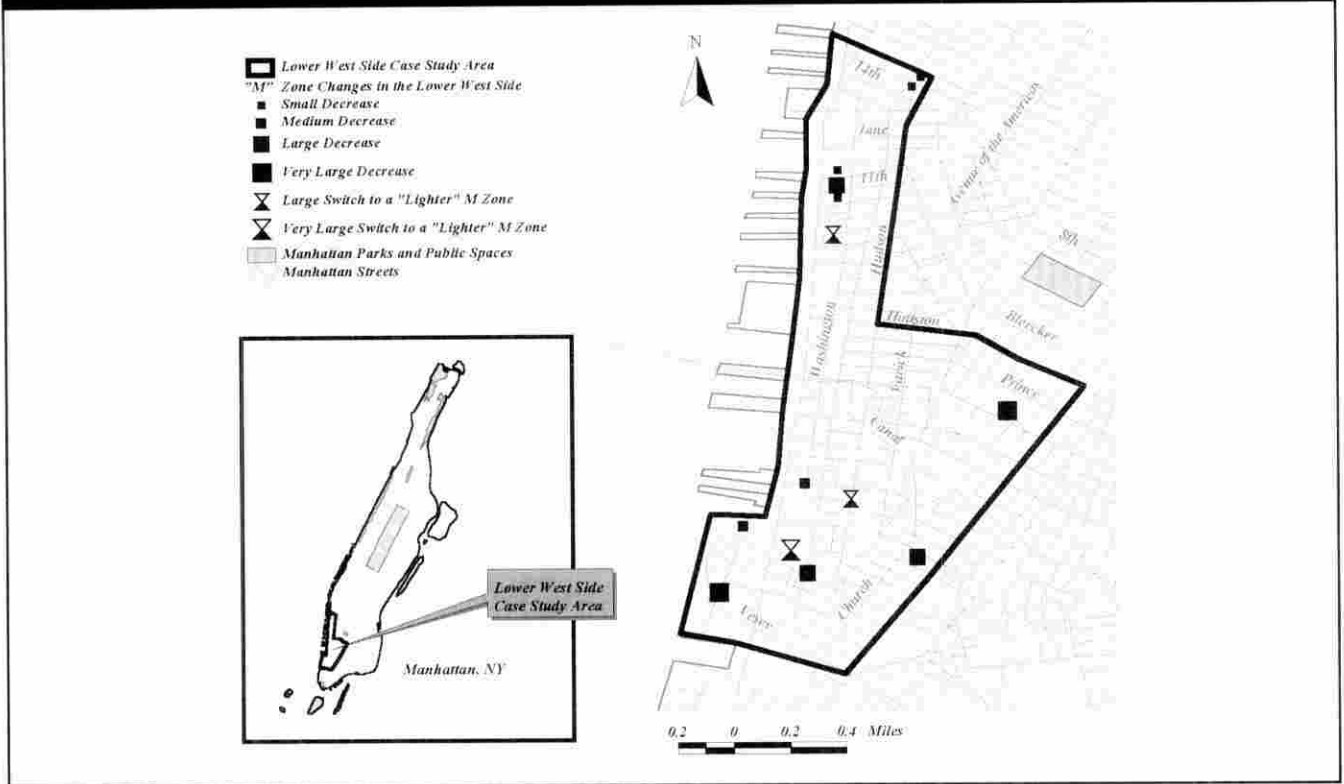
The Bronx, the city's least affluent borough, had the most major increases to M zones (see Figure 2), while Manhattan had the fewest major increases. On the other hand, Manhattan had the most major decreases to M zones, and the Bronx had the fewest major decreases. In the Lower West Side of Manhattan, one of five industrial areas studied in detail, virtually all of the re-zoning actions affecting M zones decreased the extent of the M zones, changing parts of the M zones to other uses, mainly residential. (See Figure 3.) Meanwhile, in the Bathgate section of the Bronx, another detailed industrial case study area, the major re-zoning actions increased the extent of the M zones at the expense of the residential zones. (See Figure 4.)

These zoning changes have had the effect of concentrating the noxious uses in the poorer and more minority neighborhoods. Zoning changes, as approved by the City Planning Commission and higher levels of municipal gov-

TABLE 3. "LARGE" AND "VERY LARGE" M ZONE CHANGES, 1961–1998, BY BOROUGH PER DECADE.

	LARGE AND VERY LARGE M ZONE CHANGES					
	BRONX	BROOKLYN	MANHATTAN	QUEENS	STATEN ISLAND	NEW YORK CITY
1960 Increases	2	4	0	2	1	9
1960 Decreases	1	2	1	2	1	7
1960 Total Changes	3	6	1	4	2	16
1970 Increases	2	0	0	2	2	6
1970 Decreases	1	8	7	4	7	27
1970 Total Changes	3	8	7	6	9	33
1980 Increases	4	0	1	1	0	6
1980 Decreases	0	2	4	2	3	11
1980 Total Changes	4	2	5	3	3	17
1990 Increases	0	0	0	1	0	1
1990 Decreases	2	3	4	5	1	15
1990 Total Changes	2	3	4	6	1	16
Total Increases 1961–1998	8	4	1	6	3	22
Total Decreases 1961–1998	4	15	16	13	12	60
Total Changes 1961–1998	12	19	17	19	15	82

FIGURE 3. LOWER WEST SIDE, MANHATTAN, CASE STUDY AREA — ZONING CHANGES, 1961–1998.



Data Sources: U.S. Census Bureau, 1990; New York City Department of City Planning, Map Sections 1–35, Archival Record of Zoning Map Amendments, 1961–1998.

ernment, accomplished this concentration of noxious land uses in two major ways: by reducing the overall citywide amount of land zoned for industrial use (the M zones),⁴⁹ and by increasing the geographical extent of individual M zones in certain neighborhoods, usually by expanding M uses into residential zones.

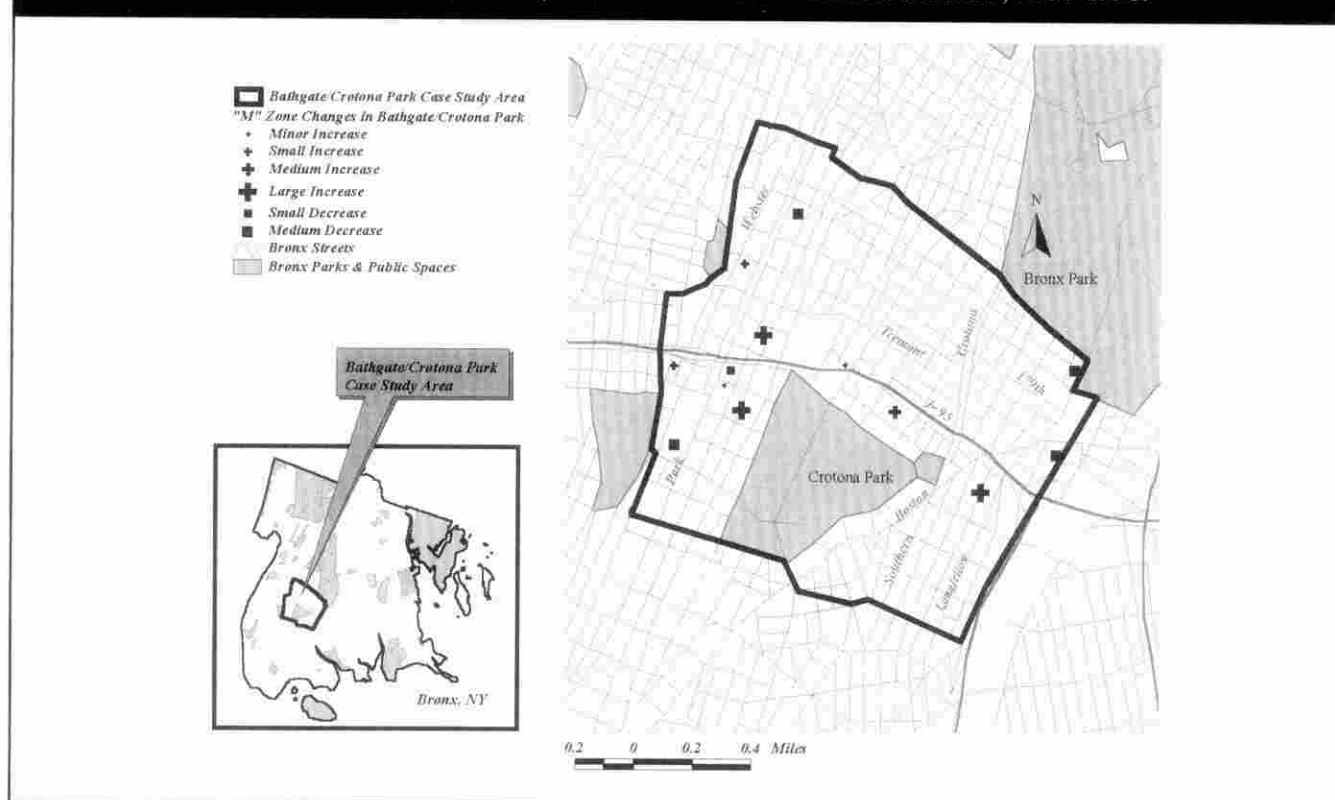
My examination of land use changes in the five detailed case study neighborhoods gives a more detailed picture of exactly how land uses differed over 1956–1990, essentially before and after any zoning changes. This land use change “snapshot” was based on a series of land use maps produced by the Sanborn Company for the City Planning Commission in 1956 and updated in 1980 and 1990.⁵⁰ These maps designate each property lot as belonging to one of about twenty main land use categories, with more detailed subcategories. Because the land use maps were not in digital format, they could not be utilized within the GIS, and therefore, it was not possible to achieve an accurate quantitative analysis of land use categories and amounts by computer. Since tax lot size varies so much within a typical New York City block, it would be insufficient and misleading simply to manually count lots, and any other type of manual measurement on such small-scale maps was unlikely to provide accurate results.

The land use analysis of the various years was accomplished by a visual block-by-block comparison, noting for

each block general differences in land use over the years. This yielded a reasonably accurate qualitative description of land use change, although actual acres of change from one land use to another would be difficult to determine with any degree of precision. The five industrial case study areas vary in size, ranging from 100 to 200 square blocks. Land uses were color-coded for the five case study areas, for all the time series of maps available for those map sections.

In general, the areas where M zones had been expanded in areal extent or had their zoning designation changed (“switched”) to accommodate heavier (more polluting) industrial uses show an intensification of industrial uses. These uses are often not manufacturing, but waste-related industries. Non-conforming homes within the M zones in 1956 were largely gone by 1990, replaced by industrial uses, auto-related uses, junkyards, and vacant lots. On the other hand, in the areas where M zones were reduced in areal extent, or had their zoning designation switched to accommodate lighter (less polluting) industrial uses or mixed uses, the industrial land uses diminished over time, and there were more vacant lots in the pockets that remained industrially zoned. Vacant land in the newly created residential zones was rare, and many formerly industrial use lots now within R zones had been converted to residential use.

FIGURE 4. BATHGATE/CROTONA PARK, BRONX, CASE STUDY AREA — ZONING CHANGES, 1961–1998.



Data Sources: U.S. Census Bureau, 1990; New York City Department of City Planning, Map Sections 1–35, Archival Record of Zoning Map Amendments, 1961–1998.

In order to effect a zoning change, the reason for the change must be recorded before it can be acted upon by the City Planning Commission. The official documents outline the planning rationales behind the re-zoning actions. For instance, “marginal” or “deteriorated” residential neighborhoods are considered more appropriate for re-zoning to industrial land uses than “stable” communities that have been “maintained.” Sometimes “market forces” or “market pressures” are cited as reasons for re-zoning districts from M to other uses.⁵¹

Market pressures have not always driven zoning changes in New York City, but they frequently seem to have done so in recent years. In the 1960s and 1970s, many ambitious large-scale planning projects requiring zoning changes were undertaken by governmental entities under a comprehensive planning schema. Since the Reagan years of the 1980s, however, privatization was often seen and promoted as the key to economic growth, urban revitalization, and solving the city’s social problems.⁵² City planning’s role was basically seen as a support mechanism to facilitate private real estate initiatives for projects that the city or state could no longer afford to undertake. Government’s desire for private sector investment in the city seemed to override the need for conformance to the mandated comprehensive planning process, the desire to guide planning, or the need to put the community’s desires on at least equal footing with the private sector. The

city’s Planning Commission and Department of City Planning responded to private development’s needs by proposing more flexible zoning regulations, liberalizing use restrictions, and allowing certain as-of-right development in industrial zones. It also recommended and approved re-zoning various areas to and from manufacturing.⁵³ Zoning changes desired by private sector investors generally required M zones to become R or C zones — in other words, changes in zoning to reflect the “highest and best” use of the land. More rarely, a zoning change would result in an R or C zone becoming an M zone, but this usually occurred in response to a governmental initiative, as opposed to private development.

Who generally applies for zoning changes?

Changes in the designation of zoning districts shown on maps in the zoning resolution are known as re-zonings or zoning map changes. Like text amendments, re-zonings may be proposed by the City Planning Commission, or by a taxpayer, Community Board, Borough Board, Borough President, the Mayor or by the Land Use Committee of the City Council.⁵⁴

Zoning changes are expensive to apply for and to shepherd through the lengthy approval process. Usually a

consultant is required to prepare the application and any supporting documents that must be submitted, and move it through the system. The zoning change application must include an Environmental Impact Assessment or Statement, which can be a very costly and time-consuming endeavor. Thus, zoning change applications are not undertaken lightly.

The applicants for most of the large and very large zoning changes affecting industrial zones have been large real estate developers and/or governmental entities, such as the Department of City Planning, the Port Authority of New York and New Jersey, the New York City Housing and Preservation Department, or the city or state economic development corporations.⁵⁵ Much less frequently, a community board or community-based residents' association has applied for a zoning change. Because zoning changes require much effort and expense, it is usually not feasible for a community group to proactively promote such zoning changes. More often, community-based organizations are in the position of having to respond to the zoning changes proposed by others.

In summary, zoning as practiced in New York is not a benign or neutral process. The decisions of where are the best locations for noxious uses have racial and classist implications, since M zones are the only places in New York where noxious uses can be sited, and the people living in and near M zones have a higher than average likelihood of being poor and minority. Added to this fact is the finding that areas where M zones are increased in extent are more likely to have a higher than average proportion of minorities and lower income people, while areas where M zones are decreased often have a lower proportion of minorities and lower income people.

Zoning is the determinant in decisions about where the city continues to site (or allows to be sited) noxious uses. Zoning tends to concentrate the noxious uses in poor and minority industrial neighborhoods due to the re-zoning of more affluent and less minority industrial neighborhoods to other uses. As long as "market forces" govern zoning and, therefore, planning in New York, this concentration of noxious uses in poorer and more minority areas will be the result. When the main purpose of planning is viewed as the facilitation of market trends, the concentration of noxious uses in poor neighborhoods is inevitable. When planning tries to address quality-of-life issues in low-income populations, this concentration is less inevitable.

CAN ENVIRONMENTAL JUSTICE BE ACHIEVED THROUGH LAND USE REGULATORY MEASURES?

The public's opportunity for involvement in the planning process, both in an official capacity and as grassroots activism, has grown since the 1961 Zoning Resolution. How have the recently enacted mechanisms mandating official forums for public participation,⁵⁶ along with the popular

NIMBY movement, affected the process of changing zoning? What opportunities exist for the average person to influence zoning decisions, and are the opportunities equally distributed throughout all the communities of the city?

The information presented in this section draws extensively on the interviews conducted for this study with people active in the zoning decision-making process during the study time period.⁵⁷ Interviewees included former City Planning Commissioners, land use attorneys, past and current staff at the Department of City Planning, academics, and planners for non-profit organizations, community, economic development, and good-government groups. This section also draws on my own experiences as a senior environmental planner while employed at both the city's Department of Environmental Protection and the Department of City Planning (DCP), in assessing the impacts of projects that proved controversial with the public. These projects included the siting of waste transfer stations and medical waste treatment facilities, re-zoning residential land to M-zoned land for water treatment facilities, and re-zoning M-zoned land for large-scale redevelopment to residential use and as part of urban renewal schemes for public-private housing partnership projects.

NIMBY-ism existed in New York City long before the activity received the catchy acronym. Communities have always tried to stop objectionable activities from locating in their neighborhoods, although this usually took the form of trying to get them out once they were already in, based on nuisance laws. This after-the-fact maneuvering was problematic, which is one of the reasons that zoning regulations were promulgated rather than continuing to rely on nuisance laws.⁵⁸ It has been frequently documented that at least as far back as the 1930s communities fought, and occasionally succeeded in stopping (or relocating elsewhere before construction started), such proposals as expressways, sewage treatment plants, and low-income housing projects that they were convinced would ruin their neighborhoods.⁵⁹ Generally, the communities organized around and against specific development proposals, rather than opposing a general plan to re-zone. Typically, however, the two went hand-in-hand, with a specific proposal including the need for an approval to re-zone to facilitate the project.

Additional accountability requirements and public and media scrutiny of public officials' actions have prompted elected and appointed officials to give more consideration to the public's reaction to various plans and proposals. This was not always the case:

There was a time when decisions were made like that — the race and class of a neighborhood would be a factor — but it's not politically possible anymore. Everything is too open and visible — we'd never be able to get away with that kind of thing anymore.⁶⁰

Despite the theoretical evenness of the regulations with regard to equal applicability and equal opportunity for all communities within New York City to participate, the degree to which the decision-makers consider the community's recommendations or wishes varies a great deal. As such, according to the general consensus of the interviewees, the political power of the community still matters greatly in how much the community's viewpoint dictates or affects the final decision.

Why does one area get re-zoned and another area doesn't? Well, there's a multitude of things going on: there's politics, and then there's the political connectedness of the residents or developers, and then there's politics. How much do politics count? A hell of a lot. It's not everything ... but it's very important.⁶¹

Zoning is not necessarily responsive to all classes and interests within a local community. The local business community, for instance, has been heard more than residents, especially in poorer neighborhoods.⁶²

The NIMBY movement has changed the dynamics of community organization and protest. Media attention makes it possible for even the less powerful communities to be heard and have their concerns addressed. However, most of the interviewees agreed that NIMBY-ism still is most effective when the community is more affluent and has direct access to and understanding of the political process. As "minorities" become the majority in many parts of the city, power is likely to shift, if for no other reason than sheer strength in numbers.

Official avenues of public participation

Recently in New York City, a number of measures relating to public participation in land use planning and environmental justice have been introduced or strengthened. Aside from the direct election of local representatives, several non-elected governmental bodies and regulatory provisions have an impact on zoning and environmental justice outcomes. A new City Charter was approved by voter referendum and adopted in 1989; this new charter included several provisions for increased public participation in the planning and decision-making process. Review by community boards of proposed projects as part of the Uniform Land Use Review Procedure (ULURP), the Environmental Impact Assessment process, community 197-a plans, and the Fair Share Criteria are the most relevant to this discussion of the possible ways to achieve environmental justice.

The role of community boards in the zoning process

New York City is divided into fifty-nine community districts

(CDs), which correspond roughly to the boundaries of neighborhoods, or "sections" of the city. The CD is the smallest municipal jurisdiction, and each is represented by a community board, a non-elected body. Community boards occasionally initiate a zoning change proposal for their community, but more often they are called upon to react to a zoning change proposal by a private developer, a city agency, or some combination of the two. Under the provisions of the ULURP, the community board(s) affected by a proposal is officially notified of the re-zoning application, receives copies of it, and has a set number of days to review it and make recommendations to the City Planning Commission (CPC). The board can elect to hold public hearings on the proposal to assist its members in reaching a decision. For certain types of applications, a public hearing is mandatory. The board's recommendations to the CPC, although formalized by a vote of board members, are advisory and carry no obligation that the CPC abide by them. The CPC also holds public hearings on proposals that are before it for a vote, although the vote often follows within minutes of the close of the hearing, giving little time for the commissioners to reflect on the public's testimony.

It sometimes happens that the community board's response to a proposal is supportive, while the residents of the community itself are opposed to the proposal. It has been an ongoing critique of the community board system that the composition of the board rarely reflects or is representative of the actual community, since the board members are appointed by boroughwide or district-wide elected officials, and are not elected directly by the community residents. One of the reasons that NIMBY activities and grassroots community groups have become so numerous in New York City is the fact that the official mouthpiece of the communities, the community board, is often seen by community residents as just another part of the "system," and not to be trusted to "do the right thing" for the community residents.

When making their decisions, the (appointed) CPC members and (elected) City Council members are supposed to take into consideration the needs of the entire city, as well as those of the affected community districts, but borough alliances, party allegiances, and obligations to all sorts of other coalitions influence the final decisions of the officials. Very often, the official community board recommendation is disregarded by the CPC and City Council members if it is viewed as too parochial, especially if important citywide interests are at stake. If there is factionalism and in-fighting among different parts of the community, it is even easier for the CPC and City Council members to ignore the community's viewpoint. According to most of the interviewees, the seriousness with which the CPC treats the recommendations of each community board varies in accordance with the political power of the community, and the recommendations of the more affluent communities are generally accorded more weight than those of the poorer communities.

Comparing Morrisania to Riverdale [poor versus affluent communities in the Bronx] clearly, the advisory decisions of the Riverdale Community Board are more likely to be responded to and adhered to than the theoretically equally advisory opinions of Community Board #3, for example. So if there's a proposed zoning change and CB #3 is against it, and the downtown authorities want it, it will go through notwithstanding their [CB #3's] opposition. Whereas if there is a zoning change proposed for Riverdale and the Community Board there is against it, it's going to be a significantly more difficult process for downtown to get that zoning change through.⁶³

Environmental review process

Proposals for re-zoning require an environmental review. The time clock for the ULURP process does not start until the environmental review is completed. This review consists of a simple form requiring some cursory information as to potential impacts of the proposed project or re-zoning. If it is determined that the project would not exceed certain impact thresholds, the proposal receives a "negative declaration," there are no public hearings, and that is the end of the environmental review process. If certain thresholds are projected to be exceeded, a "positive declaration" or a "conditional declaration" is issued. The former requires a full-blown Environmental Impact Statement (EIS), and the latter requires conditions or mitigation techniques to be met to bring the project under the allowable thresholds, or to conform to standards.⁶⁴

Completing an EIS involves considerable effort, often costing hundreds of thousands or even millions of dollars to assemble. It starts with a Scoping Document, which is a report outlining the data and methodologies to be used in the EIS analysis. Within the EIS framework there are requirements for public hearings at various stages of the process. Often, the public hearings mandated by the EIS are the only official opportunities for the public to comment on the proposal. Unfortunately, the hearings are very narrowly focused, the first being an opportunity for public comment on the Scoping Document. The second public comment period pertains to the release of the Draft EIS, and is supposed to elicit comments about the information in that document. The public usually takes the opportunity to complain about the project in general, but the lead agency is not legally required to entertain questions or comments not pertaining directly to the narrow area of concern of the particular hearing, e.g., the Scoping Document or the Draft EIS. All other comments are generally disregarded. For many projects, there is no public forum to vent one's concerns or ask questions about the project, and although the EIS hearings are used for that purpose, they are not an effective venue to do so.

The primary way the public can influence the fate of a proposal through the EIS process is by finding a "fatal flaw" in the EIS itself, but this requires a substantial amount of expertise on the part of the community residents or activists, technical guidance from experts, and/or a poorly prepared EIS.

Community 197-a plans

As per the new City Charter's § 197-a, community boards have the authority to develop plans for their communities. These plans are to be reached by consensus, reviewed and approved by the CPC, and adopted as the official "vision" that the particular community has for its future. Because they are expensive and difficult to develop, most community boards have not prepared 197-a plans. Only a few communities have adopted them, such as Red Hook in Brooklyn and Morrisania in the Bronx. The plan often takes years of community discussions and consensus building before it is submitted to the DCP staff for its review. The plan as issued by the community is invariably a compromise plan, trying to simultaneously address the needs of residents, businesses, and industries in the community. The DCP staff further revises it, so that what results is often a bland, watered-down version of the community's "vision." When this "vision" plan is finally adopted by the CPC, after any further revisions are imposed on it, it then achieves the status of "community recommendations." In reality, the CPC is not bound to initiate or implement any zoning changes proposed in the community's plan, nor must it automatically veto any proposals by developers or other governmental agencies that run counter to the community's plan. In other words, the plan, being purely advisory, does not ensure that any decisions will be made either to implement plan elements or to prevent unwanted development from occurring.

When the current and recent staff of the DCP were asked whether they thought the 197-a plans would have a significant impact on zoning, they generally felt that the plans would have a negligible effect.

We have this 197-a process, same as we have the institutionalization of the Community Boards. I think these formal procedures end up empowering the already empowered communities and not having a major impact in the disempowered communities. Even prior to the formal existence of the Community Board system, the more empowered communities had informal mechanisms to prevent the things from happening that they didn't want to happen, and now they have a formal mechanism to even more effectively prevent the things they don't want. In the lower income communities, the opinions of the Community Board are really, nine times out of ten, irrelevant to the decisions that are going to be made.⁶⁵

Fair Share Criteria for siting city-owned facilities

The Fair Share Criteria⁶⁶ were mandated by the new City Charter, and became effective in 1991.⁶⁷ Fair Share procedures and standards were developed in response to the increasing difficulties the city encountered in its attempts to site a series of shelters for New York's homeless population, as well as other social service-oriented facilities. There was also a perception among many communities that they were being oversaturated with unwanted facilities in their neighborhoods, and a corresponding public outcry against the city's siting policies ensued.

The intentions of the Fair Share Criteria were to force decision-makers to take into account the existing concentration of noxious city-owned facilities in any given neighborhood in the process of siting new facilities. This document suffers from three major drawbacks in terms of its ability to achieve environmental equity: (1) it is strictly advisory — there are no limits, quotas, or formulas — so there are no “teeth” to it, or means of enforcement; (2) it covers only the siting of city-owned facilities, so if a noxious use is private, has been privatized, or is state- or federally funded, then Fair Share does not apply; and (3) it treats all LULUs (locally unwanted land uses) as equally deleterious to the host community, although clearly those posing an environmental, human health, or safety risk, such as incinerators, should be accorded different status than those facilities that might harm only property values, such as homeless shelters.

Fair Share has been morally useful, though, in that it has legitimized people's concerns about environmental justice issues. But practically speaking, Fair Share does nothing to prevent an overconcentration of noxious facilities in already burdened communities. In fact, the main beneficiaries of Fair Share seem to have been those middle-class neighborhoods that have invoked it to ward off unwanted social services facilities such as drug rehabilitation centers, AIDS hospices, and homeless shelters. In part, the locations of environmentally noxious facilities are dictated by the locations of M zones, and thus Fair Share cannot change the inequitable distribution of noxious facilities since it accepts as a given the location of areas “appropriately” zoned for noxious facilities.

In summary, the New York City Charter provisions make the opportunity for community participation mandatory, but do not relate the requirements to producing real community planning and decision-making. Most of the community's powers of review, approval, and proactive planning exercises are advisory only, bearing no obligation on the part of the city to implement or adhere to them. This obviously presents very real limitations in terms of true community-led planning and decision-making.

“Process” vs. “outcome” forms of justice

Every planner interviewed during this research said that community participation was more effective in affluent than in

poor communities, citing political clout, income status, and race (all interconnected variables) as the reasons for the difference.⁶⁸ This would indicate that “process” type environmental justice has been served by the regulations, rather than “outcome” types of environmental justice.⁶⁹ In other words, equitable access to public participation does not necessarily result in equity or equality.

Process forms of environmental injustice pertain to the structural failure of the system to provide equity and equality to poorer populations and people of color in participating and affecting the regulatory process, or in contributing to other decision-making in the public sphere that affects their lives. It has to do with the concept of “fairness” in siting issues, which assumes that if the process is “fair,” the consent of the affected parties is implied, resulting in equity. However, process equity, even if obtained, does not guarantee equity of outcomes, but only that the process was “fair,” meaning that all the affected parties had a chance to participate equally and have their voices heard.

Process (procedural) equity may include such things as adequate access to information, having the public meetings held at such a place and time to maximize the potential for community attendance, in the language(s) spoken by the community members, with people available to the community to assist with understanding technical terminology and issues, with equal access to speak and debate, and having equal influence over the decisions. Process inequity may include a broader context, such as racial discrimination, exclusionary zoning, poverty, lack of employment opportunities, and poor education, all of which tend to produce the inequitable outcomes of environmental injustice.

Outcome forms of environmental injustice pertain to the disproportionate distributions of environmental benefits and burdens among poorer people and communities of color. It could also entail distributional inequities in environmental enforcement and environmental remediation, and differential penalties assessed to polluters. The meaning of outcome inequity could be extended to include unequal burdens of actual health impacts (not just risk of impacts) and lack of access to quality health care, as well as lack of access to better living conditions, housing markets, mortgage monies, and the discriminatory practice of “redlining.” Environmental injustice as to outcomes usually implies an extra level of risk, exposure, or actual impact borne by the affected population.

In a study of the impacts of industrial hazards in Pennsylvania's Allegheny County, Glickman and Hersh state:

It is important at the outset to distinguish between process-related and outcome-related inequities. The former has to do with practices that, intentionally or otherwise, are discriminatory because they result in environmental inequities. The latter has to do with situations that, regardless of

how they originated, end up being environmentally inequitable.⁷⁰

With this understanding of the terms, it is possible to have procedural equity with inequitable outcomes. In other words, participation in the process may be equitable, but the result in outcomes is not. This is because most of the time process equity revolves around the siting of facilities, rather than determining the actual need for the facility at all, or resolving deeper issues about environmental protection, resource use, and economic growth. The way procedural equity is currently constructed, there are bound to be winners and losers because the facility has to be sited somewhere. So while procedural fairness is better than nothing (it is better than being excluded altogether from the decision-making process, for instance), some particular place is still destined to host the facility, which results in inequality and an impression of “losing.”

The difference between process equity (or procedural fairness) and outcome equity is a very important distinction to make, since the way policymakers have responded to accusations of environmental injustice has primarily been to create additional public participatory processes, Fair Share guidelines, and other mechanisms to ensure “fairness” in siting noxious facilities. However, recent history has shown that process equity has not necessarily resulted in more equitable outcomes.

Has the environmental justice movement made a difference?

This situation has shifted somewhat in recent years, as people in poorer neighborhoods and communities of color have succeeded in focusing media attention on unjust situations. Elected officials are also paying more attention to the politics of inequity. President Clinton’s landmark 1994 Executive Order 12898, which directed each federal agency to identify and address any “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations,”⁷¹ had great moral force, even though it did not mandate specific actions on the part of the agencies. Recognition of environmental injustice by a branch of the federal government served to legitimize much of the environmental justice movement’s findings. It also brought the issue of environmental justice to the public’s awareness on a truly nationwide level.

Some communities, through grants, fundraising, and other hard work, have become increasingly technically sophisticated and knowledgeable about the process and the system. Community members who are architects, lawyers, environmental analysts, GIS professionals, and other members of the “scientific-rational” community often have contributed their work pro bono, or the community may

hire expert consultants. These community groups have produced their own analyses, reports, alternative plans, and counter-mapping efforts in order to combat the official “vision” for their community. These alternative plans have rarely been embraced and implemented wholesale by the establishment, and some would argue that they haven’t accomplished anything major. But they have occasioned little victories — getting a seat at the table in discussions and negotiations, obtaining concessions or mitigations in large projects, securing the right to oversee future aspects of the project in a watchdog capacity, and frequently succeeding in blocking the siting or expansion of noxious facilities in their neighborhoods.

The Greenpoint-Williamsburg Watchperson Office⁷² is an example. The Watchperson Office was originally funded by a settlement between the New York City Department of Environmental Protection and the New York State Department of Environmental Conservation. The city owed the state over \$800,000 in fines for operating violations at their waste water treatment plant in the Greenpoint community, violations which had endangered the community. In lieu of paying the fines to the state, the city was allowed to give the money to the community for environmental programs. Some of this funded the Watchperson Office, which acts as a clearinghouse for information and activities, as well as an ombudsman/advocate for environmental issues affecting the community. The office has staff, interns, and volunteers with legal, GIS, and other technical expertise.

The South Bronx Clean Air Coalition is another example. They, along with other community and environmental groups, succeeded in shutting down a large medical waste incinerator that had an egregious record of operating violations,⁷³ and are now involved with several environmental justice studies, including a major grant to research the possible linkage between the high rates of childhood asthma and noxious land uses in the South Bronx.

There are many grassroots organizations and alternative education and advocacy programs that contribute to community empowerment in poor areas and communities of color.⁷⁴ These groups potentially could be formidable, but it is unknown whether they will be effective in obtaining environmental justice, or whether their actions will merely serve to obstruct the siting of LULUs in their neighborhoods, and thus pave the way for noxious facilities to be shifted to an even more powerless region.

Unfortunately, many governmental agencies have framed the equity question in terms of fairness in distribution and siting, which assumes the existence of pollution as a natural and accepted part of industrial production.⁷⁵ “Any attempt to rectify distributional inequities without attacking the fundamental processes that produced the problems in the first place focuses on symptoms rather than causes, and is therefore only a partial, temporary, and necessarily incomplete and insufficient solution.”⁷⁶

Has public participation resulted in increased NIMBY-ism?

Complaints have been made that public participation has only served to further promote NIMBY claims, and has given legitimacy to NIMBY philosophy and methods.⁷⁷ Because of the way the public participation process is currently structured in most places, the “participation” is usually confined to a community’s reaction against planning proposals, rather than proactive community-led planning efforts. Reaction against planning proposals typically translates into NIMBY-ism.

A number of planners have tackled the NIMBY problem, and their solutions differ dramatically from one another, based on what the planner perceives the NIMBY “problem” to be.⁷⁸ Is the problem viewed as the fact that it is difficult and sometimes impossible for planners to site noxious facilities and LULUs due to community opposition? Or is the problem that the impacts of these hard-to-site facilities need to be reduced, so they’re less of a burden to whomever they end up near? Or is the problem that these facilities may be totally unnecessary and so harmful that they shouldn’t be sited anywhere? Or is the problem that, given the present political economy of the world, the noxious facility or land use will eventually end up somewhere, usually where the population is least empowered to prevent it and most vulnerable to its effects?

When is a community justified in opposing a land use, and when is it being selfish or discriminatory? Local resistance to unwanted land uses can be seen as, rather than a selfish response to LULUs, a sensible approach, requiring the rethinking of some of the nation’s industrial policy and the revamping of policies and regulations. This then becomes “Not In Anybody’s Back Yard” (NIABY), which is not a selfish response at all.⁷⁹

The theory here is that if NIMBY-ism makes it difficult enough for capital to site, say, hazardous waste treatment facilities, then perhaps capital will be forced to re-think its production process and begin to manufacture less waste, which will be a happy outcome for the environment, the workers, the residents, and even for capital, provided that eco-solutions can save money and increase profits. Rather than being forced to accept in their midst hazardous facilities in which waste is treated only at the end of the process, communities have banded together to question why industry is not promoting pollution prevention, source reduction, and production controls to reduce the need for so many hazardous waste disposal facilities. In these instances, NIMBY-ism has become NIABY-ism. However, it is not always clear what is meant by “Not In *Anybody’s* Back Yard.” Anybody in this city, in this state, in this country, or in the entire world?

With increasing ease, capital now has the whole world to move around in, and it may decide just to relocate its waste or harmful production processes to less well-regulated areas. This does nothing to help the world’s environment,

and may even make it worse if the eventual production or disposal spot is located where less care will be given to ensure proper treatment, and where even poorer people may live with even less access to medical care, social support, or the corridors of power to effect changes. The shifting around of pollution and risky processes to less well-regulated locations may do more harm than good overall in the long run.⁸⁰

It is important to distinguish between those NIMBY situations that have exclusionary implications and those that involve protests to rectify injustice and improve the quality of life, while recognizing that the solution is not a more equitable distribution of noxious facilities, but the elimination of the need for such facilities, and the reduction of the environmental and health impacts from those facilities that must exist.

Limitations of public participation in achieving equity

Public participation, although ostensibly available to everyone, is not an equally effective means of addressing problems for everyone, including the potential to prevent or promote zoning changes. The public participation process in New York City, as in most places, is complicated, convoluted, time-consuming, and intimidating, and in the past these characteristics have helped to maintain the hegemony of the affluent and the non-minority population. Even now, with the process theoretically more open, it is clearly geared toward a well-educated middle- and upper-class perspective, with decision-makers often giving short shrift to members of the public who bring a different way of thinking to the discussion (e.g., focusing on local knowledge and experiences versus the scientifically technical aspects of a proposal).

It is difficult for the average citizen to participate meaningfully in public policy decision-making the way the system is currently structured. There are three major problems. First, much of the discussion assumes and requires a level of technical expertise greater than most people possess, and somehow this knowledge and expertise would have to be made available to all participants. Another difficulty in having meaningful public participation is the fact that the EISs and zoning amendment applications are highly technical documents that are produced by “scientific” analyses, and the public participation process is embedded in the “rational-technical” discourse of the planning discipline. Therefore, community members who speak at public hearings are often discounted by the governing bodies as being naïve, ill-informed, or too “emotional” about the issue. In other words, the public brings different knowledge bases and ways of thinking to the process, but rather than these being integrated and welcomed into the process, they are generally ignored or not held in high regard.⁸¹ The rational-technical method, seen as objective and scientific, cannot readily incorporate alternative approaches, and therefore the state controls the terms of the debate.

Rational-technical discourse provides the state with the appearance of neutrality from which to balance conflicting structural demands.... The question of local autonomy can be understood as a question not only of who controls the terms and spaces of debate, but also of who thereby controls the reproduction of the social order.⁸²

The second problem is that the current process establishes time constraints on responses to issues which are so curtailed that a person working at a full- or even a part-time job would have to take time off from work in order to meaningfully devote his or her attention to each particular public policy matter. To give an example, typically the public has 10 days to respond in writing or orally at a public hearing to a complex environmental analysis that may have taken the siting agency years to prepare. Clearly, there is no way the average layperson (or expert!) would be qualified to meaningfully join in the debate after 10 days of reviewing the document, even if this was all he or she did during those 10 days. The public participation process would have to be set up in such a way as to be an ongoing and predictable occurrence, not just sporadic public hearings in reaction to a particular issue, but one in which the public was involved in the decision-making process from the beginning. Thus, the process would need to become a considerably more integrated part of everyday life, rather than a special crisis-driven occasion.

Third, the process would have to ensure that the participants actually have a say in the deliberations, otherwise people will soon lose interest and realize that they are just there to lend an air of legitimacy but have no real effect on the outcome. Debate and decision-making have to be a fair process, open to all, with more than just perfunctory yes or no votes. This would likely require a restructuring of local government, at the least.⁸³

A municipality like New York City has a very convoluted and complex organizational structure, which serves to obfuscate connections and linkages, making it virtually impossible for the average soul to deal with any issue cogently. Knowing how to participate is not intuitive, especially in a complex urban setting. Knowledge of the rules and regulations is crucial to participating effectively. Access to public participation is hollow if people lack sufficient knowledge of the structure and rules. Possessing a clear understanding of the rules and regulations is also critical in order to challenge them when necessary.⁸⁴

An important point to keep in mind when developing a methodology for public participation is that in the current system, emphasis is placed mainly on the "rational-technical" discourse, and alternative ways of thinking are given a lower status in the decision-making process. Public participation will only be able to make a meaningful contribution to decision-making when the rational-technical methods are not the only ones taken into account, and local knowledge

bases and other experiential techniques are accorded more weight in the public discourse.

CAN ENVIRONMENTAL JUSTICE REPLACE MARKET DISCOURSE/NIMBY-ISM?

Many planning decisions are made based on accommodating private market interests and/or pacifying NIMBY-ism. Part of the solution to this problem would be to create regulations that will ensure "real" community-led planning, including mechanisms for proactive planning and plan implementation. This will require a broader regulatory and decision-making framework, one that will allow full integration of community-led plans into a comprehensive plan for the entire city. This presupposes that there *is* a comprehensive plan. New York City last undertook a master planning exercise in 1969. A new master plan is a necessary first step in the "visioning" process for the city, rather than relying on private market initiatives to shape our communities. The state enabling act for zoning specifies that zoning is to be done in accordance with a comprehensive plan, but in New York City, as in many other places, zoning has *become* the plan, instead of its manifestation.

Without a comprehensive plan to guide development in the city, all the myriad zoning changes that have occurred create a situation of piecemeal planning, which serve mainly to facilitate private development investment, the so-called "market forces." Zoning changes need to be looked at on a citywide basis, because zoning changes in one part of the city can have profound effects on other parts of the city (regarding the concentration of noxious uses, for instance), yet these impacts are typically not taken into account under the present decision-making system. A comprehensive plan should be a required element before any zoning changes take place.

The lessons of NIMBY-ism must be taken to heart and turned to NIABY-ism, to be used to promote environmental justice for all. As long as noxious facilities are out of sight in somebody else's backyard, the larger picture of how we, as individual consumers, contribute to the environmental problem is also conveniently out of sight. It is all too easy for us to blame government for the existence of noxious facilities in our communities, and to thus obscure the relationship between our lifestyle choices and the environmental burdens we are inflicting on our own and other communities. Perhaps zoning regulations should be changed to permit some waste-related facilities in residentially zoned districts, to promote understanding of the consumption-waste cycle. If each community was responsible for dealing with its own waste instead of being able to ship it elsewhere, then perhaps people would take more seriously the need to reduce waste by alternative strategies, instead of a "business-as-usual" consumption-waste cycle.⁸⁵ These strategies could include pressuring the government for improved support for research and development of products and markets for recycled mate-

rials; promoting urban agriculture and rooftop composting; altering individual consumption patterns by more enlightened consumer choices; more robust environmental law enforcement; and community involvement with industry, such as the use of "Good Neighbor Agreements" and community audits of industrial facilities in their neighborhoods.⁸⁶

Good Neighbor Agreements (GNAs), which are essentially contracts between the owners of environmentally hazardous facilities and the surrounding residents, can assist the community by requiring or allowing the inclusion of local residents in the plant's operational decision-making; development of pollution prevention strategies and odor control schemes; community inspections of the plant and monitoring of enforcement actions; the hiring of independent consultants and experts for inspections or sampling; and a compensation package/profit-sharing plan, jobs, and services for the community. GNAs can also require public disclosure of company documents, including hazard assessment and risk analyses; lists of accidents, spills, and waste-reduction plans; improvements to the plant by use of best management practices, best available technologies, and pollution prevention measures so as to produce environmentally sound conditions in the surrounding areas; formation of a long-term plan to transition out environmentally destructive industries and transition toward more environmentally sound products, while preserving local jobs; and alteration of the legal fiduciary duty of the corporation to include local stakeholders.⁸⁷ Good Neighbor Agreements have been used occasionally with promising results, but will be limited in effectiveness unless devised in concert with other measures and changes.

We also need to gain a better understanding of the links between health and noxious uses. This will require better health assessments, better exposure evaluation methodologies, better measurement techniques, and more information in general,⁸⁸ which will in turn hopefully inspire heightened pollution prevention efforts, source reduction, updated environmental and land use regulations, and rigorous and equitable enforcement. Regulation without adequate and equally applied enforcement is meaningless.

Does zoning, as currently conceived, merely perpetuate environmental injustice, or could zoning potentially be used to help solve injustice? More equitable protection could be built into the zoning process by developing more stringent performance standards for environmentally burdensome uses; promulgating sensible mixed-use zoning; engaging in real comprehensive planning; and supporting meaningful community participation in decision-making. New and revised regulatory provisions could strengthen zoning as a means of obtaining environmental justice for all, as opposed to the current zoning process, which tends to create the conditions for environmental injustice to occur.

But perhaps the most far-reaching solution will come only by changing our mercenary relationship with the land.

It should be obvious that there can be no truly effective means for a community to arrange its development in a logical, efficient, and economical way, if planning agencies simply "have to live with" the obsolete conception of land as merchandise, and the far-reaching side effects. It is a great waste of time and energy for planners to go on devising increasingly elaborate and sophisticated techniques of analysis if the community does not possess the most essential tool, namely control over the land of a much more delicate kind than that afforded by the ordinary mechanisms of zoning and other land-use control, and possession of the values in land created by community control.⁸⁹

This will be one of the great planning, legal, public health, and ethics challenges of the twenty-first century: how to simultaneously work within the existing paradigm of land commodification, while attempting to achieve environmental health and justice worldwide.

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data, land use, and transportation access. The boundaries for these major industrial districts were based on neighborhood boundaries, major geographic or physical features, historic and present-day functions, and census tract boundaries, where feasible.

7. The 1961–1998 timeframe was selected for the study because December 1961 marks the date of the last major overhaul of the New York City Zoning Resolution. Data for actions prior to 1961 would not be directly comparable to data regarding later actions due to significant changes in zoning categories, procedures, and recordkeeping. October 1998 marks the time the archival data were researched and compiled for this study, and thus represents the endpoint of the timeframe.

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