THE MASSACHUSETTS LEAD POISONING PREVENTION LAW:
THE ENVIRONMENTAL EQUITY PARADOXES

by

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Submitted to the Department of Urban Studies and Planning
in Partial Fulfillment of the Requirements
for the Degree of

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ABSTRACT
The Massachusetts lead poisoning prevention law was evaluated to determine its equity impact on low-income and minority communities. Passed in 1971 and amended in 1988, the lead law places a heavy financial burden on property owners to abate lead hazards. A series of interviews were conducted with community residents both tenants and owners, as well as with housing, public health, and environmental activists and governmental officials. In addition, a one year internship in the Environmental Protection Agency Region 1 Office of Toxic Substances informed this analysis.

The research revealed a strong middle-class bias built into the law which lacks a comprehension of the social, economic and political dynamics of low-income and minority neighborhoods. The framers of the law failed to address the critical need for cities to increase the percentage of owner-occupied housing as a means of improving urban quality of life. No synthesis was found between attempts by environmental and public health advocates to protect low-income and minority children from lead hazards and the goal of people working in the housing and community development field to strengthen these same children's communities.

Urban environmental policy must look beyond whether a program as written ameliorates a particular environmental hazard to also evaluate who bears the cost of these programs and whether this cost burden is appropriate. The financial infrastructure to facilitate residential lead abatement needs to be developed so as to prevent further destabilization of low-income and minority communities by the Massachusetts lead law. This requires the creation of a diverse range of financing options which incorporate the public sector, financial institutions, as well as private industry.

Thesis Supervisor: Patricia Hynes
Title: Adjunct Professor, Department of Urban Studies and Planning
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INTRODUCTION

The prevailing system of specialized knowledge has led modern society down paths which generate narrow solutions to complex societal problems. The pervasive problem of child lead poisoning requires the replacement of this prominent paradigm with creative and multifaceted policies. A comprehensive approach to eradicating lead poisoning also requires a joining of two diverse and often conflictual ways of viewing the world. Environmentalists tend to view the problem of lead as a toxin which threatens the health of children through rendering homes hazardous waste sites, while viewing housing issues as more peripheral to addressing lead poisoning. In comparison, housing and community development people traditionally view lead as a barrier to housing opportunities and don’t fully understand or appreciate the health or environmental issues. The field of environmental policy needs to be brought together with the field of housing and community development to devise policies that protect the health of people within the context of meeting their full range of basic human needs.

Public health officials currently estimate that one out of six children under the age of six suffer lead’s injurious effects. Lead poisoning disproportionately impacts African-American children, while up to 90 percent of inner-city children are estimated to have blood lead levels over 10 micrograms of lead per deciliter of blood (ug/dl). Moreover, women deliver 400,000 newborns each year with elevated blood lead. The need to address the problem within the framework of the community as the locus of intervention is only just beginning to be recognized. An analysis of the Massachusetts lead law reveals that attention needs to be given not just to new abatement methods, but also to the cycle of poor nutrition, lack of adequate health care, and dynamics of the substandard housing market that predispose children to this disease.

The social crisis presented by the large number of young children permanently robbed of their intellectual potential has focused the majority of ameliorative efforts in this country on medical intervention. Massachusetts adopted a more comprehensive
approach through enacting a law viewed across the country as a pathbreaking effort to eradicate lead poisoning. In addition to requiring universal screening of children under six years, the law mandated certification and licensing of inspectors and deleadbers in order to make the process of lead abatement safer. In an attempt to spur deleading of the housing stock and in light of the need for an immediate funding source for abatement, Massachusetts placed both the legal and financial responsibility for abatement on property owners. Discussion of the equity issues concerning the role of the paint and gasoline companies which were responsible for marketing a product they knew to be hazardous has been relegated to the agenda of the lawyers involved in long-term product liability and class action lawsuits against those parties.

This thesis presents a case study of the implementation of the Massachusetts lead law. The perspective is primarily that of a low-income homeowner in Boston. The current progressive housing policy goal of promoting homeownership as a means of strengthening neighborhoods also forms the basis for analysis. Micheal Lipsky, in researching the delivery of social services, contends that, "public policy is not best understood as made in legislatures or top-floor suites of high-ranking administrators, because in important ways it is actually made in the crowded offices and daily encounters of street-level workers." In the same way, the Massachusetts lead law is best understood as it plays out in the inner-city neighborhoods disproportionately impacted by lead.

My interest in exploring the impact of the Massachusetts lead law on low-income communities arose through an internship in the toxics branch at the Environmental Protection Agency Region I office where I worked coordinating lead issues. It became clear to me that those involved in the lead poisoning prevention area primarily viewed the issue from an environmental or public health perspective. As efforts build in other states to pass lead legislation, more

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attention needs to be paid to how these laws impact on low-income
and minority communities, both tenants and homeowners.

Urban environmental policy needs to make equity issues
explicit when developing programmatic solutions. Low-income and
minority neighborhoods house the majority of hazardous land uses in
urban areas and subsequently bear the costs of ill-health. Policy
must look beyond whether a program ameliorates a particular
environmental hazard in theory and on paper to also evaluate who
bears the cost of these programs and whether this cost-burden is
appropriate. Ultimately, this evaluation also tests a policy’s
implementation feasibility. The Massachusetts lead law, dating
back to 1971, provides a clear example of a well-meaning program
designed to aggressively combat the problem of childhood lead
oxpoisoning which has produced many unforeseen consequences.
CHAPTER 1: SCOPE OF THE PROBLEM

HEALTH EFFECTS

Some day, maybe, there will exist a well-informed well-considered, and yet fervent public conviction that the most deadly of all possible sins is the mutilation of a child's spirit; for such mutilation undercuts the life principle of trust, without which every human act, may it feel ever so good and seem ever so right, is prone to perversion by destructive forms of conscientiousness.²

Erik Ericson

In the early 1960s, the majority of doctors considered only those children suffering from visible effects of high lead absorption as meriting medical attention. Encephalopathy, frank anemia, colic, coma and even death commonly resulted from blood lead levels exceeding 60 ug/dl. Improvements in scientific research repeatedly redefined the level of lead in blood at which serious adverse effects were understood to occur. As a result, the definition of lead poisoning shifted progressively downward to 40 ug/dl in 1970, to 30 ug/dl in 1975, and then to 25 ug/dl in 1985. These levels have been associated with irreversible damage to the central nervous system, kidney, and hematopoietic system.

A growing interest in determining the threshold for adverse effects from lead spurred the completion of numerous epidemiological and experimental studies on low lead levels during the 1980s. Based on the study results, in October 1991, the Centers for Disease Control reduced the threshold definition for dangerous levels of lead in blood by 60%, from 25 ug/dl to 10 ug/dl. As a result, the number of children considered impacted by lead increased from tens of thousands to an estimated 4-6 million.³ A recent meta-analysis of 24 major studies found that children's IQ scores

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² Kozol, Forward.
³ The Centers for Disease Control fought off a last ditch effort by the Office of Management and Budget to delay indefinitely the policy statement due to the financial implications of the exponential increase in the number of children considered to be adversely affected by low lead levels.
are inversely related to lead burden, suggesting no threshold exists for adverse effects.  

Infants and young children are most at risk for lead exposure due to a high degree of hand-to-mouth activity, more efficient absorption of ingested lead, and a heightened vulnerability of their rapidly developing brain and nervous system to lead toxicity. Low level lead poisoning is characterized by the commonly asymptomatic but progressive impairment of a child's developing neurological system. Lead acts to disrupt energy metabolism at the cellular level, interferes with neural cell function in the brain, and may slow the speed at which nerves process signals. The visual, spatial and motor impairment as well as the slowness in mental functioning are often long-term and irreversible, and negatively impact on a child's ability to perform in school.

The detrimental health effects experienced by lead impacted school-aged children and adults harbor the most serious implications for the community as a whole. A study conducted by Herbert Needleman et. al. found an inverse correlation between levels of lead in baby teeth shed in the first and second grade and achievement on intelligence tests.  

The downward shift in mean IQ scores for children with high tooth lead levels (>20 ppm) was associated with a substantial increase in the prevalence of children with severe intellectual deficits. This is evident from the following chart which shows a four-fold increase in the percentage of children with IQ scores below 80, the level considered mentally retarded. For sub-populations of children with sustained higher exposures to

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7 Bone lead levels measure a chronic exposure as opposed to an acute exposure currently present in the child's environment.
lead, the shift in IQ curve would be even more dramatic, rendering in excess of 15 percent of the population impaired.

**Figure 1-1**

CUMMULATIVE FREQUENCY DISTRIBUTION OF VERBAL IQ SCORES IN CHILDREN WITH HIGH AND LOW TOOTH LEAD LEVELS.

(Source: Needleman et al., 1979.)

A long-term study following these same children eleven years later found an inverse correlation between lead absorption and educational success. The children with high dentine levels (>20 ppm) experienced a 7.4 percent increase in school dropout rates, a 5.8 percent increase in reading disabilities, deficits in vocabulary and grammatical-reasoning scores, problems with attention and fine motor coordination and a lower class rank and higher absenteeism rate than classmates with low dentine levels (<10 ppm). Lead induced brain impairment, in conjunction with the failure to perform in school compromises a child's ability to secure employment and function successfully in society as an adult.

An increased incidence of aggressive behavior and hyperactivity constitute both a physiological result of lead's impact on neurotransmitter activities as well as a psychological response.

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to the learning disorder produced by the disease. A child with lead poisoning experiences the same frustrations as children with other learning disabilities who are often unable to perform activities at the same level as their peers. Children commonly respond to these frustrations with anger, aggressive misbehavior or withdrawal. Boston developmental pediatrician Leonard Rappaport characterizes a learning disability as similar to a chronic disease. He stresses that a learning disability "has an insidious effect on families and children." Negative impacts on the functioning of a lead poisoned child's family as a whole is but one aspect of the destructive potential of lead.

Treatment options are limited for reducing the body's lead burden, not without side effects, and are unable to reverse neurological damage. Chelation by injection is a very painful, multi-stage treatment process. Sometimes children must be rehospitalized 2-3 times to reduce the concentration of lead in their blood to an acceptable level. Particularly problematic is the tendency of lead to accumulate in the body's hard tissue. The release of lead from the bones back into the blood stream during periods of stress and rapid turnover of bone e.g. pregnancy, lactation, osteoporosis, and hyperthyroidism, provides a potential biologic assault over an exposed child's lifetime.

Pregnancy represents one of the periods when a woman's bones undergo rapid turnover and release lead back into the blood stream. Fetuses constitute the population most vulnerable to the deleterious impacts of lead due to the rapid development of their systems. Maternal and umbilical cord blood lead levels as low as 10 ug/dl have been shown to be associated with low birth weight and reduced gestational age. A high correlation has also been found between foetal exposure to lead and head circumference and development

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during the first two years of life.\textsuperscript{11} Health care experts contend that low birth weight places infants at a high risk of problems ranging from speech defects to brain damage, and is the single biggest factor in predicting infant survival and health.

\textbf{CHILDREN AT RISK}

The phase out of lead from gasoline in the late 1970s and the elimination of the use of lead solder in U.S. food cans dramatically reduced average lead levels among the general population. The children most at risk of being lead poisoned are those living in older, low-income, urban neighborhoods where exterior and interior paint has been allowed to deteriorate and gas guzzler cars running on leaded gasoline were more prevalent. Poverty plays a lead role in the high susceptibility of these children to lead poisoning by tying them to a whole series of risk factors. The rise in the poverty rate for children from 15.1 percent in 1970 to 19.6 percent in 1989 has grave consequences for efforts to eradicate childhood lead poisoning.\textsuperscript{12}

\textbf{Preventative Care Through Nutrition}

Nutrition has emerged as a significant factor affecting why some children living in contaminated environments absorb high concentrations of ingested lead and others escape this fate. Calcium, iron, and zinc levels in the diet directly affect a child's susceptibility to lead toxicity by influencing lead absorption from the gastrointestinal tract as well as tissue distribution, in particular, the rate of uptake of lead by the bones.\textsuperscript{13} Adequate levels of calcium, iron, and zinc are therefore critical to a child's ability to excrete rather than absorb the lead to which she/he is

exposed. The value of nutritional supplements rests primarily with their role in preventing absorption of ingested lead, since they are ineffective in reducing levels of lead already absorbed.

The high rate of malnourishment or undernourishment of poor children plays a contributing role in the prevalence of lead poisoning among this population. A 1991 survey conducted by the Food Research and Action Center estimated that 11 million children either go hungry each day, or are at risk of hunger because their families do not have enough money to spend on food. This in part reflects the lack of federal and state funds which limited the Women, Infants and Children (WIC) nutritional program to serving only half of the children and pregnant or lactating women qualified nationally to participate in 1991.14

In mid-1990, lack of funding, in conjunction with an increasing case load, forced the Massachusetts WIC program to limit eligibility to children one year old and under. Subsequently, the 1990 waiting list for the program expanded from 6,000 women and children in June to 13,000 in December. This situation proved the most problematic for children at high risk for lead poisoning because they did not meet the federal WIC definition of nutritionally at risk. Instead the state was required to prevent these children from reentering the program until their blood lead level rose to 25 ug/dl, where they were officially diagnosed as lead poisoned. In addition, program eligibility did not extend to a sibling of a lead poisoned child living in the same high risk environment. This focus on an individual child's medical condition, as opposed to the health hazards present in the child's living environment, obviates the beneficial role of nutrition in reducing the risk of lead poisoning.

Nonetheless, governmental nutritional support does not guarantee children will receive adequate levels of calcium, iron, and zinc. A recent study conducted at Syracuse University found the Surgeon General's recommended dietary guidelines cost 25 percent more than groceries afforded on the food plan devised by the

Agriculture Department to determine food stamp allotments. Given the record 25 million Americans currently receiving food stamps, a significant portion of the population remains at risk of undernutrition. What's more, the Agriculture Department found that between 1980 and 1988, the average weekly grocery budget fell 13.1 percent for the poorest one-fifth of the nation's population and dropped 6.5 percent for the second poorest one-fifth. In contrast, middle- and upper-middle income households increased or maintained the amount budgeted weekly for food.

Health Care

Access to quality health care also affects the absorption and residence time of lead in children's bodies. Lead circulates in the blood stream an average of 30 days before being absorbed into the bones. Blood lead levels therefore reflect only a child's most recent exposure to lead. In order to detect and treat incidences of high lead absorption, at risk children must be screened every 6 months. The difficulty of implementing such a policy arises from the fact that many of the children most at risk lack adequate health coverage. The percentage of children without health insurance increased from 16% in 1979 to almost 20% in 1985, to the point where 14 million of the 38 million uninsured persons in the U.S. in 1985 were children. The utilization of hospital emergency rooms for routine care by many of the uninsured suggests that a significant number of children fail to receive their periodic screening tests as well as follow-up care.

The rise in homelessness among families which occurred throughout the 1980s greatly affected children's health care options. Efforts to screen high risk children often involve visiting all of the homes in targeted areas. The lack of a stable residence means many homeless children miss this important outreach program. In addition, even if children are identified as having elevated blood

lead levels, medical follow-up is very difficult with transient families. The estimated two year wait for Section 8 certificates in Massachusetts and the 16,000 families and elderly on the waiting list for subsidized housing in Boston indicates that this situation is unlikely to turn around in the near future.

Prenatal care represents a critical factor in determining the concentration of lead in a child at birth. Poor access to health clinics increases the potential for inner-city women with high concentrations of lead stored in their bones to transfer this lead to their fetuses. A fetus will draw the calcium it requires from the mother's bones, receiving lead in the process, if nutritional intake is insufficient. Many clinics treating women likely exposed to lead as children routinely provide massive dosages of calcium in the hope of amending this process. The low percentage of high risk women receiving prenatal care attests to the limited reach of this strategy.

Mothers can also pass high levels of lead to their children through breastfeeding. A study of urban women with newborn infants, conducted by Howard Hu, a researcher at the Harvard School of Public Health, found that the mean level of lead in breast milk was 10.6 micrograms of lead per liter (ug/L). Almost half of the women's milk exceeded EPA's drinking water standard of 20 ug/L. The study also found the level of lead in the milk to be inversely correlated with the number of children, a phenomena consistent with animal studies which show that pregnancy reduces the skeletal concentration of lead. While an increase in fiscal year 1992 funding enabled the Massachusetts's WIC program to remove all of the children from its waiting list, 7500 pregnant or lactating women still await nutritional assistance.

MAJOR SOURCES OF LEAD EXPOSURE

Evidence of lead's toxicity to humans dates back to the late 1800s. The first published article linking the ingestion of lead-

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17 Howard Hu, February 20, 1992, Lecture at Harvard School of Public Health.
18 Florence Peterson, Interview, Massachusetts WIC Program, Department of Welfare, April 17, 1992.
based paint to childhood lead poisoning appeared in the *Australian Medical Gazette* in 1904. In response to medical evidence showing the toxicity of white lead to workers in the painting industry, dozens of countries, banned the use of lead-based paint in interior of buildings in the 1920s. The Convention Concerning the Use of White Lead in Painting was adopted on November 25, 1921 at the International Labor Conference. Heavy lobbying by the lead industry succeeded in ensuring the United States did not follow suit, thereby greatly expanding the scope of this country's contamination problem. A number of the same companies which marketed lead-based paint in this country sold lead-free paint abroad. The lead industry was similarly successful in combatting an attempt to ban lead-based paint in 1954 in Massachusetts.

In 1922, scientists at the GM Research laboratory discovered that tetraethyl lead raised the compression and hence the speed of automobile engines when added to gasoline. GM, which had an interlocking directorship with Dupont Chemical Company, contracted with Dupont to produce lead for gasoline. A short time later the two companies created the Ethyl Corporation. Recognizing the need to certify the safety of lead, GM and Dupont contracted with the U.S. Bureau of Mines to conduct an impartial study. However, the contract required the federal agency to submit all study results to the Ethyl Corporation for approval prior to public release. In this way, the federal government conspired with the lead industry to violate the public interest when it released its study certifying the safety of lead.

Conditions in a tetraethyl lead processing plant made the front page of *The New York Times*, in 1924, after five workers died and 35 others showed severe neurological symptoms of organic lead poisoning. In response to the documentation of numerous cases of occupational lead poisoning, the Surgeon General called a national meeting entitled "A Conference to Determine Whether or Not There is

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a Public Health Question in the Manufacturing, Distribution or Use of Tretraethyl Lead Gasoline." Heavy lobbying by the lead industry effectively overwhelmed those in opposition. Citing automobiles and oil as central to the industrial progress of the nation and the need to conserve petroleum in light of limited domestic oil supplies, a representative of the lead industry characterized the discovery of tetraethyl lead as an "apparent gift of God". Subsequently, both tetraethyl lead and tetramethyl lead attained widespread use as an antiknock gasoline additive. Throughout the twentieth century, the lead industry has engaged in a strong public relations campaign and lobbied the federal and state governments hard to downplay the hazards of lead to human health. However, despite industry assurances as to the safety of the use of lead in gasoline, New York City, Philadelphia and a number of other cities and states banned the sale of leaded gasoline during the early 1920s.

During the 1920s and 30s, 70 - 80 percent of lead mined in the United States was used in paint. Between 1935-1968, lead use shifted dramatically as white lead consumption in thousand tons dropped from approximately 80 to 6, lead in gasoline jumped from 37 to 262, and use in storage batteries increased from 175 to 513 thousand tons. In 1976, when EPA moved to phase out leaded gasoline due to its interference with the proper functioning of the catalytic converter emissions control system, approximately 90 percent of gasoline manufactured in the United States contained lead additives.

Lead-Based Paint

Lead paint in housing has long been held as the most critical

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21 Ibid., p 126.
source of environmental exposure to lead for children. Ingestion of lead dust in the home through normal hand-to-mouth activity constitutes the most common pathway of exposure. When lead paint deteriorates, depending on the source, lead dust may settle onto the floors and into the carpets, furniture and/or window wells. Young children who crawl on the floor or play on lead contaminated surfaces, pick up lead on their hands and toys. The lead is then ingested when they put their hands and toys in their mouths. Children in an environment contaminated with high lead dust levels thus ingest significant quantities of lead through their everyday play activity. Consequently, children living in sub-standard housing or in homes undergoing renovation are at highest risk of lead poisoning. Homes with lead paint covered windows may also often have high dust levels as a result of the abrading of contaminated surfaces.

The experience of many childhood lead poisoning prevention programs attests to the role of a highly lead contaminated home in contributing to children's elevated blood lead levels. Children's lead levels drop upon removal from a home with lead hazards (unless the bones release lead into the blood stream), only to rise again upon return if the hazards have not been abated. A study conducted at the Kennedy Institute Lead Clinic in Baltimore compared blood lead levels over time of children hospitalized for poisoning to the degree of environmental lead exposure of the child's dwelling. They found that only the children discharged to lead-free housing escaped a recurrence of lead toxicity. In contrast, within one month of the return of those children residing in high lead housing, all of them experienced the need to be rehospitalized for blood leads in excess of 50 ug/dl. This study illustrates the fact that medical forms of

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CDC, 1991.
26High Lead Housing is defined as old inner city housing containing lead pigment paints flaking and chipping from various interior and exterior surfaces.
intervention are for the most part ineffective when source abatement is ignored.

**Contaminated Soil**

The high density of two- and three-family houses, either wood-framed or with porches constructed of wood, results in a high concentration of Pb released to urban soil. Lead-based paint designed for exterior use was highly valued for its durability as well as its quality of chalking instead of peeling as it aged. Dry scraping or sandblasting the exterior of a house without adequate containment as well as the gradual deterioration of exterior paint thus produces a continual reservoir of lead dust for deposition to the soil. The higher concentration of atmospheric lead emitted in dense urban areas from mobile sources e.g. automobiles and trucks also contributed to soil lead levels. Sixty-five percent of lead particles emitted from cars settled out locally producing concentrations of lead in soil along heavily travelled roadways of up to 10,000 ppm.27

The relative immobility of lead means that the years of lead deposition remain concentrated in the top 6-12" of soil. Soil lead in some inner-city neighborhoods approaches the concentrations found on industrial sites. Average surface soil lead levels in Boston’s Emergency Lead Poisoning Areas exceed 2500 ppm, with some residential yards close to 7000 ppm.28 In contrast, a soil testing project conducted throughout the Boston area between 1980 and 1984 found average soil lead levels of 700 ppm.29 Young children who play in the soil can thus find themselves playing in material classifiable as hazardous waste.

Children ingest soil lead directly through pica30 or through putting dirt-covered hands in their mouths. The fine size of lead particulates from chalked paint or deposition from airborne gasoline

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30Pica is defined as the repeated ingestion of non-food substances.
lead allows it to cling easily to children's hands. Soil lead serves as a source of interior house dust when it is tracked or blown in through normal household traffic or during a windy day. The EPA Boston Lead-in-Soil project found interior dust lead levels which averaged 2500 ppm on the floor and over 21,000 ppm in the window wells. In comparison, HUD accepts dust lead levels of 200 ppm for floors and 800 ppm for window wells as safe.

**Industrial Structures**

The failure of the Consumer Product Safety Commission to extend the ban on lead-based paint to industrial structures constitutes a continued source of new lead to a number of neighborhoods. The cyclical sandblasting and repainting of metal structures such as bridges and transit lines repeatedly spreads lead dust throughout the environment. Numerous cases have occurred in New England where entire neighborhoods have not only had their yards covered with lead dust during a repainting operation, but also find lead dust throughout the interior of their houses. Although a few politically mobilized communities have successfully forced contractors to clean-up the resulting contamination, most remain either unaware of the hazards or powerless to achieve remediation. The current structure of environmental regulation in most states fails to address short term releases of lead dust. Local health departments choosing to regulate sandblasting utilize their broad powers under general nuisance clauses or fugitive dust statutes. The potential for contractors to sue the city or town for unjustified regulation allows legal counsels to overturn health department policies.

31 Weitzman et. al., 1992
32 The deterioration of lead paint on window friction surfaces as well as dust blown in from exterior sources usually renders window wells the locus of very high dust concentrations.
The issue of lead abatement on industrial structures has yet to graduate from a local/regional problem to emerge as a major policy issue on the federal level. The contention of the Occupational Safety and Health Administration (OSHA) that improved containment compromises worker health supports the avoidance of environmental controls by contractors. Current negotiations between OSHA, EPA, and the Department of Transportation concerning a sandblasting containment policy for metal structures risk prioritizing worker protection over containment in a static manner instead of advocating research to develop improved sandblasting technologies.34

Water

The final source of potentially significant lead arises from the old use of lead pipes in many city's water infrastructure. Most older cities in New England have sought to address this problem through adding anti-corrosive chemicals to the water supply at the source.35 However, the lead plumbing in many older homes may still contribute high levels of lead if the pipes have not been adequately flushed when the water has been sitting in it for more than six hours. Babies on formula constitute the most vulnerable population for developing lead poisoning from water since the formula/water mixture poses such a high percentage of their daily food intake.

HOUSING STOCK AFFECTED

Nationally, HUD estimates that of the 57 million housing units with lead-based paint, 3.8 million units, or five percent of the occupied housing stock built prior to 1980, constitute priority threats to children due to non-intact lead paint or excessive lead

34Internal EPA communication.
35The Lead and Copper Rule under the federal Safe Drinking Water Act will force many communities to begin the expensive process of water line replacement, if they are unable to achieve acceptable water lead levels through measures such as corrosion control.
This number, however, under-represents the number of children impacted by this portion of the housing stock. The fact that low-income people tend to change residence more often produces a continuing cycle of children through apartments hazardous to their health.

Table 1-1
ESTIMATED NUMBER OF HOUSING UNITS WITH LEAD-BASED PAINT, ONE OR MORE RESIDENT CHILDREN UNDER AGE SEVEN, AND WITH NON-INTACT LEAD-BASED PAINT OR LEAD DUST, BY HOUSEHOLD INCOME AND TENURE
(Numbers Represent Thousands of Housing Units)

<table>
<thead>
<tr>
<th>Income</th>
<th>Rent</th>
<th>Own</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $30,000</td>
<td>1,305</td>
<td>691</td>
<td>1,996</td>
</tr>
<tr>
<td>More than $30,000</td>
<td>422</td>
<td>1,422</td>
<td>1,844</td>
</tr>
<tr>
<td>Total</td>
<td>1,727</td>
<td>2,113</td>
<td>3,840</td>
</tr>
</tbody>
</table>

(Source: U.S. Department of Housing and Development 1990.)

Massachusetts estimates that 1.2 million housing units, or approximately 65 percent of the housing stock, contain high concentrations of lead in paint. This number is based on an analysis of the number of units constructed prior to 1950. After this date, the concentration of lead commonly used in paint dropped to a level generally considered safe. This estimate also represents the universe of housing units contaminated with lead paint i.e. potential hazards, rather than the immediate problem posed by the priority hazard units.

Of the top ten "hot spot" cities which together account for 70 percent of the state's lead poisoning cases, over 80 percent of the housing units are contaminated with lead paint. Boston, with 30 percent of the state's 1991 lead poisoning cases, has approximately

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36Defined as at least 5 square feet of defective lead-based paint or lead in dust exceeding 200 ug/sq ft for floors, or 500 ug/sq ft for window sills, or 800 ug/sq ft for window wells. Massachusetts uses the same dust clearance standards.

197,525 units of pre-1950 housing. Springfield, with 6.4 percent, the next highest percentage of the state's cases, has an estimated 42,230 units of housing constructed prior to 1950. The concentration of children at high risk for lead poisoning residing in inner-cities, in conjunction with the poor condition of the housing stock within their financial reach renders the situation of 85 percent of the housing stock contaminated in Boston a much greater health hazard to children than if the same percentage of housing stock was contaminated in a more affluent community like Newton.
CHAPTER 2: GEOGRAPHIC AND RACIAL CONCENTRATION

URBAN LEAD CONCENTRATION

The fact that an estimated 74 percentage of homes in the nation constructed prior to 1980 contain lead paint\footnote{HUD, p. xvii, 1990.} suggests the conclusion that lead potentially poses an equal threat to all sectors of society. Factors such as the large quantity of lead emitted into the environment from the heavy volume of vehicular traffic and the high density of painted housing exteriors in urban areas play a critical role in debunking this myth. In addition, changes in the use and production of lead-based paint coincided with the increasing suburbanization of America to result in a significant location differential for housing with potentially high risk sources of lead.

Disregarding the limited number of industrial hot spots, inner-cities represent the most toxic locus of elevated environmental lead levels. Dr. Bert Brunekreef performed a study in the 1980s in the Netherlands on the relationship between environmental lead and children’s blood lead. He found total environmental lead exposure to be responsible for more than half of the difference in suburban and urban children’s blood lead levels.\footnote{Hynes, p. 144, 1989.} Lead in exposure variables, such as school playgrounds and sidewalk dust, were two to three times greater in cities than in suburbs.

Inner-cities also include the highest concentration of lead contaminated housing and the housing with the highest lead content in the paint. An important factor in identifying high risk housing concerns the continuous decline in the use of lead-based paint in residential structures beginning in the 1940s. HUD estimates that while 90 percent of pre-1940 housing has lead-based paint in the interior or on the exterior, this number falls to 80 percent for homes built between 1940 - 1959, and down to 62 percent for homes built between 1960 - 1979.\footnote{The Department of Housing and Urban Development determines that a home contains lead-based paint if any paint is found to have a lead content of 1.0 mg/sq cm or} In addition, by the 1950s most of the
paint manufacturers still producing lead-based paint had dramatically reduced the percentage of lead (previously up to 50% lead) in their products. In 1955, the American National Standards Institute (ANSI) established a one percent voluntary standard for lead in interior paints.\textsuperscript{41}

The differential lead content in specific communities' homes shows up dramatically when analyzed in terms of paint lead concentration.

<table>
<thead>
<tr>
<th>Location and Construction Year</th>
<th>Percentage of Homes with Paint Lead Concentration (mg/sq cm)</th>
<th>(\geq 0.7)</th>
<th>(\geq 1.0)</th>
<th>(\geq 1.2)</th>
<th>(\geq 2.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior</td>
<td></td>
<td>66%</td>
<td>51%</td>
<td>40%</td>
<td>22%</td>
</tr>
<tr>
<td>1960-1979</td>
<td></td>
<td>60%</td>
<td>41%</td>
<td>28%</td>
<td>7%</td>
</tr>
<tr>
<td>1940-1959</td>
<td></td>
<td>70%</td>
<td>59%</td>
<td>44%</td>
<td>20%</td>
</tr>
<tr>
<td>Pre-1940</td>
<td></td>
<td>73%</td>
<td>60%</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Exterior</td>
<td></td>
<td>70%</td>
<td>60%</td>
<td>51%</td>
<td>36%</td>
</tr>
<tr>
<td>1960-1979</td>
<td></td>
<td>55%</td>
<td>42%</td>
<td>31%</td>
<td>12%</td>
</tr>
<tr>
<td>1940-1959</td>
<td></td>
<td>82%</td>
<td>76%</td>
<td>69%</td>
<td>46%</td>
</tr>
<tr>
<td>Pre-1940</td>
<td></td>
<td>83%</td>
<td>79%</td>
<td>69%</td>
<td>66%</td>
</tr>
<tr>
<td>Anywhere in Building</td>
<td></td>
<td>86%</td>
<td>74%</td>
<td>63%</td>
<td>43%</td>
</tr>
<tr>
<td>1960-1979</td>
<td></td>
<td>80%</td>
<td>62%</td>
<td>47%</td>
<td>18%</td>
</tr>
<tr>
<td>1940-1959</td>
<td></td>
<td>87%</td>
<td>80%</td>
<td>74%</td>
<td>52%</td>
</tr>
<tr>
<td>Pre-1940</td>
<td></td>
<td>94%</td>
<td>90%</td>
<td>79%</td>
<td>75%</td>
</tr>
</tbody>
</table>

(Source: HUD 1990.)

In absolute numbers, approximately 15.7 million pre-1940 homes have a paint lead concentration of greater than 2.0 mg/sq cm as compared to 6.4 million post-1960 homes.

greater, as measured by x-ray fluorescence (XRF). This standard was established by the Housing and Community Development Act of 1987.

\textsuperscript{41}\textit{American Academy of Pediatrics, Committee on Environmental Hazards, "Lead Content of Paint Applied to Surfaces Accessible to Young Children,}" \textit{Pediatrics} 49:918-921, 1972.
The above chart does not reflect the distribution of the actual paint lead concentrations often found in older homes due to the application of numerous coats of lead-based paint. In the EPA Boston Lead-in-Soil study, the mean paint lead concentrations in the homes ranged from 3.1 mg/sq cm for the walls to 6.3 mg/sq cm for the woodwork. In addition, a paint lead concentration of 10 mg/sq cm was found in 50 percent of the homes on the woodwork and in 22 percent on the walls.\textsuperscript{42} If the concern is dust from interior or exterior paint, or even children chewing on window sills or eating paint chips, children potentially have access to a much higher quantity of lead in pre-1940 housing than children residing in newer housing.

**WHOSE CHILDREN ARE BEING POISONED?**

Urbanization trends in the 1980s furthered the movement since the 1950s of society's wealthier citizens locating in suburban cities. This relocation continued to exacerbate the concentrated impact of lead poisoning demographically. Moreover, the past decade has seen a decrease in these one-time bedroom communities sending residents into the city. These areas have instead grown into metropolitan areas which have successfully developed their own economies and job bases. The resulting spatial segregation by income strata and race have effectively deepened disparate racial and educational inequities. Older urban centers are increasingly forced to deal with the problems of decaying infrastructure as well as care for the elderly and poor without a growth in tax-base.\textsuperscript{43} To a growing extent, the high concentration of lead in urban soils and in older housing stock is the province of minorities and the poor.

Many epidemiological studies have demonstrated the dramatically higher level of urban children's blood lead as compared to the rest of the country. In 1988, the Agency for Toxic Substances and Disease Registry reported to Congress that 3-4 million children

\textsuperscript{42}Weitzman et. al. 1992.

have blood lead levels above 15 ug/dl. While this translates into 17 percent of children nationally, almost 70 percent of urban African-American children below the poverty line and 35 percent of poor urban white children exceed that level.\textsuperscript{44} Given a 1988 poverty rate of almost 45 percent for African-American children, 38 percent for hispanic children, and 14.5 percent for white children,\textsuperscript{45} the geographic concentration of the poor in the high lead inner-cities has a significant differential impact on racial groups.

The Second National Health and Nutrition Examination Survey (NHANES II) showed a marked racial as well as locational difference in the incidence of childhood lead poisoning.\textsuperscript{46}

Figure 2-1

ESTIMATED PERCENTAGES OF CHILDREN 6 MONTHS TO 5 YEARS WHO ARE PROJECTED TO EXCEED A BLOOD LEAD LEVEL OF 10 UG/DL BY STRATA AND RESIDENCE IN SMSAs\textsuperscript{47} OF 1 MILLION OR MORE.

The fact that African-American children in families with incomes at least two and one half times that of poor white children have a greater incidence of lead poisoning reveals a sharp disparity between racial groups. The disproportionate burden of lead poisoning borne by specific communities is illustrated by an

\textsuperscript{44}EDF, p. 24, 1990.
\textsuperscript{45}Bassuk, 1991.
\textsuperscript{46}EDF, p. A 3,1990.
\textsuperscript{47}Standard Metropolitan Statistical Areas.
analysis of the four neighborhoods in Boston where minorities are concentrated. Between October 1979 and February 1985, these neighborhoods produced 87 percent of the city's lead poisoned children, while accounting for only 56 percent of the at-risk population (9 months to 6 years old). Within these areas, twenty-eight 2-3 city block sub-neighborhoods, designated as Emergency Lead Poisoning Areas, accounted for nearly 30 percent of the lead poisoning cases, but only 4.4 percent of the at-risk population. These figures were calculated using 25 \( \text{ug/dl} \) as the lead poisoning standard. A door to door screening of 843 children in Boston's high risk neighborhoods, conducted during the summer 1991, found that 84.5 percent of the children's blood lead levels exceeded 10 \( \text{ug/dl} \), while 42.3 percent exceeded 15 \( \text{ug/dl} \).^{48}

**Racial Disparity: Individual or Societal Responsibility**

The reasons behind the racial disparity in the incidence of lead poisoning has received little study. Emphasis on the fact that a higher percentage of the African-American population is poor and therefore is more likely to reside in substandard housing fails to address the racial discrepancy in rates of poisoning within the specific income categories. In the NHANES II Survey, as incomes for urban white and African-American families increased from \(< \$6,000\) to \(> \$15,000\), the spread between the percentage of children impacted in the different racial, but same income groups, increased from 12 to 39 percentage points. Some of the interpretations of this phenomenon range from biological factors and eating habits on one end to racism on the other, with health care and parental supervision in between.

**Biological and Dietary Factors**

Biological factors play a potential role in increasing the absorption rate of ingested lead. The two elements most commonly suggested involve the higher rate of sickle cell anemia and possibly

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lactose intolerance among the African-American population. Given the essential role of iron, zinc, and calcium in helping the body to excrete rather than absorb ingested lead, an inability to fully metabolize these nutrients might contribute to a higher lead body burden. Sickle-cell anemia is thought in some way to effect the binding of lead to red blood cells. Theories have also proposed that African-Americans may store lead more readily in the bones than whites.\textsuperscript{49} Frequent consumption of imported canned food provides a significant source of lead to a child. The FDA banned the use of lead solder to seal cans due to the leaching to lead into the food. Since the FDA never extended this ban to imported foods, dietary habits can contribute to the amount of lead a child ingests. Research needs to be conducted to determine the relevance of these factors for lead poisoned children.

**Poor Access to Health Care**

The higher percentage of minority children with poor health care serves to compound biological or dietary factors which contribute to their vulnerability to lead poisoning. As with most preventable health problems, minority communities face a much higher incidence of infant health problems than society at large.\textsuperscript{50} Although the rate of African-American mothers in Massachusetts receiving adequate prenatal care rose from 54.2 percent in 1989 to 60 percent in 1990, this still represents a lower level of care received as compared to the 84.4 percent rate for white women.\textsuperscript{51} The fact that the majority of girls and women in these communities have high levels of lead in their bodies and inadequate health care suggests a significant incidence of newborns beginning life with

\textsuperscript{49}\textsuperscript{Dr. John Graef, Director, Children's Hospital Lead and Toxicity Clinic, Presentation, at the Massachusetts Association of Community Development Corporations' conference "Lead Paint Abatement: Liabilities and Responsibilities of Property Owners," May 18, 1992, Waltham, MA.}


\textsuperscript{51}\textsuperscript{Kong, D., "Infant Mortality Drops; Disparity by Race Remains," p. 1, The Boston Globe, April 28, 1992.}
higher blood lead levels and struggling from the outset against lead's adverse effects.

In addition, the greater vulnerability of low birth weight babies to disease suggests that they may also be more susceptible to lead toxicity. In Massachusetts, 11.4 percent of all infants born to African-American mothers weighed less than 5 1/2 pounds in 1990, more than double the 5 percent low birth weight babies among whites. Consequently, low-income African-American babies may be beginning their lives with higher lead levels and absorbing ingested lead more efficiently, to result in a higher rate of elevated blood lead levels as compared to low-income white children living in the same type of substandard housing.

**Capacity to Parent**

Lack of parental supervision to this day remains as a popular explanation for the higher incidence of lead poisoning among poor and minority children. The strength with which this argument still holds is illustrated by the assertion of a woman at the 1992 public hearing for the Massachusetts lead law amendments. She stated that the most effective method for eradicating childhood lead poisoning would be to make new mothers watch a video on behavioral practices which reduce exposure to lead. While parents deserve information about measures they can take to reduce their child's susceptibility to lead poisoning, failure to abate the source of the contamination guarantees the continued incidence of elevated blood lead levels.

Rather than asserting that African-American mothers are inherently worse at parenting than white mothers, attempts are made to locate the posited lack of parental supervision in the over taxed family structure. The growing number of minority children living without either their mother or father, as well as the dramatic increase in the number of "out-of-wedlock" births for

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52Ibid.
African-Americans\textsuperscript{54} means that increasing numbers of minority children are living in fragile family structures. Single-mothers face many obstacles such as juggling jobs, running a house and raising children alone, but are not by definition incapable of adequately supervising their children. Attention also needs to be given to the prevalence of extended households in minority communities where single mothers continue to live with their own mothers.

Stereotypes cast low-income African-American women as on welfare with large numbers of children. The 1992 welfare statistics strike down this myth, revealing that the average woman on AFDC has only 1.8 children. Problems with supervising children might be better associated with an increasing number of children, than with income. No comprehensive studies have been conducted which analyze the full range of parameters for lead poisoned children such as age of housing, housing type, concentration of lead in housing and soil, family size, income group, and racial group. As a result, insufficient data exists to warrant the strength with which poor parenting still presides as the primary cause of lead poisoning.

\textbf{Residential Segregation and Discrimination}

Suggestions that African-American parents poorly supervise their children ignores the fundamental role of race in shaping our society. William Ryan, in his study of the impact of middle-class ideology on government efforts to combat poverty, asserts that by focusing on "cultural deprivation" and the "deviant Negro family", "racism, segregation, and the powerlessness of the ghetto are subtly, but thoroughly, downgraded in importance."\textsuperscript{55} Residential segregation and discrimination, in particular against single women with children, as well as poverty induced by African-American women being paid the lowest salary rate vis \'a vis men and white women, emerge as critical factors in determining the quality of housing available to minorities.

\textsuperscript{54}The number of births to single African-American women increased from 16.8 percent in 1950 to 63.7 percent in 1988.
\textsuperscript{55}Ryan, p. 5, 1972.
Despite the economic and civil rights gains achieved over the past three decades, African-Americans still have more limited mobility options than whites. A HUD study of 40 large metropolitan areas in 1979 found that African-Americans faced a 72 percent chance of experiencing discrimination in the rental housing market and a 48 percent chance in the sales market. The report also concluded that more than 70 percent of whites and African-Americans who sought rental housing and 90 percent of those who were looking to buy were steered into separate neighborhoods. Robert Bullard, a professor of sociology at University of California, contends that federal housing policies, institutional and individual discrimination in housing markets, geographic changes that have taken place in the nation's urban centers, and limited incomes constitute the factors responsible for shaping African-American's residential options. As a result, African-American families find themselves in lower quality housing than white families, even in the same income bracket.

Another important factor influencing housing options for minorities is their disproportionate lack of access to credit as compared to their white economic counterparts. The Federal Reserve Bank of Boston found that African-Americans in urban areas throughout New England face rejection rates for home mortgages more than three times higher than whites with the same incomes. Urban New England's rate of rejecting African-American mortgage applicants is higher than urban areas in the rest of the country. However, the pattern of discrimination reflects the national trend where only 59 percent of middle-class African-Americans own their own home, compared with 74 percent of whites.

59 Bullard, R.D., Feagin, J.R., "Racism and the City".
The resulting low home ownership rate among minorities means the large percentage of the at risk population is forced to maintain a more vulnerable status of renters. Although a number of tenants paying low rents invest a portion of their own money in emergency apartment repairs, their resource base is inadequate to address the ongoing maintenance necessary to render an apartment "lead safe". Lack of access to credit therefore leaves minorities with the economic means to own their own homes at the mercy of finding a landlord with both the means as well as the will to maintain the property in a safe condition.

Another factor which influences the higher incidence of lead poisoning among African-Americans is the prevalence of noxious land uses in their neighborhoods. When the construction of a new highway or a bridge necessitates land clearance or siting near a residential community, minority neighborhoods are often the first selected. The high air lead concentration produced by heavy traffic volumes contributed to significant levels of lead inhaled by residents in adjacent communities and precipitated out to contaminate soil and homes with lead dust.

CONCLUSION

A comprehensive attempt to eradicate lead poisoning requires moving beyond the simple fact that children are poisoned from lead in or around their homes, and attempts to ascertain the most appropriate abatement method. Instead an in-depth analysis of the social, political and economic causation factors needs to be conducted. The racial, geographic, and economic disparity in the incidence of lead poisoning mirrors fundamental social inequalities imbedded in society. This is one reason childhood lead poisoning is often referred to as a civil rights issue. If biological factors in fact heighten African-American children's susceptibility to the disease, then appropriate health and nutritional strategies need to be developed. However, the large role played by poor access to health care, and economic and residential discrimination and segregation

60Bullard, Dumping in Dixie.
also require much more far-reaching and inclusive strategies for change.
CHAPTER 3: SUBSTANDARD HOUSING IN POOR AND MINORITY COMMUNITIES: THE ENFORCEMENT PARADOX

AN ISSUE OF CHOICE

The problems associated with eradicating a preventable disease such as lead poisoning illustrate the complicated nature of addressing environmental health problems which are inextricably linked to the functioning of inner-city communities and the limited ability of a large segment of society to meet their basic human needs. Fundamentally, lead poisoning is first and foremost an issue of access to safe and sanitary housing. The convergence of urbanization trends and discrimination against low-income people and minorities have limited the economic reach of these two groups to housing and environments with high concentrations of lead accessible to children.

The critical distinction between the presence of lead in substandard or marginally maintained housing as opposed to housing in good condition revolves around the issue of choice. Economically secure groups generally have the wherewithal to maintain their homes in such a manner as to limit the availability of harmful levels of lead to their children. Consequently, lead often only becomes accessible to such children through poor renovation jobs which spread lead dust throughout the home. To a large degree, deliberate actions of the parents result in hazardous levels of lead in the children's environment. The altering of a lead contaminated surface without the appropriate safeguards, whether due to either a lack of awareness or an educated risk knowingly accepted in order to cut project costs, constitutes a problem within the power of the financially viable homeowner to modify. For example, people often strip lead paint from a surface without removing their children from the house for the duration of the project. In addition, they usually let the dust fly everywhere and then just sweep up the debris, unaware that they need to use a special HEPA vacuum and/or wet-mop with tri-sodium phosphate in order to remove dangerous dust levels.
In contrast, the economics of the urban housing market has resulted in a concentration of deteriorated housing with a high lead content in inner-cities. Low-income and minority families reside in this poor quality housing, due either to a lack of safer alternative affordable housing, or a lack of income or access to credit to adequately maintain their property. The phenomenon of families forced to live in a deteriorated unit most likely hazardous to their child's health renders inner-city lead a much more complex and intractable problem.

POOR AND MINORITY PEOPLE'S HOUSING: RECIPES FOR NEGLECT

Many factors such as access to credit come into play as determinants of the viability of the low-income housing market. The long-term trend toward disinvestment in Northeast central cities has been shown to have a strong if not controlling racial component. Allen Fishbein, general counsel of the Center of Community Change, asserts that in cases around the country, investment has dried up almost as soon as neighborhoods turn from predominantly white to predominantly minority. The widescale abandonment of inner-city neighborhoods by banks, savings and loans, mortgage firms and insurance companies left low-income residents the choice of either obtaining money necessary for repairs from high-interest second mortgage lenders or letting their homes fall into disrepair. As a result, banks have destabilized these neighborhoods through a two-fold process. While many people lose their homes through foreclosure because they can't make the high mortgage payments, the lack of access to credit to perform necessary maintenance has resulted in the release of hazardous levels of lead from the paint as the houses deteriorate.

The experience of minority neighborhoods in Boston illustrates the disinvestment process and the associated impact on the housing condition. This process also reflects factors which contribute to why African-Americans with incomes high enough to own property

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have children with higher lead levels. The condition of the housing stock in Dorchester and Mattapan is in part tied to the white flight which occurred during the late 1960s and early 70s. As the neighborhoods underwent transition, the owners who began to think about leaving stopped maintaining their two-family houses and triple-deckers, which dated back to the late nineteenth and early twentieth century. A study of triple-deckers in Boston found that as early as 1910 people were noting the vulnerability of these structures to premature deterioration if not constantly maintained. One of Boston's pioneer social workers is quoted as observing, "The triple-decker is notoriously short lived if no outlay is ever made for upkeep."62 While the investors and minority homeowners who bought the properties acquired them in fair shape, they soon required an additional influx of money for maintenance.

Urban renewal programs like the Boston Banks Urban Renewal Group offered low-income minorities government-backed mortgages at low interest and with low down payments during the late 1960s and early 1970s. After hundreds of families purchased properties through these programs, the banks returned to their normal credit requirements and refused to lend additional funds for home repairs. Bernard Frieden, a professor of urban development at MIT, describes the circular process that sets in with these situations, "People can't fix up their homes because they can't get a mortgage, so you get buildings aging and falling apart, and that leads to a belief that the neighborhood is a poor investment risk, because the buildings are falling down."63 Another dynamic at play in these communities involves investors seeking a profit, who often collect rental income while letting their buildings deteriorate, and then torch or abandon their property.

The refusal of financial institutions to give mortgages to minorities in the inner-city means that potential new buyers who would most likely be owner occupants, can't move in and fix up the

63 Canellos, October 23, 1991.
housing stock. Not only is the result foreclosures, but also people stuck with deteriorating housing they can't sell. Consequently, the highest concentration of the city's children at risk due to poor nutrition and inadequate access to health care live in the most toxic housing stock.

The consequences of this urban neglect and racial discrimination are illustrated by the fact that although lead contaminated units are spread throughout all of Boston's thirteen neighborhoods, the incidence of lead poisoning is highly concentrated in the minority communities. Dorchester, Roxbury, and Mattapan accounted for 27 percent of the city's occupied housing stock and 45 percent of the children under 6 years of age in 1990. And yet, 76 percent of the children reported as lead poisoned in 1991 lived in these three neighborhoods. Given the poor access to health care in these neighborhoods, this percentage most likely underrepresents the scope of the problem.

**SUBSTANDARD HOUSING: A SOCIAL GOOD**

The lack of quality housing accessible to low-income urban residents has been the topic of much debate dating back to reformers such as Jacob Riis' whose forceful indictment of New York City slums woke up many policy makers to the horrors of tenement living. In 1890, Riis denounced tenements, contending that, "...the 'system' that was the evil offspring of public neglect and private greed has come to stay, a storm-centre forever of our civilization." In the 1960s the Kaiser Commission found that nearly a quarter of the nation's housing stock was substandard. While this number had been reduced to three percent by 1983, this translated into 7.6 million occupied units, 5.5 million of which were occupied by lower-income renters and homeowners.

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641990 Census of Population and Housing, Summary Tape File 1, Boston Redevelopment Authority.
The large number of ill-housed and homeless families illustrates the need for the existence of a large quantity of low-cost housing. A basic issue inherent in such housing though involves the financial feasibility of operating a property and maintaining it in good condition. Cushing Dolbeare, founder of the National Low Income Housing Coalition sums up one of the underlying dilemmas of low-income housing. Focusing on the necessary costs for maintenance, taxes, heat and utilities, Dolbeare states, "Housing gets abandoned before it gets affordable for low-income people." 68

Lisa Peattie contends that "poor people benefit from being able to acquire housing that suits their economic circumstances, rather than housing that puts them at a disadvantage." 69 In 1989, only one-third of poor households making less than $7,600 a year received any government subsidy. Of the remainder, 77 percent of renters--3.3 million households--and 54 percent of poor homeowners--2.2 million households--paid more than half their incomes for housing." 70 Spending 50 - 70 percent of $7600 for housing (most likely contaminated with lead) compromises the ability of a family to maintain good nutrition and purchase essential commodities. Although reducing the amount spent on housing forces a family to move to lower-quality accommodations, the increase in disposable income could potentially increase their immediate overall standard of living. In comparison, an increase in the cost of housing, even with the associated increase in quality could come at the expense of other essentials. Therefore, factors which influence the cost or supply of marginal housing have a dramatic impact on low-income communities.

Complaints have been levied against the Massachusetts lead law as contributing to homelessness due to the discrimination against families. However, it is when plans to proactively inspect the worst housing are implemented that large numbers of families could find themselves without shelter. Property owners of marginal

housing have multiple housing code violations other than lead, raising the possibility that they will either voluntarily walk away from their buildings, or do so as a result of their inability to finance such a large project.

This represents the central paradox behind enforcement of housing codes. A significant portion of the low-income housing stock would require an investment of thousands of dollars to bring the worst housing units into compliance with safety regulations, including lead paint. When threatened with court action, some owners will abandon their buildings. Others will bring their units up to code and raise the rents to cover their increased debt burden. Another group of owners will find their units declared uninhabitable due to their inability to fund the necessary repairs. All three scenerios further diminish the supply of affordable housing. This in turn results in overcrowding and homelessness, while driving up the price of the remaining low-cost housing. The basic economic fact remains that if the housing was higher quality, it would command a higher rent.

Rental housing subsidies such as the federal Section 8 program constitute one way around this dilemma by helping to facilitate homeowner investment. Guarantying property owners a steady income and allowing rents to float slightly above market provides owners with both an incentive as well as the financial wherewithal to perform necessary repairs. Banks also look more favorably on a loan applicant with a governmental contractual base for their rental income. Rental subsidies in effect, "shift owners' subsidies into the public sector, ...while acknowledging that private as well as public housing is a valuable low income housing resource."71 An expansion of the rental subsidy program, which requires lead abatement as a condition of occupancy for families with young children, would aid property owners as well as provide safe housing to the thousands of families still trying to get on the program waiting list in Massachusetts.

The housing stock where children are experiencing the highest rates of brain damage does not always fit into the model of a financially viable business with sufficient equity in the house to allow absorption of the costs of lead removal. The argument that people have no business owning property if they cannot maintain it, while true in an absolute sense, bypasses the issue of a person's changing circumstances. Mary Padula, the Secretary of the Massachusetts Executive Office of Communities and Development, describes the current housing market as follows,

In cities throughout the state, landlords faced with high bank loans and plunging property values have abandoned property or seen it consumed by arson fires, leading to the downfall of entire neighborhoods.72

An additional argument that the deteriorated high risk housing warrants demolition if it cannot be made safe ignores the fundamental reality of poor people's housing situation.

CONCLUSION

The issue of people having access to low-quality housing involves the question of control over how to best spend a limited income. And yet, while poor housing conditions have long been associated with producing health problems, the brain damage caused by lead ingestion is arguably of such a serious nature that it rules against allowing people to live in these conditions. The argument that preventing parents from exposing their children to a potential toxin appropriately falls under the state's child welfare laws ignores the fact that living on the street or in a shelter presents a multitude of serious health problems of a different sort to the entire family. As a result, the inadequate nature of the current level of investment in low-income housing leaves society with an untenable trade-off: making people homeless or allowing them to be mentally impaired for life.

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CHAPTER 4: THE POLITICS OF FRAMING

We are, I am, you are
by cowardice or courage
the one who find our way
back to this scene
carrying a knife, a camera
a book of myths
in which
our names do not appear.\textsuperscript{73}

MISPLACED RESPONSIBILITY

In 1950s and 60s formidable data began to be published which revealed that children living in deteriorated inner-city housing had a high incidence of lead poisoning.\textsuperscript{74} An average of 20 - 40 percent of the high risk children screened were shown to have blood lead levels of 40 ug/dl or greater. The prevailing medical understanding of the disease tied the ingestion of sweet tasting lead paint chips to children's elevated blood lead levels. In the late 1960s, the federal government for the first time, under the Public Health Service Act and the Social Security Act, provided funds for screening and treatment of lead poisoning. This nascent screening process publicized the issue, while enabling parents and health professionals to begin to get a sense of the magnitude of the problem.

Found to disproportionately impact low-income and minority children, childhood lead poisoning emerged into the policy arena labelled as a "ghetto" disease.\textsuperscript{75} Lead constituted an ubiquitous contaminant throughout the nation's housing stock and the environment, but was perceived to impact middle-class white children at a negligible rate. This fact focused attention on causation factors specific to low-income, and in particular,

minority communities. Despite the fact the American Academy of Pediatrics advocated for addressing the role of sub-standard housing in lead poisoning, parents emerged as the responsible agents. Poor housekeeping habits providing children with access to peeled paint, nutrition levels inadequate to discourage the ingestion of unhealthy substances, and lack of attention paid to children's activities were viewed as the deleterious parental actions at the root of the problem. The infeasibility of parents living in slum housing to maintain a safe environment for their children was thus deemed inconsequential. Policy makers, predisposed to blaming the poor and minority populations for their own problems, thus cast prevention as within the control of parents.

Health professionals and policy makers concluded from the racial disparity in the disease's impact and the medical emphasis on pica that the urban African-American poor had a much higher incidence of parental negligence than the general population. This analysis of the factors causing the disease not only ignored environmental sources, but also overestimated the extent to which behavioral changes can prevent lead poisoning. For example, the effectiveness of activities such as cleaning and washing children's hands to reduce exposure to lead depends on the rate of recontamination within the house. Moreover, adequate nutrition often falls outside the economic reach of inner-city families. Although the medical community now recognizes lead dust ingested through young children's normal hand-to-mouth activity as the main culprit of childhood lead poisoning, the initial misframing of the issue continues to underlie much of the policy debate surrounding childhood lead poisoning, as well as the subsequent misdirection and inadequate allocation of resources.

Categorized as a problem not only correlated with class, but also with race, the increasing recognition of lead poisoning coincided with emergence of the national debate over African-American urban poverty as an intractable phenomena. Reports such as Daniel P. Moynihan's, "The Negro Family: The Case for National Action," called attention to the impact of the erosion of the urban family system on the multitude of problems occurring in urban areas. The increase in the number of single-parent families, the explosion in the crime rate, and the high unemployment rate fostered a sense that deviant behavior was the norm rather than the exception among the urban African-American poor. In particular, single mothers were viewed as raising their children under conditions of incredible hardship, and, for the most part, incapable of adequately caring for them.

Focusing on the parents of lead poisoned children as the responsible agents of the disease easily fit with a policy framework constructed around locating the cause of social problems in a disintegrating family structure. The emphasis on individual actions, to the exclusion of an analysis of the impact of social inequalities, effectively cast a family's willingness to change their own behavior as the major determinant of their children's ability to escape the fate of lead poisoning. It was in this context that lead poisoning was simply added to the litany of horrors that inner-city minority children were supposedly subjected to as a result of their lack of middle-class family values and distressed economic circumstances.

This framing of the problem clouded the understanding of the issue and prevented the formulation of effective policy. Defining neglectful parenting as the root cause of lead poisoning effectively absolved the federal government from addressing the deteriorated condition of the housing within which poor people resided, as well as the larger issue of the lack of safe and sanitary affordable housing. Attention thus focused not on eradicating the disease

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itself, but on addressing the more omnipresent problem of "social dysfunction" through anti-poverty programs.

DEVALUATION OF THE POOR

The lower value assigned to the intellectual prowess of poor and minority children also contributed to the lack of importance assigned to the widespread incidence of lead poisoning induced brain damage among this population. As the primary institution charged with socializing, educating and preparing children to be productive adults, schools reflect the discrepancy in societal attitudes toward the value of and capacity of the minds of different ethnic or racial groups of children. For example, our system of funding schools primarily from property taxes consigns low-income children to coping with underfunded schools which have dramatically fewer programs and extracurricular activities than their wealthier counterparts. In addition, racial politics in many cities resulted in a marked discrepancy within communities in resources provided to predominantly African-American and white schools.

People have sought to frame the factors influencing the lower expectations for poor and minority children in terms ranging from racism and classism to a belief that environmental factors such as poverty, poor health care, and drug abuse disadvantage whole groups of children from the outset. In Jonathan Kozol's research on the Boston Public School system in 1967, he documented dramatically lower achievement expectations among teachers for minority students, disrespect for cultural differences, and the tracking of these students into low wage, dead end jobs.²⁹ Twenty-five years later, Andrew Hacker, a professor of political science at Queens College, offers a similar indictment of schools, contending that the "abilities and aspirations of black children often remain unrecognized, if not discouraged or destroyed."³⁰

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Viewing cultural deprivation as the more relevant issue in these communities, in the late 1960s, a Boston School Superintendent stated, 
A victim of his[sic] environment, the ghetto child begins his school career, psychologically, socially, and physically disadvantaged. He[sic] is oriented to the present rather than the future, to immediate needs rather than delayed gratification, to the concrete rather than the abstract. He[sic] is often handicapped by limited verbal skills, low self-esteem, and a stunted drive toward achievement.\(^{81}\)

In support of this environmental causation argument, Alan Wolfe, a professor of sociology and political science at the New School for Social Research, has described African-American urban poverty as creating "social conditions that are wildly at odds with the promise of a humane and secure social order."\(^{82}\) Regardless of whether one believes that the school system is biased to regard poor and minority children as intellectually inferior, or believe that these children are ill-prepared for school due to social and economic reasons, the end result is that the minds of inner-city children are often approached by schools as less capable than suburban white children's.

The above outlined conceptualization of inner-city children as having lower achievement potential directly factors into the cost/benefit equation for determining priorities for policy development and expenditure of resources. The 4-6 point drop in the mean IQ score associated with lead impacted children amounts to a relatively small amount of money when measured in terms of inner-city children's lost future earning potential. The tragedy of losing a child presumed to cost society more than they will contribute is not quantified by federal policy makers as a significant loss.

CONCLUSION

The high rate of lead poisoning induced brain damage among low-income children failed to appear on the policy agenda as a crisis worthy of an immediate and sustained response. Instead, racism, devaluation of the poor and an emphasis on the disintegrating ghetto social structure effectively perpetuated an ideology of blaming the victim, thus limiting the amount of effort deemed legitimate to expend for eradication of the disease. The appeals for attention to the issue of lead poisoning focus on the fact that the financial burden to society for special education programs, crime, etc., will be reduced. These arguments carry more weight than a humanistic appeal to the right of every child to maximize their own potential.
CHAPTER 5: FEDERAL AND STATE RESPONSE

FEDERAL POLICY

The Lead-Based Paint Poisoning Prevention Act (LPPPA) enacted by Congress in 1971 focused on the following elements:

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Intent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary screening of high risk children.</td>
<td>Identification of children most likely to have elevated blood lead levels.</td>
</tr>
<tr>
<td>Ban on Pb-Paint in federal housing.</td>
<td>Prevention of new contamination.</td>
</tr>
<tr>
<td>Abatement research.</td>
<td>Clarification of best abatement methods.</td>
</tr>
</tbody>
</table>

One of the major elements of the Act was the establishment of a grant program to local governments to assist communities in establishing screening and case management programs for children at high risk of lead poisoning. The emphasis on voluntary screening promoted the identification of children with undue lead absorption only after they had been negatively impacted by lead. In addition, the small amount of grant money provided and the voluntary nature of the initiative resulted in most states developing programs capable of reacting only to the most severe cases of lead poisoning. Although screening rates increased to approximately 2.7 percent of all children under 6 years in the United States in 1979, from a low of 0.7 percent in 1972, this represented only 30 percent of the children estimated to be highly exposed to lead.83 The inadequate attention given to even this secondary preventative effort is illustrated by the fact that California, usually one of the most progressive states on health issues, only agreed to screen children covered under Medicaid, after losing a lawsuit in 1991. The state of Vermont currently faces a similar suit on behalf of Medicaid children.

83 O'Hara, p. 91, 1982.
While screening programs can identify children with elevated blood lead levels, but who are not yet poisoned, no funds or statutory mandate was provided to address the environmental sources so as to prevent these children from experiencing a further increase in lead absorption. Dr. John Graef, of Children's Hospital in Boston, refers to this approach as using children as environmental indicators of lead hazards. Hence, the federal government ignored the most effective primary prevention effort, developing a systematic approach to detection and abatement of lead. The government's focus on the individual child adversely impacted by lead contrasted sharply with William Ryan's characterization of lead poisoning as "one of the most tragic by-products of the systematic tolerance of slum housing."\(^8^4\)

The 1971 LPPA law also prohibited the use of lead-based paint in residential structures constructed or rehabilitated by the federal government or with federal assistance. Nevertheless, the Act allowed the continued use of lead-based paint in regular residential housing. In this way, the federal government allowed new applications of a known toxin to continue, thereby downplaying the role of paint in lead poisoning. It wasn't until 1978 that the Consumer Product Safety Commission acted to limit the lead content in paint to 0.06 percent by weight.

Lastly, the LPPA required the Secretary of Housing to submit a report on methods for abating lead hazards. Although ample evidence supported the need to address the role of housing in addition to the health aspects, HUD delayed action throughout the 1970s and 1980s on the issue. Placing primary emphasis on cost considerations, HUD produced regulations defining lead abatement as removal of defective paint, while allowing intact lead-based paint to remain on surfaces accessible to young children. In 1982, HUD was sued by children lead poisoned in units in compliance with the intact paint standard.\(^8^5\) As a result a federal appeals court ordered

\(^8^4\)Ryan, p. 24, 1976.
HUD to more broadly define "immediate hazard" and publish rules for the detection and elimination of lead-based paint.

Even after the U.S. General Accounting Office in 1980 criticized HUD's inaction, the government allowed HUD to ignore its statutory requirement to research abatement methods until the late 1980s. It wasn't until the 1987 amendments to the LPPPA that Congress included language to force HUD to release a comprehensive and workable plan for abatement of private housing. By prohibiting HUD commitments or expenditures for any other policy development and research during the period in which the report was overdue, Congress persuaded HUD to fulfill their statutory commitments.

Removal of the lead hazards from children's environments thus received scant attention, except in those few states which pioneered their own more stringent regulations.

HUD abdicated their role as a policy leader on the lead issue through an unwillingness to fulfill their statutory lead paint responsibilities and through a lack of pro-active policy initiatives. If HUD had taken a leadership role on lead in the 1970s, not only would a number of lead poisoning cases have been prevented, but also lead poisoning prevention policies would have been shaped more around housing parameters. Environmentalists and public health advocates stepped in to fill the gap left by HUD on both the federal and state level of government. As a result, policy origination and implementation is driven from the top down with environmental and public health issues at the forefront of concern, while property owners feel the burden at the local level.

MASSACHUSETTS LEAD LAW

Massachusetts leads the nation in terms of comprehensive legislative efforts designed to alleviate the problems of lead poisoning. As of 1991, only 16 states operated statewide blood lead screening programs and only nine states required medical follow-up

of poisoned children, education, and abatement of lead hazards. Legislative efforts have resulted in considerable gains in increasing the percentage of children under six years old screened and providing medical care to those identified as lead poisoned. However, they have failed to engage in primary preventative efforts as well as ensure lead contaminated dwellings are delead in a timely manner.

The Massachusetts lead law frames the issue of childhood lead poisoning within an individualistic environmental framework which targets individual housing units rather than neighborhoods. While the law does not require a child to be poisoned before environmental remediation occurs, it nonetheless focuses primarily on the health of an affected child. Lead is thus viewed as a toxin that can potentially compromise the health of any child residing in a contaminated environment. This framework is more appropriately oriented toward a middle-class child whose poisoning primarily results from their parent's decision to disturb lead-based paint. In contrast, the problems associated with a low-income child, whose poisoning results from their residence in lead-contaminated sub-standard housing, needs to also be addressed within a housing and community development framework. This more comprehensive context of the community requires a joining of environmentally sound restitution with the economic, social and political realities of people living in inner-cities.

Early Legislation

In 1971, Massachusetts passed legislation which provided a much more comprehensive approach to the lead poisoning problem than the federal government's law. This law sought to push property owners to removed lead hazards from their units through emphasizing the following elements:

In addition to establishing a statewide program for the screening and treatment of lead poisoning, the law required the inspection and deleading of any residence where a child under six resided or would reside, or had been poisoned. The law also expanded the Massachusetts sanitary code to include lead paint in residences housing children under six years old. Responsibility for overseeing implementation of this provision and enforcement powers were vested in local boards of health or other code enforcement agencies.

Defining the deleading requirement as a component of the state sanitary code was intended to create a potentially powerful preventative section of the law due to the large number of housing inspections code enforcement agencies perform each year in deteriorated housing. When a code enforcement officer responds to a no heat or rodent complaint, the state sanitary code requires the inspector to check the apartment for other possible code violations. The officer files a court order against anyone who fails to address the problems identified. Inspections of properties with inadequate maintenance practices provide an opportunity to test proactively the portion of the housing stock in which the lead presents a heightened hazard to young children.

Until recently, code enforcement agencies routinely ignored this provision. This failure to incorporate lead testing into

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88 In July 1991, the Massachusetts Department of Public Health revised its guidelines, allowing code enforcement agencies to conduct lead determinations using a detection test of sodium sulfide rather than full inspections. If the inspector finds lead anywhere in the unit, she/he then issues a citation to the property owner requiring
sanitary code inspections stemmed to a large extent from a lack of resources on the local level. The time consuming nature of lead inspections, which average of 1 - 2 hours for a six room apartment, and the $1000 - $2000 cost of the x-ray fluorescence machine necessary to perform the inspection prohibited many localities from complying. This possibly also reflected a conscious effort on the part of cities not to displace tenants and force low-income homeowners to lose their homes. Some city governments might choose to enforce codes less stringently in certain areas in light of the fragility of investment and lack of housing alternatives.89

1988 Amendments

Every year from 1972 to 1985 realtors have filed legislation to repeal the 1971 law and children's advocates have attempted to strengthen the law. In 1984, the Legislature's Committee on Health Care, which convened the hearings to review this legislation, gained a concerned member of the legislature who wanted to do more than annually recommending continuation of the status quo. Rep. John McDonough used the 1985 hearings as an opportunity to study the issue of childhood lead poisoning further. The result was the establishment of a special legislative commission to recommend improvements to the lead law. Stephanie Pollack, of the Conservation Law Foundation, based her writing of the 1987 legislation on the commission's recommendations.90

The legislation passed the House unanimously after a few changes by the Mass. Association of Realtors and Mass. Rental Property Owners. However, a controversy arose in the Senate Ways and Means over the cost imposed on the private sector for deleading. In response, a grant/loan program for abatement was established to be administered by EOCD. Although Governor Dukakis balked at the them to pay for a comprehensive lead test by a private certified lead inspector. In this way the city can initiate a large number of inspections in high risk housing without having to incur the associated costs.

89Peattie, 1992.
cost of the law, Lt. Governor Evelyn Murphy signed the legislation in January 1988, while Dukakis was campaigning for President.

<table>
<thead>
<tr>
<th>Legislation Implemented</th>
<th>Intent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Screening.</td>
<td>Identification of all children with elevated blood lead levels.</td>
</tr>
<tr>
<td>Certification and licensing of inspectors and deleaders. Anti-discrimination clause.</td>
<td>Avoidance of abatement jobs which increase lead hazards. Prevention of owners refusing to rent to families which make them subject to deleading requirements.</td>
</tr>
<tr>
<td>$1,000 tax credit.</td>
<td>Reduction in the financial burden of abatement.</td>
</tr>
<tr>
<td>Information on lead to new homebuyers.</td>
<td>Promotion of abatement during real estate transfers.</td>
</tr>
</tbody>
</table>

The 1988 law recognized lead paint as a major priority for removal and sought to hasten the process through the establishment of a tax credit of $1,000 per housing unit deleading. The law also mandated universal screening, certification and licensing of inspectors and deleading contractors, and the provision of information regarding the requirements of the lead law to all new homebuyers, and included an anti-discrimination clause prohibiting property owners from denying housing to families with young children, or evicting a tenant due to the discovery of lead in the premises. In addition, the law required the state lead poisoning director to designate Emergency Lead Poisoning Areas. These areas would be targeted for extra inspection and deleading, regarding housing with children under six years old, interior of certain schools, exterior of buildings built before 1978 and soil in yards and playgrounds. Deleading would be required whenever an apartment in this area became vacant, enforceable by the code enforcement agency or local board of health.

91ELPAs were defined as neighborhoods with a high-incidence of childhood lead poisoning.
Ninety-five percent of the deadlines set out in the legislation were met, including expansion of screening programs and establishment of a case management system by the Department of Public Health, and training and licensing of inspectors and deleaders by the Department of Labor. However, the Executive Office of Communities and Development never established a critical provision of the law, the grant/loan program to assist property owners and tenants in paying for deleading efforts. Many attribute the failure of EOCD to set up this program to the agency's lack of involvement in drafting the legislation, as well as a disinterest on the part of the agency in making lead poisoning a priority. The lack of political pressure from property owners for the funding program stemmed to a large extent from lax enforcement of deleading requirements on the part of code enforcement agencies, as well as on the part of tenants either unaware of their rights or afraid to exercise them. Overall, property owners hoped that the 1988 law would be overlooked in the same way as the 1971 law.92

In addition, while a few ELPAs received designation as priority areas, the program was never implemented. The DPH Poisoning Prevention Program has consistently lacked the resources necessary to conduct an education campaign, let alone adopt a more comprehensive preventative approach to lead poisoning. Targeting the areas with the highest lead poisoning rates for extensive testing and monitoring of vacancy deleading constitutes a very resource intensive project. Although the 1971 law required the state to inspect a dwelling upon request, to this day resources are available only for inspection of homes where kids have been poisoned. The need for a targeted testing and abatement program, given the small number of areas responsible for the majority of the poisoning cases, has not been matched by a commitment of the required funds from the state legislature or the Governor's Office. Nonetheless, such a program is premature without the means in place to finance abatement in those situations where the property owner lacks the necessary resources.

92Stephanie Pollack, Interview, April, 1991.
ABATEMENT OF LEAD HAZARDS UNDER MASSACHUSETTS LAW

The goal of reducing the risk of childhood lead poisoning forms the central goal for lead policy. While identification and medical treatment constitute a critical part of a comprehensive program, the major dilemma in development of lead poisoning prevention policy revolves around the removal of the source of the hazard. Surfaces required to be abated, the extent of the structural work required to ensure paint doesn't continue to deteriorate, and the associated procedures for abatement, as well as policies governing disposal of lead debris all impact on tradeoffs between cost and the safety of both children and abatement workers. The onerous, expensive, and often confusing nature of the abatement process produces a major stumbling block to efforts to protect children's health.

The extent and condition of the lead paint in the interior and on the exterior of the house constitutes the major cost variable in an abatement project. Of the 57 million units nationally estimated to have lead-based paint, approximately 18 million have exterior lead-based paint only; 11 million have interior lead-based paint only; and 28 million have lead-based paint on both the exterior and interior of the house. Under the Massachusetts law, paint inaccessible to young children is not required to be removed, but all lead paint must be made intact. Therefore, even if no lead exists in the interior of the house, property owners could find themselves faced with having to have all peeling paint on their house scraped and repainted by a licensed deleader in order to achieve compliance.

Massachusetts faces a more limited problem than many southern states to the extent that lead paint was used mostly on the woodwork and not on the walls, floors or ceilings. Nonetheless, unit costs of deleading in Massachusetts can range anywhere from $1,000 - $2000 a unit or the same cost per room, depending on the extent of lead in the unit and whether or not the paint is intact.

93 Brad Prenney, Director, State Lead Poisoning Prevention Program, Massachusetts Department of Public Health, Interview, July 1991.
Abatement of a triple decker can cost between $10,000 - $30,000. The Massachusetts Department of Revenue calculates that abatement for a five or six room unit averaged $3,450 in 1991. This figure is based on tax returns claiming the $1,000 tax credit available. The fact that only the more financially viable property owners have a tax liability suggests that these tax returns reflect people with an ability to maintain their housing. Owners without a tax liability are less likely to have the financial wherewithal to maintain their property and probably face a larger abatement bill due to the existence of more deteriorated conditions in their units. Overall, the current recession and the increased competitiveness of the abatement industry have combined to lower abatement costs.

**TABLE 5-1**

**ESTIMATED COSTS TO OWNER FOR ABATEMENT**

<table>
<thead>
<tr>
<th>Task</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection</td>
<td></td>
</tr>
<tr>
<td>Six room apartment</td>
<td>$ 150</td>
</tr>
<tr>
<td>Triple-decker</td>
<td>$ 375</td>
</tr>
<tr>
<td>Abatement</td>
<td>$ 3,450 per unit (avg.)</td>
</tr>
<tr>
<td>Reinspection</td>
<td>$ 75</td>
</tr>
<tr>
<td>Dust Wipes</td>
<td>$60-90</td>
</tr>
<tr>
<td>Relocation of Tenants</td>
<td>dependent on negotiations with tenants and alternative options.</td>
</tr>
<tr>
<td>Lost Rent (if vacant)</td>
<td>$500-900 per month.</td>
</tr>
</tbody>
</table>

(Source: Massachusetts Department of Revenue)

EPA and HUD are currently conducting research to determine if in-place management through clean-up measures can adequately protect children living in highly contaminated environments. Removal of lead from a house with high lead dust levels requires either a special high energy particulate accumulator (HEPA) vacuum and/or a thorough mopping with tri-sodium phosphate wash. HUD
found the lead dust abatement protocol they tested to cost $3,380 to $7,032 at the end of 12 months.94

Abatement of lead-contaminated soil and replacement of lead water pipes is not yet routinely required under Massachusetts law. Although the 1988 amendments required the Department of Environmental Protection (DEP) to set standards for lead in soil and water at the tap, they have yet to promulgate regulations. Costs for soil abatement will vary greatly depending on whether property owners will be allowed to treat the soil in place by either rototilling it, or containing it e.g. planting grass or putting down bark mulch or gravel. In contrast, if removal is required, owners could face costs close to those involved in the EPA soil study. Removal of contaminated residential soil, installation of a layer of geotextile material, and replacement with clean fill approached $7000.95 EPA is currently considering setting the safe level of lead in residential soil at 500 - 1000 ppm, while the Massachusetts DEP favors a level closer to 300 ppm. These soil standards would potentially classify entire cities such as Boston as requiring remediation. Corrosion control and other such treatments at the drinking water source will hopefully obviate the need for homeowners to undertake the costly replacement of interior lead pipes.

Procedures For Abatement

Essentially the law requires lead abatement of all mouthable surfaces below a height of five feet which stick out more than one-half inch, and the removal or covering of all peeling paint, plaster or other material, on both interior and exterior surfaces and fixtures, when a child under the age of six resides in the unit or home. Under

94The dust abatement protocol included an initial sampling and testing, initial cleanup, clearance sampling and testing, iterative cleanup if needed, 6-month sampling and testing, 6-month cleanup, 12-month sampling and testing and 12-month cleanup. U.S. Department of Housing and Urban Development, Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing, Report to Congress, p. 4-18, Office of Policy Development and Research, Washington D.C., December 1990.
95Weitzman et. al., 1992.
the guidelines, the surfaces required to be addressed include window sills, windows, door frames, doors, and stair rails, porch railings and all other interior and exterior surfaces or fixtures that may be readily chewed by children.

The abatement method selected, whether replacement of an element, removal of the paint, or encapsulation i.e. enclosure of a surface with wood, aluminum or sheet rock, and amount of disposal debris generated form a large component of the project cost. Replacement of windows usually constitutes the largest single cost, accounting for 30 - 50 percent of the total project price. Another factor which directly impacts the price is the skill level of the abatement workers. A number of the aspects of an abatement job require carpentry skills. (Many homeowners don't realize that they often get what they pay for in terms of quality of the work done and safety of procedures.)

The Massachusetts lead law makes it illegal for a conscientious homeowner to attempt to prevent a hazardous lead paint situation by maintaining their property in good shape, and to work in partnership with a tenant who regularly wipes out window sills and wet mops the house. This stems in part from the fact that parent-administered interim clean-up measures have yet to be proven effective in reducing lead dust to non-hazardous levels. Another reason is the possibility of a child residing in such housing who has a habit of mouthing lead contaminated window sills or door frames. Also, the potential for intact paint to deteriorate, especially on impact and friction surfaces, and pose a significant health hazard renders removal or encapsulation of the paint the most effective preventative policy.

A great deal of controversy still exists as to the extent of removal or containment required to provide a safe environment for children. In contrast to Massachusetts, Connecticut has adopted what they call a "lead safe" approach. This approach requires the property owner to abate surfaces with defective lead-based paint. Lead contaminated windows are not required to be abated except in
response to the poisoning of a child on the premises. The law allows lead-based paint to remain on surfaces accessible to children as long as it is intact. The high cost of abatement under the Massachusetts law has been influential in encouraging the states to adopt a less comprehensive approach.

The Massachusetts requirement to abate all surfaces accessible to young children is predicated upon the assumption that these surfaces constitute immediate hazards to children. Potential hazards such as lead paint on flat surfaces are allowed to remain in place as long as they are intact. Many people question the 5' height requirement for abatement because paint higher than this level can always deteriorate and contaminate the home with lead dust. As opposed to leaving multiple layers of paint on some portions of the woodwork and scraping other areas down to bare wood, many contractors chose to remove paint to the top for aesthetic reasons.

Controversy also exists as to the best methods for abatement. Traditional methods leave paint on surfaces presumably out of reach of young children, involve minimal worker protection and require only the sweeping up of construction debris for clean-up. These methods cost an average of 75 - 80% less than more stringent methods, which require worker suits and respirators, close monitoring of worker blood lead levels, sealing off furniture and rooms to be deleded, clean-up using HEPA vacuums and tri-sodium phosphate wash, 24 hour post-abatement dust settlement before certification that dust levels are acceptable for habitability by young children. In Massachusetts, contractors are required to follow the more stringent methods requiring strict containment of the abatement site and worker protection measures. Contractors vary as to whether they favor stripping paint by chemical methods, dry scraping using a negative air system, wet scraping, off-site dipping to remove paint or replacement of the element.

The main difference as far as the children are concerned between the abatement methods rests with the residual household dust levels. The recognition that protection of children's health

necessitated more expensive methods of abatement grew out of some parent's never-ending nightmare of lead poisoning. In 1985, 40% of lead-poisoned children in Baltimore had at least one recurrence of blood lead levels over 49 ug/dl within three months of being sent home from the hospital, when their apartments were de-leaded using traditional methods. A history of poorly performed abatement jobs which left homes contaminated with high levels of lead dust formed the basis for the push for certified abatement contractors in many states. In these situations homeowners invested money with the assumption that the health threat would be removed, only to find the problem often worse than previously existed.

As the Massachusetts law currently stands dust clearance tests are voluntary, instead of mandatory. Consequently, it is up to the property owner to educate themselves as to proper abatement procedures and require dust tests as part of the contract. The dust clause inserted in the contract is usually structured to require the contractor to re-clean and retest the apartment at their expense if they fail the first round of dust tests. While the most efficient contractors pass the first reinspection and dust tests, many contractors find themselves re-cleaning an apartment three or four times.

The voluntary nature of dust tests in part rests on a lack of scientific evidence as to the direct correlation between specific dust levels and children's blood lead levels. The existence of complicating factors such as nutrition levels and degree of hand-to-mouth activity, as well as other sources of contamination renders development of a clear cut set of numbers unlikely. Regulators also hesitate to promote dust levels more stringent than necessary to protect health, thereby burdening contractors with superfluous additional clean-ups and increased costs. Nonetheless, residual high dust can produce an environmental contamination problem more egregious than that initially sought to be corrected. The fact that

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some contractors succeed in passing the dust standards in their current form speaks to their viability as regulations.

The major expense of the more stringent methods revolves around worker protection. Before Massachusetts required licensing and certification of abatement contractors, the work was commonly performed by people wearing only dust masks as they dry scraped the woodwork. Very few abatement workers were aware that they needed to have their blood lead constantly monitored, and to remove themselves from a job if their lead level rose too high. In addition, the impact of occupational lead dust on worker's children only arose as an issue in the deleading industry in the late 1980s. Prior to this workers would wash their contaminated work clothes in with their children's. The inability of a regular washing machine to remove all the lead dust resulted in the children's clothes also becoming contaminated with lead.

While it has been proven by many reputable studies that dust, not paint chips, is the main pathway of poisoning, states have been slow to regulate the testing and deleading industry and establish stringent abatement guidelines. One of the major arguments against such regulation revolves around the large increase in abatement costs. In contrast, the U.S. Department of Housing and Urban Development has argued against the ability of the federal government to follow suit due to the dearth of industry capacity to perform testing and abatement work. The EPA recently provided grants to establish five university-based training centers which will offer a standardized curriculum located around the country for lead inspectors and abatement contractors. After laying the groundwork for the establishment of this infrastructure, the next critical step consists of an educational campaign to create a demand for these more expensive, yet safer lead services.

Massachusetts' experience with phasing in licensing and certification requirements underscores the fallacy of HUD's objections. The remarkable growth of the testing and deleading industry to approximately 700 abatement contractors following the passage of the 1987 Massachusetts law highlights the important role of government in stimulating the private market. Government
also bears the critical responsibility though of ensuring adherence to safe practices and abatement guidelines through its enforcement powers. Problems with contractors violating the state’s abatement guidelines abound due to the inability of the Department of Labor and Industry's five inspectors to monitor the growing number of abatement jobs. The state is currently working on ways to limit illegal activity such as contractors paying a fee to inspectors for every job sent their way, and pulling the licenses of contractors who refuse to follow DLI abatement guidelines.

**Encapsulation: Promise or Hype**

Liquid encapsulants, known generically as elastomeric polymers, are posited by many people as the solution to the abatement quandary due to their simplified system which leaves paint in place but prevents lead dust from escaping. The main concern over these products rests with questions of their durability and toxicity. Most of these products currently on the market come with a fifteen year warranty and contain potential carcinogens such as styrene and toluene.

Preliminary results from the University of Lowell research project and EPA encapsulant research show the hope that encapsulants will dramatically reduce costs of compliance with lead guidelines to be misplaced. None of the products have proven tough enough to not deteriorate when used on impact surfaces or windows surfaces which abrade. The state of Maryland has allowed the use of encapsulation products on flat surfaces only e.g. walls and ceilings on a case-by-case approval basis.98 The inappropriate nature of encapsulants for use on windows, given the fact that window replacement often comprises 50 percent of the cost of an abatement job, renders the expected cost reduction to amount to only 10 - 20 percent.

The Massachusetts DPH recently received an EPA grant to research what constitutes adequate preparation of subsurfaces in.

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98 Maryland Department of the Environment, Toxics Operations Program, Lead Poisoning Prevention Division, Baltimore, Maryland.
order to ensure durability of the encapsulants. The Massachusetts DPH and American Society for Testing and Materials (ASTM) anticipates a two year process for developing criteria for approving encapsulating products. Brad Prenney, Director of the DPH Lead Poisoning Prevention Program, summed up the hope for encapsulants, "The ideal coating lasts the life of the building and when the building falls down, the product biodegrades."^{99}

Consensus remains that the best solution is to remove the lead contamination once and for all. Widespread use of products with a fifteen year lifespan only delays the problem of lead abatement. If these products cost only a fraction of a full abatement job, they would constitute the ideal interim solution. However, their cost reduction of only 10 - 20 percent serves to greatly increase the ultimate costs for lead removal. The immediate need to protect children's health dictates the need for further research on less expensive interim procedures which reduce levels of lead dust. Whether liquid encapsulants and/or period cleaning or some other method emerges as the favored approach, action needs to be taken to mitigate health hazards to young children prior to securing the billions of dollars required for abatement.

**Disposal of Lead Debris**

Disposal policy emerges as a major environmental issue both in terms of human health through the impact on cost of abatement projects as well as ecologically through illegal dumping of debris. A contractor in Boston quoted his cost for disposal of 30 cubic yards of waste in a regular landfill as $600. This cost jumped at least 2-fold to $1200 - $1500 for disposal in a hazardous waste landfill. This significant increase in the cost further drives the price of abating health hazards out of the reach of cash strapped property owners, thereby reducing the number of housing units addressed.

In an attempt to clarify which types of abatement debris (doors, windows, plastic) usually fail the hazardous waste test,^{100}

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{100}TCLP or Toxicity Characteristic Leaching Procedure.
EPA conducted research in partnership with HUD's abatement demonstration projects. The research report will allow contractors to determine the best method for disposal of various components of the waste stream without having to undertake costly testing procedures. The delay by the Office of Management and Budget of over a year in releasing EPA's report contributes to contractor and state confusion. The continued expansion of the deleading industry in response to litigation, education, as well as the lowering of the CDC recommendations on safe blood lead levels points to a clear need for additional guidance.
CHAPTER 6: IMPACT OF THE MASSACHUSETTS LEAD LAW ON LOW-INCOME COMMUNITIES: THE PARADOXES

LIMITS OF THE LAW

Implementation of the Massachusetts lead law occurred prior to the establishment of the infrastructure necessary to ensure that deleading and primary prevention could be conducted in a manner supportive of the community and attentive to the housing and finance needs of low-income people. The large number of apartments in deteriorated condition translates into the need for a large scale, resource intensive abatement project. The redlining of these communities by financial institutions, in conjunction with factors such as the poor credit history of many low-income people, and the existence of some property owners only willing or able to provide affordable housing if they don't have to maintain it, reveals the limits of the lead law in these communities. In addition, the lead law works counter to the goal of home-ownership, the traditional benchmark of community stability, by imposing high costs on owners with the mandate to delead the housing stock as quickly as possible. The lead law also fosters the establishment of institutional barriers which constrain the ability of people with limited financial resources to purchase a home in their neighborhood. The inability of some owners and unwillingness of others to comply with requirements to delead ensures the continual lead poisoning of subsequent generations of children. This chapter will explore some of the paradoxes, assumptions and counterproductive aspects of the law and the associated community impacts at the implementation level.

Misconstrued Assumptions

The allowance included in the Massachusetts lead law of only a $1000 tax credit for each housing unit deleded reflects an assumption that lead abatement is a financially viable alternative for most property owners. The structure of a tax credit also assumes that owners have a tax liability which would allow them to benefit from the credit. This assumption in part comes from the
over inflated real estate values during the late 1980s when the amendments were debated. Since everyone's equity in their home increased as the market rose, the argument was that property owners should have been able to borrow against their homes to delead, if they did not have the cash on hand. Low-income people often have poor credit ratings or cannot sustain any additional debt, and therefore cannot acquire traditional bank loans. The lack of attention to the ability of property owners to finance such a large project reflects another assumption that only a negligible percentage of low and moderate-income people own rental property.

The assumption that wealthy absentee landlords own the majority of inner-city housing is commonly heard during childhood lead poisoning prevention conferences and policy debates.\textsuperscript{101} Lynn Boulay of the Rhode Island Childhood Lead Poisoning Prevention Program indicates that most of their cases in low-income communities arise from either owner-occupied housing or in housing where the owner resides in the same community. A housing advocate at the Jamaica Plain office of Legal Services reported that the majority of the owners of what she considered slum housing lived within the Boston area, while a few lived in Cambridge.\textsuperscript{102} The 1990 census data for Boston reveals that almost 50 percent of two-family houses in Roxbury, Dorchester, and Mattapan are owner-occupied.\textsuperscript{103} This figure drops to around 25 percent for 3-4 unit structures. While the percentage of absentee owners with more than one to two buildings is unavailable, interviews with housing activists, bankers, and community residents combat the notion that wealthy landlords living in suburbia are getting rich off poor people's need for housing.


\textsuperscript{102}Housing Intake Counselor, Interview, Legal Services, Jamaica Plain office, April 1992.

\textsuperscript{103}1990 Census of Population and Housing, Summary Tape File 1, Boston Redevelopment Authority.
The large absentee landlords who are characterized as the "deep pockets" able to delead their large numbers of units often shelter their holdings so that they do not lose more than one of their building in the event of a suit. On the other hand, some large landlords abate their properties to avoid the hassle of multiple suits. In Lawrence, a few well publicized lawsuits settled on the behalf of lead poisoned children persuaded a number of the large landlords to abate the lead hazards in their units. In contrast, some of the owners burdened financially by the lead law are those who have a debt to earnings ratio too high, or the value to equity ratio on their property has dropped too low to meet the bank's their loan criteria. After the savings and loan collapse, federal regulators have tightened their restrictions on banks to the point where they can't relax their standards too much even if they want to.104

Rising Operational Costs

Many property owners in the Greater Boston area also face financial hardship from the increase in operational costs in conjunction with a drop in rents and a current vacancy rate of 9.5 percent. In addition to the recent increase in property tax rates, the MWRA advisory board indicates that water rates are expected to double within the next three years, on top of rising 420 percent since the agency was created in 1985. The estimated cost of water for a family of four will rise to over $1000 by 1995.105 Consequently, the owner of a triple-decker, prevented by the current law from separately assessing tenants for water consumption, will see their water bill approach a few thousand dollars.

The heavy burden posed by increasing water rates on the property owner mirrors the lead issue in terms of the need for the owner to pay a large bill in order to render their apartments safe for occupancy. Unlike abatement of lead paint, though, control for limiting the price of the ultimate bill rests with both the owner, e.g.

104 Kevin Kiley, Massachusetts Bankers Association, Massachusetts Attorney General's Lead Task Force, March 12, 1992 meeting.
investment in water saving devices such as low flow toilets, and with the tenant, e.g. changing water consumption patterns. These steps also exemplify the availability of low-cost alternatives for addressing the problem. In contrast, the mere presence of lead paint on surfaces accessible to children guarantees property owners a large abatement bill.

Who Should Pay?

The emphasis on parental neglect as the primary factor responsible for lead poisoning among low-income children shifted under state policy from parents to property owners, as they are now posited as the negligent party. Current state laws regarding lead abatement place the burden of payment on the homeowner who at no time knowingly rendered their property unsafe for young children through the application of the lead-based paint. In contrast, the gasoline and paint industry knowingly endangered the public by marketing products documented as hazardous. In addition, the federal government sanctioned the use of these products, taking advantage of a public unfamiliar with the hazards.

Many critics of the debate over whether the property owner should be responsible for the funding of lead abatement reason that when any other element in the house is deemed a health hazard, then the property owner accepts responsibility for correcting the problem. The critical difference for a property owner between replacing a leaky roof or fixing a broken oil burner and lead abatement rests with issues of standard maintenance. Property owners anticipate life-cycle investments in systems within the house, whether it be the plumbing, electrical, heating, etc. Adherence to proper maintenance practices maintains the owner's investment in the house while extending the life of the property.

In contrast, lead paint abatement is not only primarily devoid of any value added to the property, but often leaves the property in worse condition aesthetically. When contractors strip multiple layers of paint up to the 5' height required by the law, the clear delineation with the paint remaining above this level visibly marks the project's scope of work. When woodwork is replaced rather than
stripped, property owners often cannot afford the same quality detail characteristic of the trim in many older homes.

Replacement of the windows, which cost an average of 30 - 50 percent of the total abatement project, constitutes the only true value added component. However, the high costs of the project often forces the owner to select the cheapest windows available. Property owners often replace windows with the goal of improving the weatherization value of their building. Instead of installing high quality replacement windows on a piecemeal basis as money becomes available, the short time line involved and requirement to have the work performed by a licensed deleader compromises the weatherization goal. As a result, the total value added to a house as the result of an abatement job can be very small.

Stephanie Pollack argues that once lead safe housing is valued as a good by society, lead abatement will enhance the value of the housing.\textsuperscript{106} The infancy of the lead abatement industry and the heavy costs associated translates into only an estimated one percent of the housing stock abated. The scarcity of these units leads people seeking either to buy or rent housing to accept lead-contaminated housing as a given. Prior to lead-safe housing becoming more highly valued in society, many barriers need to be overcome. First, a widespread public education campaign is necessary to combat deeply rooted beliefs that underestimate the severity of the health hazards created by lead, as well as a prevailing misunderstanding of the mechanisms by which children become poisoned. Second, property owners need to perceive lead abatement as a viable alternative from a financial, technical, and public policy standpoint. Many owners anticipate lead-paint eventually being de-emphasized by EPA in the same manner as residential asbestos. And third, lead abatement will have to be perceived as a general requirement for safe housing rather than as an added burden placed on inner-city properties and therefore a reason to avoid such investments.

The costs of eliminating the hazard from the widespread contamination problem created by the gasoline and paint industry is

\textsuperscript{106}Stephanie Pollack, Conversation, May 11, 1992.
staggering. Attempts are underway in four cities to force the paint industry to assume the costs for lead paint abatement. Lawyers have brought suits on behalf of Boston, New York City, the New Orleans Housing Authority, and the Philadelphia Housing Authority with the city of Philadelphia. All of the suits hinge on documentation proving that industry promoted lead despite internal studies dating back to the early twentieth century outlining the harmful effects of lead. Together lawyers for these suits have spent close to $150,000, while the paint industry has spent $10 - 15 million in defense.\textsuperscript{107} The long term nature of this strategy renders it ineffective for addressing the immediate hazards which annually cause millions of children brain damage. The complicity of both the paint and gasoline industries in promoting use of this toxic metal renders the question of equity an especially important one in light of the extremely high costs of abatement.

Dilemma of the Small Landlord

A central paradox of the lead law revolves around the tight vise the small landlord is caught in. When a child becomes lead poisoned, an owner without access to the necessary funds to delead faces the prospect of losing their home. For low-income elderly whose house often represents their only asset, this prospect is particularly devastating. As a result, the property owner's primary courses of action involve attempting to remove the family from the property and intimidate them into not filing a lawsuit, remove the lead-based paint themselves, or seek financing from non-traditional sources with usurious interest rates.

A housing activist with City Life recounted a case where an owner first attempted to address the need to delead the apartment of a poisoned tenant by threatening the tenants to leave and then trying to formally evict them.\textsuperscript{108} After the tenant contacted City Life, who helped stop the eviction proceedings, the activist and

\textsuperscript{107}Jeffrey M. Feuer, Esq., Presentation at Somerville Housing Services Lead Paint Symposium, Somerville, MA, April 14, 1992.

\textsuperscript{108}Tom Keiffer, Interview, City Life, Jamaica Plain, MA, April 1991.
tenant had to spend a good deal of effort preventing unlicensed workers hired by the owner from entering the home to delead without the proper safeguards. The activist attempted to help the owner get a loan to pay for a certified abatement contractor, but her extremely poor credit rating precluded such an option. The process ended with the owner selling her house to avoid a liability suit over her inability to delead, and consequently losing the only financial security she had. The lack of research into the number of people who lose their homes specifically due to the cost of lead abatement precludes quantification of these occurrences. However, the heavy financial burden of the lead law, the associated liability, and the plight of the low-income homeowner suggests the conclusion that this represents a strong possibility for many people.

In order to avoid these type of experiences, some homeowners attempt to remove lead-based paint by themselves or by using a regular contractor. Allowing homeowners or unlicensed contractors to disturb surfaces containing lead, while not relocating small children and not following stringent clean up procedures places young children at risk. These high risk actions grow out of an ignorance of the health hazards associated with lead dust, while driven by a panic over the high cost of lead abatement and liability. People who attempt to achieve compliance in this manner, have their property inspected, remove the lead, and then call a different inspector to certify the absence of lead on the property. John Pesce, a certified Massachusetts Master Lead Paint Inspector, contends that two illegal deleading occur for every legal one.109

Proposals have been put forth that would require submission of a lead paint inspection report as a prerequisite for obtaining a building permit. In this way, once lead paint is identified in a home, contractors would be required to follow the safety and work procedures detailed for lead paint by the Department of Labor and Industries. Such a policy has widespread implications for both the public at large in terms of cost of renovations and repairs, and for

the construction industry in terms of altering procedures and excluding contractors who cannot afford the necessary protective equipment. It would also impact on the growing popularity of volunteer groups fixing up delapidated houses as community service projects.

Another potential option for the small owner is acquiring financing from non-traditional sources at high interest rates. The poor credit rating or lack of assets which precluded a bank loan often means their homes represent their only collateral available to secure the loan. The scope of the second mortgage scandal (in Boston and other cities) and the number of people who lost their homes through an attempt to gain access to money to complete necessary repairs demonstrates the tenuous nature of home ownership in many low-income communities.

The lack of up front state or federal grants for abatement thus often forces homeowners into a precarious position. Even if an owner succeeds in borrowing the funds necessary for abatement, the current market conditions prohibit raising the rent to reflect the subsequent increase in mortgage or debt payments. In this situation, the paradox is that preservation of affordable rents potentially undermines the financially viability of the owner. If owners can no longer afford to provide shelter to the tenant, both the tenant and owner lose out. Once the economy improves, the gentrification of neighborhoods that was proceeding at a rapid pace during the 1980s will begin again as owners are forced to increase rents to cover their added debt service costs.

Erosion of Homeownership

A number of cities have created programs to promote homeownership, with the goal of strengthening neighborhoods and providing low-income people with greater financial stability. Many of these programs encounter barriers in the form of people's inability to make the required downpayments or inability to qualify for financing. The substantial cost burden of the Massachusetts lead law and the restrictive response of financial institutions further exacerbates this situation. Owner-occupied housing was the site of
only 41 percent of the children lead poisoned in Boston and 30 percent statewide. This most likely reflects the higher maintenance standards usually associated with owner-occupancy, and reinforces the need to promote homeownership for inner-city residents as part of a comprehensive strategy to eradicate childhood lead poisoning.

When a property owner has either exhausted all alternatives for addressing the need to delead or simply lacks the will to, their remaining option is to allow the bank to foreclose or simply abandon the property. Advocates for the lead law have argued that property values in New England are too inflated for people to walk away from their buildings because of the added cost of abatement. Admittedly, the mandate to abate lead is just one factor along with the weak economy influencing the high rate of foreclosures and abandonment of property. However, if an owner is losing money on a building, the additional cost of abatement can render abandonment a rational financial decision. John Woods, Housing Programs Manager for the City of Somerville, contends that although property owners often threaten to abandon their buildings when they discover the limited nature of the financial assistance available for lead abatement, very few ever follow through.110 A recent study by the Massachusetts Housing Partnership found that 5000 units of housing have been abandoned in the state.111 While owners might not abandon their property solely on the basis of lead paint issues, lead often constitutes the final factor that pushes them to walk away.

Foreclosure and abandonment represent fearful events and a very real problem for cities. In the current market with a large number of foreclosures, banks often constitute poor property managers and instead try to evict tenants so they can sell the vacant properties more quickly. However, by the time a bank forecloses, the building usually has suffered from a lack of maintenance and becomes harder to sell the longer it sits deteriorating on the

111 Kevin Kiley, Presentation, Massachusetts Association of Community Development Corporations' conference "Lead Paint Abatement: Liabilities and Responsibilities of Property Owners," May 18, 1992, Waltham, MA.
Abandoned properties prove more troublesome for cities because not only is the property removed from the tax roles, but also the resources necessary to secure the buildings or tear them down place a heavy burden on city budgets. The city of Lawrence, with over 500 abandoned and vacant properties, illustrates the dramatic problem posed by this situation. About 95 percent of the city's 52 arson fires as of April 28, 1992 took place in abandoned buildings, with total damages of $1.6 million.

In order to protect against being saddled with owning lead-contaminated property, mortgage lenders have begun to place more stringent requirements of buyers. A few mortgage lenders have refused to issue mortgages on multi-family properties unless applicants have a deleading certificate from the state, have funds placed in escrow to delead shortly after purchase or they put 20 percent or more as down payment. The additional requirement for funds tied to lead abatement effectively eliminates many people from participating in the housing market who otherwise would be able. In particular, these costs could thwart the recent success in increasing the rate of tenant ownership, since this group of people usually has less money than regular owners. Financial institutions contend that the strict liability provision of the law forces them to place these conditions on residential mortgages. In some instances, banks have declined to foreclose on properties where an occupant's child has been lead-poisoned because of the ensuing liability.

The need for rental income to help offset the mortgage payment renders multi-family housing the only means of entering

112 Mossik Hacobian, Interview, Director, Urban Edge, Jamaica Plain, MA, May 2, 1992.
the housing market for many people. The fact that only 18 percent of the housing stock in Dorchester, 14.8 percent in Roxbury, and 23.2 percent in Mattapan are single-family homes almost precludes the decision of whether or not to have tenants. Two to four unit structures represent 64 percent of the housing stock in Dorchester, 47 percent in Roxbury, and 52 percent in Mattapan.\textsuperscript{116} Therefore, policies that impact this housing stock have widespread implications for homeownership opportunities in these communities.

**Liability**

Property owners are finding themselves further squeezed financially as the insurance industry has responded to the rash of lawsuits and the law's strict liability provisions by reducing coverage. Some insurance companies have even stopped insuring properties in Massachusetts which contain lead paint. In 1991, the state Department of Insurance negotiated a compromise with the insurance industry which limits lead liability coverage to a buy back provision available only for the next five years. Under this plan, insurance companies may remove liability for lead from homeowner policies, with an expected drop in rates of $20 per policy. Rental property owners who do not have lead compliance certificates for their units must pay an additional sum of money to receive coverage. For a three family house the price of this additional coverage averages around $800 per year.

If the property owner is unable or elects not to delead their units within the five year time period, they will no longer be protected from lead poisoning lawsuits. For those owners with no access to credit, the pending elimination of insurance places them in a particularly precarious situation. With many low- and moderate-income people at their financial limit on their mortgages and other debt payments, this additional cost for insurance reduces their ability to save the amount necessary to fund abatement.

\textsuperscript{116}1990 Census of Population and Housing, Summary Tape File 1, Boston Redevelopment Authority.
The strict liability provision of the Massachusetts lead law which holds property owners responsible for damages if a child becomes lead poisoned while living on their property, has been the subject of much debate. Under this provision there is no need to prove intent to harm the child or prior knowledge of the hazard on the part of the property owner. The assumption that property owners both are educated as to the hazards of lead paint and have familiarized themselves with the requirements of the state law erroneously categorizes all owners with lead paint as knowingly endangering tenants with young children. While litigation on the behalf of poisoned children has done much to publicize the law's requirements, some of the elderly, who purchased their homes a long time ago, and others who don't pay attention to the issue in the media remain ignorant as to the extent of lead in their houses as well as the state's requirements to delead. It is often only when a child is poisoned on their property and they are faced with a large lawsuit that the reality of the lead paint laws is brought home.

Health advocates contend that all property owners should be aware of the lead paint issue by now and that without strong legal teeth built into the requirements to abate, no one will adhere to the regulations. At the other end of the debate, realtors argue that this provision openly encourages, if not forces people to discriminate. This group advocates for replacement of strict liability with a negligence standard.

At lead paint educational seminars as well as in series of interviews, many property owners assert that the concern over lead paint borders on hysteria in the misrepresentation of actual hazards. Broad coverage in the newspapers of the charges of scientific misconduct filed against Herbert Needleman relating to his 1979 IQ study often misrepresent lead policy as being based primarily on his research, fueling a disregard if not dismissal of lead issues by many people.\textsuperscript{117} In addition, property owners often question the emphasis

\textsuperscript{117}Putka, G., "Research on Lead Poisoning is Questioned," The Wall Street Journal, March 6, 1992. Claire Ernhart, a scientist funded by the lead industry, asserts that studies showing detrimental effects of lead at low levels present inconclusive findings.
on lead paint in homes, when high levels of lead are also present in residential soil, playgrounds, and the interior of schools.

**Tenant/Landlord Relationship Compromised**

The presence of lead in housing has produced victims on both sides of the tenant/landlord relationship. Consequently, a policy conflict has been created between two "social goods" which contradict each other. Essentially, landlord has become a dirty word, while families are characterized as the tenants from hell. Fostering an antagonistic or distrustful relationship between tenants and landlords can only have a negative impact on community solidarity when at least half of the rental housing stock is owner-occupied.

Many owners refuse to rent to families with young children and choose to violate anti-discrimination laws rather than expose themselves to potentially costly liability suits.\(^{118}\) Bob Nash, of the Massachusetts Association of Realtors, stated openly at the April 1992 state lead hearings that property owners regularly practice discrimination against families as a result of the lead law.\(^{119}\) Despite Massachusetts having some of the toughest fair housing laws in the country, the pervasiveness of the discrimination renders it hard to combat. In addition, the Massachusetts Commission Against Discrimination's extensive backlog, and the subsequent inordinate amount of time required to resolve a case, renders enforcement against a property owner unlikely. The difficulty for a family to secure housing also makes it unlikely they will pursue complaints against all the people who deny them housing.

A member of the board of the Dudley Square Neighborhood Initiative stated that many people in the Roxbury area keep their apartments that are contaminated with lead paint vacant because they were afraid to rent to families with young children due to the

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\(^{118}\) A $2 million settlement against a landlord was awarded to Jason King in Dorchester in 1991. Shanna Moss in Gloucester received a $1 million settlement in March 1992.

\(^{119}\) Bob Nash, Massachusetts Association of Realtors, Public Testimony, Hearing Proposed Amendments to the Massachusetts Lead Law, State House, April 8, 1992.
legal consequences to themselves and the health consequences to children.\textsuperscript{120} As Florence Hagins, of the Lead Paint Action Committee, asserted, "The first priority is the children. It's our community's children who are being poisoned."\textsuperscript{121} Gordon Gottsche, Executive Director of Just-A-Start Corporation, a community development corporation covering Boston, Cambridge and Somerville, also confirmed this practice. He indicated many landlords are scared to rent to families and choose to leave their units vacant out of a fear of liability and subsequent loss of housing.\textsuperscript{122} Too many vacant units are especially problematic in inner-city neighborhoods where drugs and crime are common, by contributing to a sense of neighborhood abandonment and deterioration. They also provide for fewer people monitoring activities on the street, as well as more off-street places for people to break in and conduct illegal activities.

The predominance of families with children in these neighborhoods with the highest rate of lead poisoning translates into a severely limited applicant pool for apartments if an owner is unable to abate the lead. This category of owners are fortunate if they can find a tenant without children who by definition allows them to bypass the lead law. Notification by tenants such as these of plans to move out throws the owner into the desperate competition for new tenants without young children. This potential scenario adds another burden to the landlord by infusing their end of the relationship with an undercurrent of anxiety.

Overall, housing opportunities for families constitutes one of the greatest casualties of the Massachusetts lead law. Families with young children have an extremely hard time finding either lead free housing or a landlord who is willing to rent to them.

\textsuperscript{120}Clayton Turnbull, Dudley Square Neighborhood Initiative, Interview, March 9, 1992.
\textsuperscript{121}Florence Hagins, Lead Paint Action Committee, Massachusetts Affordable Housing Alliance, Interview, March 26, 1992.
\textsuperscript{122}Gordon Gottsche, Executive Director, Just-A-Start Corporation, Presentation, at the Massachusetts Association of Community Development Corporations' conference "Lead Paint Abatement: Liabilities and Responsibilities of Property Owners," May 18, 1992, Waltham, MA.
Consequently, tenants often willingly move into units that they know have lead paint because they don’t have options. One family looking for an affordable apartment in the South End had four different landlords openly tell them that they could not have apartments because it was lead contaminated. After six months of searching for housing, they were fortunate enough to be accepted into a newly constructed limited equity coop. Regardless of whether a family has the time or inclination to pursue a complaint against a property owner, many tenants are unaware of the law’s requirement that an owner must delead an apartment if the family applies to live there. The prospect of trying to force someone to undertake a project that will cost them thousands of dollars is not a position many tenants feel comfortable engaging in.

The lead contamination problem produced by industry, in conjunction with the lead abatement laws, effectively pits tenants against owners. Advertising on the radio and TV by lawyers stating, "We'll come in, test your house and sue your landlord, without you having to do a thing", along with the proliferation of lawsuits has fostered strong distrust and even animosity between tenants and landlords. In some cases tenants have hired an inspector to test for lead, and subsequently withheld rent due to violation of the sanitary code if(when) they find lead in the apartment. In addition, a number of families find themselves faced with eviction if one of their children becomes lead poisoned.

Other families stay in a hazardous situation because they have no where else to go where the rent is affordable. Alan Platt, of Action for Boston Community Development, asserts that most families living in low-income housing attempt to negotiate a lower rent when lead is found in the apartment rather than move. If they are unsuccessful, they usually stay anyway due to the lack of

123 Dharmena Downey, Assistant Director, Housing Services Program, Somerville Community Corporation, Interview, April 1992.
124 Personal friends of the author.
125 Florence Hagins, Interview, March 26, 1992.
126 Alan Platt, Interview, Action for Boston Community Development, Boston, MA, April 1992.
alternative housing within their economic means. Few families voluntarily choose the reality of living in an homeless shelter over a potential health threat to their child posed by a home with at least a semblance of security.

CONCLUSION

The Massachusetts lead law provides one of the most comprehensive attempts in the country to both prevent children from becoming lead poisoned and provide children with elevated blood lead levels with medical follow-up and environmental remediation. In many ways though, the law acts to destabilize the same communities the individual children benefitting from the law reside in. The assumption built into the law that the majority of property owners in low-income neighborhoods have the financial ability to abate their housing set in place a series of counterproductive dynamics. As a result, the law undermines efforts to maintain or increase the percentage of owner-occupied housing, severely restricts housing opportunities for families, contributes to high vacancy rates and housing abandonment, and breaks down the tenant/landlord relationship.

The numerous negative outcomes of a policy intended to protect children point to the need to shift the burden for lead abatement from the shoulders of property owners to a more economically viable source. The responsibility of both the paint, gas, and lead industries and the federal government for the extensive lead contamination problem, as well as the inability of many property owners to finance abatement, necessitates the creation of a more multi-faceted array of funding sources. Only by providing financial assistance to property owners, whether through direct grants, subsidies, or loans, will the negative externalities associated with the need to abate residential lead hazards be minimized.
CHAPTER 7: A NEW APPROACH TO THE ISSUE OF LEAD POISONING

ENVIRONMENTAL VS. SOCIAL

Childhood lead poisoning does not fit neatly within an exclusive environmental or social framework. Therefore it requires a merging of the two frameworks in a way that furthers the understanding of the factors influencing why specific children are poisoned as well as the social, political and economic context in which policies to eradicate the disease will be implemented. This merging is critical to ensuring the development of informed policy choices which accomplish their stated goals without having deleterious consequences.

The high concentration of lead, an environmental toxin, within the nation's residential communities has created a hazardous waste problem of overwhelming proportions. A major barrier to hazard remediation arises from the fact that lead does not easily fit with the traditional approach of Superfund, the main federal program to clean-up hazardous waste. This model treats the hazardous waste problem as isolated sites which threaten the health of a specified number of people residing close to the polluted area. Options to protect the health of residents include fencing off the site, providing an alternative water source, or even relocating the residents. In contrast, the ubiquitous nature of lead contamination renders countless residential, and in particular urban, sites dangerously polluted. In addition, the people whose health is seriously impaired by lead far outnumber those impacted by any other single hazardous waste.

The bioavailability of lead in a house and the potential for it to damage the health of a child living there is dependent upon a myriad of social factors outside of the child's control. Factors such as the condition of the housing, the child's nutritional status and quality of health care received, and the contamination of surrounding environment play a determining role in how much lead a child ingests and absorbs, and whether or not a child's elevated lead level is detected and treated. What separates lead poisoning from many other social problems is that while social problems in general rely
on modification of human behavior for elimination, lead damages children by its mere release into the environment. Lead therefore needs to be addressed as an environmental toxin which is imbedded in the social structure, with housing, health care and nutritional components.

FINANCING CLEAN-UP

When childhood lead poisoning is viewed as just another poor people's problem, it gets thrown into the pot of problems competing for funds. Advocates are then forced to justify why lead poisoning is more serious than issues such as drug addiction, crime and homelessness. In essence, it becomes a zero sum game as advocates for different social programs lobby an overburdened and inefficient social welfare system and no effective action is taken to alleviate the problem. Defining a problem as primarily impacting the poor often consigns it to low-priority status for policy development and resource allocation. Micheal Lipsky contends that, "prevailing orientations toward the poor in the United States include the deep conviction that poor people at some level are responsible for the conditions in which they find themselves...These convictions are epitomized in the observation that public programs for poor people are almost always treated...as costs to society, not benefits."127 This framing in part explains the legacy of inaction on the childhood lead poisoning issue.

Abatement of the 3.8 million housing units estimated by HUD to contain priority hazards, at a cost of $5,000-10,000 per unit, will cost $19-38 billion. Given the political reality that government funds won't be allocated solely to those people with peeling paint and excessive dust in their homes, the amount of funds required for abatement projects begins to approach the scale of the savings and loan bail-out.128 As a society, we are much more willing to bail-out

127 Lipsky, 1980.
128 The new $11 million loan program administered by the Massachusetts Housing Finance Agency provides loans at 5 percent interest to people who qualify for credit. $1 million has been set aside for loans to people unable to support additional debt to be repaid when the property is sold or refinanced.
a collapse of the banking system caused by wealthy bankers than we are to ameliorate the inability of the private housing market to cope with the abatement of lead paint in substandard housing. Consequently, financing lead abatement requires a multi-faceted approach which incorporates the public sector, financial institutions, non-profit organizations, and private industry as opposed to relying primarily on the homeowner.

State programs, which present one option for financing lead abatement, only have the potential to provide a fraction of the billions of dollars required. Many of the programs under consideration in Massachusetts focus primarily on three goals. Firstly, the programs seek to increase the funds available for owners to borrow to finance abatement; secondly, to facilitate the ability of a property owner to acquire financing through relaxing loan criteria; and thirdly, to make the loan more affordable through subsidizing a lower interest rate. In order to delead the largest number of units for a given amount of money, only a small percentage of the newly created Massachusetts Housing Finance Agency deleading loan program is reserved for zero percent deferred payment loans. As a result, the vast majority of the efforts are targeted toward maintaining the onus on the property owner for financing abatement.

In contrast, tax credit or grant programs shift the burden to the public sector. A proposal is currently under consideration in Massachusetts to increase the tax credit and make it assignable to people with a tax liability. The current program structure only benefits people with a tax liability who can claim the $1,000 credit allowed for each unit deled. Therefore, even if the tax credit is doubled, it still provides no assistance to those most unable to afford abatement. One way in which the assignability concept could work would be for a homeowner to assign their abatement credit to a business. Upon receipt of a deleading compliance certificate, the business would give the homeowner cash for the amount of the tax credit approved by the state and then deduct it from their next estimated state tax payment. Abatement companies could
potentially accept a homeowner's tax credit as partial payment for the deleading job.

The increase in the number of people able to utilize the tax credit as well as the speed by which they claimed the credit would place a much more immediate drain on the state budget than occurs under the current program. Significantly increasing the yearly amount of funds allowed to be claimed for abatement would in turn lower expected state revenues. Under the present state administration, this would most likely translate into further reductions in allocations to social programs already struggling under large cuts.

The deeper pockets of the federal government render it a more realistic source for grants to low-income homeowners than states. In 1991, Congress authorized a $50 million grant program for abatement of private housing. The program was set up as a competitive grant program to cities and states. Interest on the part of the state in using governmental money to leverage additional private investment suggests that whatever portion of the HUD funds the state receives will most likely be in the form of loans when it is made available to homeowners. Low-income homeowners and tenants have yet to overcome their lack of political power and place the needs of inner-city neighborhoods on the policy agenda. The state needs to recognize that a significant portion of the housing stock with priority lead hazards requires at least partial grants for abatement in order to retain housing units affordable to low-income people.

On the federal level, the lack of political will to address poor people's need for safe and affordable housing has been especially evident from the drop in housing subsidies by 85 percent during the last decade in the face of a demonstrated growing need.129 A reverse in this trend would have a dramatic impact on not just removing lead from housing, but also improving the quality of the low-income housing stock. One option would be to provide a substantial increase in the rental subsidy programs. In a weak

housing market, this would provide homeowners with a financial
incentive to delead through a guaranteed rental base and increase in
rental income over market rents. Another option involves the
multitude of programs for developing and maintaining affordable
housing which community development corporations, non-profit
housing rehabilitation organizations, as well as cities and states
have developed.

An essential prerequisite for developing a realistic funding
component of a comprehensive lead policy involves reframing the
issue of childhood lead poisoning as an environmental toxin.
Environmental clean-up programs often force the responsible
industry to bear the cost or spread the costs throughout society. In
this way, neither those impacted by the harmful effects of the toxin
nor parties bearing no responsibility for its presence in the
environment directly pay for remediation. Lead fits this model as
parents clearly cannot be expected to finance removal of lead in the
housing stock to ensure their child's safety, and the individual
owners of the contaminated sites often cannot bear the heavy cost
burden presented by abatement. Society as a whole would greatly
benefit from elimination of lead hazards, rendering it appropriate to
expand the cost burden beyond property owners.

One option that has been considered for utilizing
environmental statutory authority to remediate lead hazards
involves the joint and several liability provision of the
Comprehensive Environmental Response, Compensation and Liability
Act. This statute addresses environmental problems where multiple
parties contributed to the site contamination and holds them liable
for damages. The Hazardous Substance Superfund established under
CERCLA, however, is an inappropriate vehicle for cleaning-up lead
paint. Congress specifically banned the funding of clean-up if the
release or threat of release of a toxin is "from products which are
part of the structure of, and result in exposure within, residential
buildings" (CERCLA, 42 U.S.C.A., Section 104). As a result, this
statute only provides the opportunity to remediate lead
contaminated soil.
The major drawback of this strategy rests with the fact that past and current property owners, and not the paint and gasoline industries which produced the toxic products, would be held liable for financing the clean-up. The detrimental impacts on many homeowners and tenants, as well as on whole communities, of placing the financial burden for abatement of lead paint on property owners indicates that such a policy would only further destabilize the communities disproportionately impacted by lead. If societal resources are going to be expended on eradicating childhood lead poisoning, Superfund’s mandate to address exterior sources of contamination requires rejection of this statute as an effective mechanism. Lead paint, both interior and exterior, is the most significant contributor to elevated blood lead levels and presents a continual source of new contamination to the house as well as the soil as it deteriorates. As such, paint clearly demands priority for abatement over soil.

In the past, Congress has recognized the need for special funds to achieve environmental policy goals of a nature similar to lead abatement. Placing a tax on paint or adopting the Environmental Defense Fund’s proposal to place an excise tax on the introduction of new lead into commerce would create the dedicated revenue source on the scale necessary to eradicate lead paint in high risk housing. EDF proposes that such a program be administered jointly by the EPA and HHS. In addition, these agencies would also monitor the health effects of the lead removal actions.

The Cardin bill introduced in Congress in 1991 is modeled after EDF’s excise tax proposal. The lead industry has reacted by lobbying to also have the paint and gasoline industries included in the tax scheme. However, election politics guarantee that a new tax has no chance of winning approval in Congress this year. The Cranston bill which authorizes an additional $250 million to HUD for abatement grants to cities and states faces a much greater

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130 The Environmental Defense Fund cites the Hazardous Substance Superfund, the Nuclear Waste Fund, and Leaking Underground Storage Trust Fund as dedicated environmental funds.
likelihood of passing. One problem with this bill revolves around the fact that the problem of bureaucratic resistance on the part of HUD to addressing the issue of lead paint in housing continues to present a major obstacle to effective policy development. In addition, relying on the yearly budget appropriations process for funds discourages long-term planning for remediation of priority hazard units. The political process also guarantees that people with potential versus immediate lead hazards in their homes will be more successful in accessing the funds.

The high cost of abating substandard housing and the immediacy of the threat to the children living in them indicates the need for the creation of a multi-billion dollar fund specifically designated to remediate the substandard housing stock. An earmarked funding source would insulate the program from the expansion and contraction characteristic of governmental initiatives for social services and allow development of a multi-year plan to target substandard housing. Adopting a market solution to funding abatement of the priority hazard units presents the only feasible means for generating the level of funds necessary for such a large-scale project. The infeasibility of this type of a grant program to be funded at the state level renders the fate of the Cardin bill especially important. Only through targeting funds to low-income housing will the goal of protecting those children most at risk from lead-induced brain damage be realized in a morally acceptable time period.

Enhancing Community Resources

A community cannot be developed, it can only develop itself. For real development means the development, the growth, or people.

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131 Don Ryan, Interview, Executive Director, Alliance to End Childhood Lead Poisoning, May 18, 1992, Waltham, MA.
133 Lipsky, p. 182.
The high concentrations of lead in paint, soil, and dust in urban communities constitutes an environmental problem with profound implications for the viability of older urban areas. Lead poisoning places major obstacles in the path of community development by attacking young children's neurological system, robbing them of their intellectual potential, and resulting in markedly higher school drop-out rates and incidences of anti-social behavior. The concentration of large numbers of lead poisoned children in inner-cities with a compromised ability to function successfully in society as adults undermines the sustainability of these communities in an insidious manner.

Groups attempting to promote community development by and for the community often focus on environmental issues as a luxury to be addressed after tackling issues such as physical infrastructure and job creation. In projects organized in the Boston area by the Dudley Square Neighborhood Initiative, and Jamaica Plain Neighborhood Development Council, the residents of the respective neighborhoods determined all of the details for new housing from the location to design and management. However, for this kind of a participatory process to truly empower people, it requires the education of all citizens to the level they can think critically and make informed choices.

People involved in housing and community development need to join with environmentalists to reconceptualize urban environmental issues. White middle-class environmentalism has traditionally conceptualized cities as antithetical to the natural environment. The urban ecosystem however exists in a fragile balance and needs to be viewed as a critical component of urban quality of life. The urbanization of society places increasing importance on addressing the need to make cities function in a way which impact less on the environment and protects the health of the residents. The density of urban areas and high concentration of pollutants renders environmental problems a concern for a significant number of people.

The environmental justice movement, primarily composed of low-income and minority people, bridges the gaps between the
housing and community development and environmental frameworks through its promotion of the links between the human and natural environment. Carl Anthony, the Director of the Urban Habitat Program at the Earth Island Institute, contends that,

Shifting resources away from projects that are damaging to the ecosystem toward programs and projects that meet basic human needs must become the highest priority for the environmental movement.\textsuperscript{135}

The mobilization of this sector of society promises to launch urban environmental issues into the national policy arena within a context that appropriately interjects people into the environmental framework.

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