ENVIRONMENTAL LAW INSTITUTE

IMPROVING INDOOR AIR QUALITY IN RENTAL DWELLINGS

A Review of Policies in Five U.S. Localities

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EXECUTIVE SUMMARY

Over the past several years, there has been a growing recognition of the importance of good indoor air quality to human health and productivity. EPA has consistently ranked indoor air quality (IAQ) as one of the top environmental health priorities. Research has demonstrated the connection between indoor environmental factors and a range of health impacts—from asthma and other respiratory diseases to lung cancer and neurological impairment. Many public health and environmental programs at the federal, state and local levels have responded with a stronger focus on changing practices that impact the quality of the indoor environment.

Many programs addressing indoor air quality focus on the school environment, an important priority given the amount of time students and staff spend in school buildings and the heightened vulnerability of children to environmental pollutants. Public agencies are changing policies and practices that affect school indoor air quality, and communities are playing an important role in bringing about those changes. The home environment is also important to the health and well-being of children and adults alike. That environment—in particular rental dwellings—presents a different set of challenges for governmental policies and programs.

Approximately one-third of all residents of the U.S. rent their homes. Government programs that provide education and information to the public are important, but are not always adequate to addressing IAQ problems in rental buildings. In the rental context, the person who controls the environment (the owner) is not the same person who experiences the health impacts of IAQ problems (the tenant). Tenants generally lack the authority, and often the means, to take the steps necessary to prevent or fix a building problem. Governmental programs that oversee compliance with minimum standards in rental properties play a critical, but complex role at the intersection of building regulation and public health.

The potential health effects of mold contamination have received a tremendous amount of public attention in recent years. Other IAQ problems are also important in the context of residential rental properties. In addition to deteriorating lead paint, a common problem is pest infestation, which can be particularly serious for families with asthma sufferers. At the same time, the treatment of infestation with chemical pesticides can pose a different set of health risks. Inadequate ventilation, high radon levels, and improperly vented combustion appliances can also impact health and well-being.

This report reviews state and local policies that address indoor air quality-related problems in residential rental housing, and describes the government programs charged with carrying out those policies. The report provides an in-depth discussion of five local jurisdictions—San Francisco, California; Boston, Massachusetts; Seattle, Washington; Marion County, Indiana; and Stamford, Connecticut. The report covers laws that deal with mold contamination and other general IAQ problems, but does not include laws dealing specifically with lead-based paint or asbestos.

While laws governing housing vary from state to state and city to city, the five localities included in this report provide a general picture of the types of legal provisions that can be used to address IAQ-related problems. The primary type of law in this area is the state or local housing code that establishes minimum conditions for rental properties. Many local housing codes are based on a model code developed many years ago by the Centers for Disease Control and the American Public Health Association. Thus, while codes differ in specific language, many contain basic health-related features that could potentially be used to address indoor air quality. Nuisance laws, a common source of authority for local health agencies, also provide a general basis for addressing housing-related public health problems. Landlord-tenant laws may establish an owner's responsibility for maintaining the premises generally or with respect to specific conditions. Finally, individual state or local laws may create separate requirements related to a particular indoor pollutant.

STATE AND LOCAL LAWS

Some of the legal provisions identified in this report are fairly common and are likely to be found in the housing and health codes of many states and localities. Other

provisions are less typical, but illustrate approaches that could be adapted to other jurisdictions.

Housing Codes. In some cases, state housing codes are the primary source of authority for regulating conditions in rental properties. In others, the local housing code expands significantly on state law and serves as the primary source of minimum housing standards. In most cases, local jurisdictions are called upon to enforce housing standards, whether those standards are set primarily by state or local law. The following provisions of state or local housing codes—common to most if not all of the jurisdictions included in this report—establish general standards that are relevant to preventing and addressing certain IAQ-related problems. The extent to which the provisions are implemented to address health problems varies, as discussed in the report.

Basic sanitation and cleanliness. While the precise language may vary, housing codes generally establish a requirement that the premises be maintained in a clean and sanitary condition. Such a provision could potentially be used, for example, to ensure that properties are free of pest infestation and mold contamination.

Adequate maintenance. Housing codes generally require the owner to maintain the premises adequately. Such a provision may apply to the dwelling units generally or may require maintenance of certain specific components of the units—walls, ceilings, floors, equipment, etc.

Ventilation. Codes often require that dwelling units have adequate ventilation, specifically providing that bathrooms and kitchens be equipped with a window or a source of mechanical ventilation. Such a provision is potentially useful for addressing the build-up of indoor pollutants or moisture.

Pest control. Property owners are usually required to maintain premises free of insects, rodents and other pests. This requirement generally applies to common areas as well as to individual units in multi-family buildings.

Adequate plumbing. Most housing codes require that plumbing fixtures be maintained in good working order. Some codes may explicitly mandate that the landlord provide "leak-free" plumbing.

Weathertightness. Maintaining dwelling units in weathertight condition is another typical feature of housing codes. Such provisions may specifically require that structural components be maintained so as to prevent moisture intrusion and dampness.

In addition to these fairly standard provisions, some of the jurisdictions included in the report have enacted less common code provisions related to IAQ issues.

Mold. Two of the jurisdictions studied have enacted housing codes that mention mold specifically. Most notable is San Francisco's housing code, revised in 2002 to add both a general standard (including as a substandard condition "chronic or severe" mold contamination that causes a health hazard or structural damage) and specific requirements (mandating that virtually all components of a dwelling, including carpeting, be maintained free of mold and mildew). The Massachusetts housing code requires that structural elements of a dwelling be free from chronic dampness, which is defined as the regular and/or periodic appearance of moisture, water, mold or fungi.

Non-absorbent surfaces. Three of the housing codes reviewed in this report require that bathroom and kitchen surfaces be constructed and maintained to be impervious to water. Such a provision potentially provides a basis for addressing damp, water-damaged, or moldy floors in bathrooms and kitchens.

Unvented heaters. Two of the jurisdictions have housing codes that include prohibitions on unvented heaters, addressing the problem of indoor accumulation of combustion gases.

Pesticide notification. The Massachusetts housing code requires that landlords comply with all requirements of the state's pesticide laws, including pre-notification requirements. This provision may bring pesticide use within the ambit of housing code enforcement programs in certain cases.

Nuisance law. Local governments often have broad authority to address nuisances, derived from state law, local codes, or both. The precise definition of a nuisance will vary, but most codes establish authority to take action when the condition of residential property is harmful to health. Local health agencies use this general authority to address a variety of IAQ- related conditions, particularly pest infestation and mold contamination.

Often, health agencies cite these general nuisance provisions along with other general and specific provisions of the housing code. Only one jurisdiction, San Francisco, has a nuisance law that specifically mentions IAQ-related problems (pest infestation and mold) as falling within the definition of a nuisance.

Landlord-tenant law. State landlord-tenant laws generally establish basic landlord responsibilities for maintaining the premises. Some establish a general duty to maintain the premises in a fit condition, while others include examples of particular conditions that constitute violations of the duty. The laws provide for citizen (tenant) enforcement to address substandard housing by establishing various legal causes of action and a range of remedies. Massachusetts' law in this area is an example of an expansive provision of legal tools for tenants.

Other laws. Some states and local governments have enacted laws that address specific indoor pollutants. Lead and asbestos (not covered in this report) are the most commonly regulated indoor pollutants. Pesticides also may be the subject of separate state or local laws. For example, states such as Massachusetts and California require that residents be notified prior to the application of pesticides indoors. Although radon is the subject of numerous state laws, those laws generally do not address high levels of radon in residential rental properties. In the five jurisdictions included in this report, the same is true for state and local laws regulating second-hand smoke, although other local jurisdictions in the U.S. have considered or enacted smoking restrictions that may affect residential properties. High levels of radon or second-hand smoke within a rental dwelling could potentially fall within general housing, nuisance or landlord-tenant code provisions. However, the governments included in this report do not take a regulatory approach to addressing these pollutants in rental housing properties, and tenants face significant legal hurdles in bringing such cases on their own.

IMPLEMENTING THE LAW

Whether the requirements contained in housing, nuisance and other laws are general or specific, the extent to which they are used to address IAQ-related problems depends largely on the government programs set up to implement the law. Outside of these government programs, the main avenue of enforcement is tenant lawsuits. One legal services office in Massachusetts has set up a special program to represent lower income families in housing cases that impact health, particularly cases involving residents with lead poisoning or asthma. Without such specialized resources, however, tenants face significant obstacles to using the law to remedy serious sub-standard housing conditions—barriers that include lack of familiarity with the legal system and lack of alternative housing options.

The effectiveness of local governments in using their laws to address IAQ-related housing problems depends largely on the role of the local health department. The level of involvement of local health agencies in IAQ issues varies widely across the U.S. and even within individual states, based on the availability of staff and financial resources and the establishment of IAQ as a priority issue. All of the jurisdictions studied here have some local health agency capacity for addressing IAQ issues, though the role of the health departments in housing cases differs significantly depending on whether or not health and housing functions are integrated in a single agency.

Integrated health and housing functions. Two of the jurisdictions—Stamford and Marion County—have integrated health and housing functions within the local health department. In communities that have an active IAQ program, as these two metropolitan areas do, integrating these functions results in more proactive use of housing and health codes to address IAQ-related problems in rental housing. In Marion County, a special IAQ unit was created within the health department, and this unit (rather than the general housing inspection unit) handles most housing inspections involving IAQ problems. As a result, inspectors in Marion County make broad use of general provisions—*e.g.*, citing mold contamination on walls or floors as a violation of the housing code requirement that building components prevent dampness and be maintained in a sound condition. In Stamford, the health department has an active IAQ program, including a healthy homes project that links outreach, education and funding for repairs with code enforcement. The city has created a special IAQ checklist for conducting inspections under this program. The institutional unification of housing and health roles in these localities is reflected in inspection programs that make full use of existing legal authority to address IAQ problems in housing in a more comprehensive manner.

Separation of health and housing functions. In the other three cities—San Francisco, Boston and Seattle—the principal public health programs are located in a separate agency from the housing code enforcement pro-

grams. Because housing inspection agencies generally view housing problems through the prism of building science rather than public health, those agencies may be less confident in applying general housing code provisions (*e.g.*, those governing basic sanitation or maintenance) in cases involving health complaints. A review of these three cities suggests that the involvement of the public health agency is vital to ensuring robust code enforcement in IAQ-related cases.

In Boston and San Francisco, the public health agencies play an active role in addressing IAQ issues, including a regulatory function. These agencies conduct housing inspections in cases involving possible health problems, although there is not a formal division of jurisdiction between the health and housing agencies. In both cities, housing and health agencies coordinate informally, and the health department provides information and training to housing inspectors. In Boston, in particular, the housing inspection agency has established a separate enforcement initiative for cases involving severely asthmatic individuals, and relies heavily on collaboration with the city's environmental health program. In Seattle, the health department addresses IAQ issues mainly by providing information to landlords and tenants, as well as housing inspectors. The health department does not play a regulatory or enforcement role in this area, and the general provisions of the housing code appear to be used less expansively by housing inspectors to address mold and other problems.

CONCLUSIONS

The five jurisdictions studied in this report have established different types of programs to address IAQ problems in residential rental housing. While the precise language of the laws in these jurisdictions differs, all provide general authority on which local agencies can take action to require owners to maintain their properties free of serious health hazards. The way in which the laws are used to address IAQ problems depends in large part on local agency structure and resources. The experiences of these five jurisdictions suggest the following steps for strengthening policies and programs in this area.

- Modifying state or local housing or public health codes to clarify authority and/or to strengthen minimum standards in this area. San Francisco is an example of one city that has clarified local authority to address mold, while Marion County has adopted more general housing provisions that can be applied broadly.

- Strengthening the local health department's capacity to address IAQ issues generally and to provide assistance in housing cases—including training housing officials, conducting inspections, and providing information to landlords and tenants. State public health programs could be an important resource in building local capacity.

- Developing guidance for property owners on remediating IAQ problems, to help ensure that problems cited in a housing inspection are corrected. The absence of such guidance, particularly in the area of mold contamination and pest infestation, can present a practical obstacle to improving housing conditions.

- Creating a specialized program within the housing inspection agency to address cases that involve asthma and other health problems. Where local housing and health agencies are separate, collaboration between the two is vital to the success of such a program.

CHAPTER ONE
INTRODUCTION

THE PROBLEM

Over the past several years, public awareness and concern about indoor environmental quality have grown significantly. This increasing attention to the indoor environment is reflected in the development of governmental and non-governmental programs to improve indoor air quality (IAQ), as well as substantial activity among policymakers to address the issue.

Two indoor air quality pollutants that have been widely researched and publicized are lead-based paint and asbestos. Indoor air quality problems can arise from a variety of other sources, such as mold growth from moisture intrusion; volatile organic chemical emissions from furnishings and materials; insufficient fresh air supply due to poorly designed or maintained ventilation systems or to overcrowding; pest infestation; combustion pollutants; and high radon levels.

Exposure to indoor air pollutants can produce a variety of health effects. According to a recent U.S. Environmental Protection Agency (EPA) report:

> Known health effects of indoor pollutants include asthma; cancer; developmental defects and delays, including effects on vision, hearing, growth and intelligence and learning; and effects on the cardiovascular system (heart and lungs). Pollutants found in the indoor environment may also contribute to other health effects, including those of the reproductive and immune systems. Some pollutants, such as carbon monoxide (CO), are acutely toxic and can result in death.

U.S. EPA, Healthy Buildings, Health People: A Vision for the 21st Century (2001), *available at* http://www.epa.gov/iaq/hbhp/index.html (last visited: May 30, 2003). Children are particularly vulnerable to the health effects of indoor pollutants. Recently, much attention has been focused on the increasing prevalence of asthma in children, particularly children of color, and studies have indicated a corresponding increase in school absenteeism. A recent National Academy of Sciences report on asthma affirmed the importance of considering measures to address biological contaminants and other indoor asthma triggers. National Academy of Sciences, Institute of Medicine, Clearing the Air: Asthma and Indoor Air Exposure (2000), *available at* http://www.nap.edu/books/0309064961/html/ (last visited: May 30, 2003).

The indoor environment in residential rental buildings presents one of the greatest challenges in addressing the potential health impacts of poor indoor environmental conditions. In part, this is because of the widespread and chronic problem of unsafe and deteriorated housing. In part, it is because the residents of rental properties—the people whose health is affected by the problems—are often not in a legal position to address the problems. This problem is most acute for affordable housing properties that are home to working class families with few housing choices.

One-third of occupied housing units in the United States are renter-occupied units, and approximately 27 percent of all housing units are located within multi-unit buildings. U.S. Census Bureau, Housing Characteristics & Housing: Occupancy and Tenure (2000), *available at* http://factfinder.census.gov/servlet/BasicFactsServlet (last visited: May 30, 2003). Thus, a significant segment of the U.S. population—including a large share of those who are most vulnerable to health risks and least able to address them—is potentially impacted by the problem of poor indoor air quality in rental properties.

PURPOSE AND SCOPE OF THE REPORT

The purpose of this report is to help advance understanding of the extent to which current state and local policies address indoor air quality problems in rental housing. The report focuses on the role of local agencies in enforcing housing and health laws to

address housing conditions that adversely affect indoor air quality.

The report reviews the policies and programs of five jurisdictions: San Francisco, California; Boston, Massachusetts; Seattle, Washington; Marion County, Indiana; and Stamford, Connecticut. For each, the report discusses the state and local housing and health laws that are potentially applicable to addressing IAQ problems in rental housing, and also describes how key local agencies use these laws. While these five examples do not capture all variations on state and local policy, they provide a general picture of how the law is being used in this area and illustrate strategies that can be adapted to other jurisdictions.

In general, the state and local laws described in the report apply to both privately and publicly owned housing, including privately owned housing that is subsidized by the federal government. In Chapter Two, the report provides a brief overview of federal regulations for public and subsidized housing that may be applicable to addressing IAQ problems in those properties. In the detailed discussions of each jurisdiction, though, the report describes only whether the local public housing agency has adopted policies that exceed federal regulations. The report does not address the separate question of how federal or local public housing agencies are implementing federal standards with respect to IAQ issues. While important, that question is beyond the scope of this research.

This report does not cover all enforcement activities regarding housing that could address indoor air quality problems. First, the report focuses on *government* enforcement of public policies. The legal recourse of private citizens—primarily tenants—can be an important factor in improving housing conditions, but is not the subject of this report. Information about landlord-tenant laws is provided to help understand the legal context, but a discussion of how those laws are (or may be) used is not included. Second, the focus of the report is on government enforcement of laws establishing or addressing basic housing conditions in existing buildings. There may be other policies, such as building codes for new construction, that could potentially be relevant to addressing indoor air quality problems, but they are not discussed here.

METHODOLOGY AND FORMAT

The research for this report was carried out in two primary phases: (1) a collection and analysis of relevant state and local laws for each of the five jurisdictions; and (2) interviews with officials from local enforcement agencies as well as non-governmental organizations active in housing code enforcement issues. Unless otherwise indicated, these interviews are the source of the information presented about implementation of the laws and regulations.

The report is divided into eight chapters. Chapter Two provides an overview of federal, state, and local laws governing minimum conditions in rental housing. Chapters Three through Seven describe the policies and enforcement practices of the five jurisdictions covered in the report. Finally, Chapter Eight reviews the key findings from the five jurisdictions and presents observations about the opportunities and obstacles to addressing IAQ problems in rental housing.

CHAPTER TWO
OVERVIEW OF THE LAW

Both state and local laws establish minimum conditions for rental properties. For housing units owned or subsidized by the federal government, federal law provides another layer of regulation.

I. STATE AND LOCAL LAWS

The state and local laws most directly addressing housing conditions are of two types: housing laws that set forth specific minimum standards; and landlord-tenant laws that lay out the responsibilities of landlords and tenants to maintain the premises and that may establish general or specific criteria for satisfying this responsibility. Another relevant area of state and local policy is nuisance law, which establishes general authority for local health officials to address conditions in buildings that affect public health and welfare. In addition to these areas, other specific laws and regulations may govern individual housing problems that affect occupants' health.

States and local jurisdictions vary in terms of the existence and scope of these laws. Following is some background on the role of these types of laws generally. Subsequent chapters discuss in depth the laws of five jurisdictions and how those laws are implemented.

Housing law. The most direct regulation of housing conditions is the establishment of a housing code that sets forth minimum standards to be enforced by local agencies. States may or may not have such a law, or it may go by a different name. There is no single model for state housing codes, and individual state laws vary considerably in their level of specificity regarding minimum conditions that must be maintained in rental housing. Some may provide only general criteria for "habitability" or "fitness for human habitation." Others may include a detailed list of conditions that render a property sub-standard and require action by the owner to fix the problem.

State housing codes typically are enforced by local health or housing agencies. State laws generally do not preclude local governments from enacting their own housing codes, provided that the local codes are at least as strict as the state code.

Thus, whether or not a state housing code exists, local jurisdictions may have housing codes of their own. These local codes vary significantly as well, though there are model codes that have formed the basis of local housing codes. Most notably, the American Public Health Association (APHA) and the Centers for Disease Control (CDC) jointly produced a model ordinance based on an earlier APHA "minimum standards code" for housing regulation. APHA-CDC RECOMMENDED HOUSING MAINTENANCE AND OCCUPANCY ORDINANCE (1975) [hereinafter APHA-CDC code].

Like most housing codes, the APHA-CDC model code does not refer to indoor air quality problems explicitly, though it has a strong public health underpinning and contains a number of provisions that could potentially be used to address IAQ problems.

Sanitation. According to the model code, premises must be "clean, sanitary, [and] fit for human occupancy" before being occupied. AHPA-CDC code § 3.01. Owners must maintain common areas in a "clean and sanitary" condition and tenants must maintain those parts of the dwelling unit they control. AHPA-CDC code § 3.02.

Hazardous substances. Owners must maintain the premises "free from hazards to health due to the presence of toxic substances" as determined by the local governing agency. AHPA- CDC code § 3.15.

Infestation. Owners must exterminate insects or rats found in the common areas or in individual dwelling units if more than one unit in the building is infested. AHPA-CDC code § 3.09. The premises must be maintained in a rat-free and rat-proof condition. AHPA-CDC code § 7-06.

Ventilation. The model ordinance provides that all habitable rooms, as well as kitchens and bathrooms, have a window or other ventilation device. AHPA-CDC code § 5.02, 5.03. The code further requires that where HVAC systems are used, the systems be "maintained and operated in a continuous manner and in accordance with

the designed capacity of the installed equipment." AHPA-CDC code § 5.02.01.

Combustion gases. The model ordinance prohibits the use of unvented heaters. AHPA- CDC code § 6.02.

Weathertightness and dampness. Under the model code, every foundation, roof, exterior wall, door and window must be "reasonably weather-tight, water-tight, and damp-free" and kept in sound condition and good repair. AHPA-CDC code § 7.02. Premises must be "graded, drained, free of standing water and maintained in a clean, sanitary and safe condition." AHPA-CDC code § 7.03.

While local codes differ in their exact contents—even those based on the APHA-CDC model code—many can be expected to contain provisions that address the above issues. Whether those provisions are implemented to address specific indoor air quality problems—*e.g.*, mold contamination, chemical exposures—depends on a wide range of factors, including the precise language of the code and the enforcement priorities and resources of local agencies.

Housing code enforcement is typically carried out through a program of inspections and the issuance of orders requiring property owners to correct violations. Local codes generally provide for civil and/or criminal penalties in the event of noncompliance with an order. *See, e.g.*, APHA-CDC code § 15.01. Local governments may also implement housing codes by requiring that multi-family properties obtain licenses, and by making annual re-issuance of licenses contingent on a satisfactory housing code inspection. *See, e.g.*, APHA-CDC code § 12.

Landlord-tenant laws. While housing codes are the primary mechanism for ensuring the maintenance of basic housing standards, landlord-tenant laws establish the legal relationship between landlords and tenants and provide for private legal recourse in the event that one party violates those legal obligations. Landlord-tenant law is established both by legislation and by court decision.

Until fairly recently, landlord-tenant relations were largely governed by the doctrine of *caveat emptor*, or buyer beware. *See generally*, Browder, "The Taming of a Duty—The Tort Liability of Landlords," 81 Mich. L. Rev. 99,101 (with citations). In the 1960's, continuing urbanization and the concentration of housing prompted courts to address a landlord's responsibility for the condition of rental property. *See, e.g.*, *Pines v. Perssion*, 111 N.W. 2d 409 (Wash. 1961); *see generally*, Love, "Landlord's Liability for Defective Premises: Caveat Lessee, Negligence or Strict Liability?" 19 Wisc. L. Rev. 19, 91-98. In 1970, the federal case *Javins v. First National Realty Company*, 428 F. 2d 1071 (D.C. Cir), marked the end of the doctrine of *caveat emptor*, and established a landlord's duty to repair leased premises. The *Javins* court found an implied warranty of habitability in rental housing, analogous to implied warranties in the sale of goods. *Id.* at 1074.

Since then, most states have recognized the implied warranty of habitability through court decisions, statutes or both. State landlord-tenant statutes may, for example, establish a general duty to maintain the premises in a fit condition, while others may include examples of particular conditions that constitute violations of the duty. The laws may provide tenants with various remedies for a landlord's violation of the duty to maintain the premises, such as the right to quit the premises, the right to bring a rent escrow action in court, and the right to rent abatement.

Although state landlord-tenant laws vary in scope, model laws do exist in this area, such as the Uniform Residential Landlord/Tenant Act. *See* National Conference of Commissioners on Uniform State Laws, Uniform Residential Landlord/Tenant Act (1974) [hereinafter URLTA]. At least 15 state laws are based on the URLTA model. The URLTA does not explicitly address indoor air quality, although it does contain general language placing responsibility on the landlord to maintain the premises. For example, the model act requires landlords to "comply with the requirements of applicable building and housing codes materially affecting health and safety." URLTA § 2.104(a)(1). The standards set by state and local housing codes could thus be enforceable by a tenant using the remedies provided in the state's landlord-tenant law. In addition, the model act requires the landlord to "make all repairs and do whatever is necessary to put and keep the premises in a fit and habitable condition." URLTA § 2.104(2). The model act also contains a requirement that tenants maintain their units in a clean and safe condition and abide by all applicable housing codes. URLTA § 3.101.

Nuisance law. Local governments often have broad authority to address nuisances. This authority derives from state law, local codes, or both. The precise definition of a nuisance will vary, but in general these laws are broadly written to authorize public health or other agencies to take action to address conditions that threaten or harm public health and welfare. Such action usually

includes public abatement of the nuisance. In some cases, nuisance laws specifically cover conditions inside residential buildings, and some laws may identify specific housing conditions that constitute a nuisance.

Other laws. In addition to housing, landlord-tenant and general nuisance laws, state and local legislation and regulations may address specific indoor pollutants. The most common such laws are those governing lead-based paint, an indoor hazard that is treated extensively elsewhere and not addressed in this report. Similarly, asbestos is often subject to a separate regulatory regime and is not covered here. Many states and local governments have adopted laws governing other regulated pollutants, such as radon, environmental tobacco smoke, and pesticides. These laws generally do not explicitly address the home environment, however.

For example, state and local laws aimed at reducing the risks of secondhand smoke typically restrict smoking in public buildings. Such laws generally do not cover publicly-owned housing, though some laws may apply to publicly-accessible common areas in public or privately-owned apartment buildings. In addition, laws governing radon usually address the real estate transaction or radon testing and mitigation in schools or public buildings. The regulation of pesticide applications is one area that sometimes applies directly to rental housing properties, in that some states require notice to residents before pesticide applications.

Laws governing these specific pollutants are discussed in the chapters that follow where they are applicable to rental housing.

II. FEDERAL LAWS GOVERNING PUBLICLY OWNED AND SUBSIDIZED HOUSING

There are two primary rental housing programs for low-income families funded through the federal Department of Housing and Urban Development (HUD). The first, HUD's public and Indian housing program, involves housing that is publicly owned and that is operated by a governmental agency. The second program is HUD's Section 8 certificate and voucher program. The Section 8 program involves privately owned housing, paying a portion of the tenant's rent directly to the private landlord through a voucher or certificate issued to the tenant. Each of these programs is governed by federal laws and regulations, which include minimum standards that must be maintained in public or subsidized housing units. These federal standards are in addition to, not in lieu of, any state or local laws governing minimum housing conditions. 24 Code of Federal Regulations (CFR) 5.703(g). Local housing agencies receive federal aid to administer public and subsidized housing programs for HUD, and are responsible for ensuring that the units they own and manage, as well as those they subsidize, meet federal minimum standards. While these housing agencies are not responsible for the enforcement of local standards, they are responsible for maintaining the units they own in accordance with local law, as is the case with any property owner.

Public housing. Housing that is owned by a local housing agency or by another entity approved by HUD, must be maintained in accordance with the physical condition standards set forth in federal regulations. 24 CFR 965.601. The regulations contain specific requirements for determining whether housing is "decent, safe, sanitary and in good repair." 24 CFR 5.703. Some of these requirements address IAQ issues directly, while others relate more generally to IAQ problems.

Health and safety hazards. The regulations provide that: "All areas and components of the housing must be free of health and safety hazards." 24 CFR 5.703(f). In this regard, the regulations specifically mention:

- Air quality—this is noted as one area specifically included in the requirement;
- Mold—under the regulations, "the dwelling units and common areas must have proper ventilation and be free of mold;" and
- Infestation—in requiring that housing be free of health hazards, the regulations specifically state that the housing "must have no evidence of infestation by rats, mice, or other vermin. . . ."

Structurally sound and in good repair. The regulations provide generally that the building exterior, the building systems, and the dwelling units must be structurally sound, habitable, and in good repair. 24 CFR 5.703(b)-(d).

Local housing agencies are required to conduct inspections prior to occupancy, annually, and upon complaint, in order to ensure compliance with the HUD standards. HUD has developed a Uniform Property Condition Survey (UPCS) for use during inspections, though local housing agencies are free to develop their own forms consistent with the federal regulations. *See* HUD, "Public Housing Occupancy Guidebook" at 122. The UPCS checklist includes notations for "water stains/water damage/mold/mildew" in each room, as well

as a general notation of mold/mildew, and notations for sewer odors, insects/other vermin and plumbing leaks.

Subsidized Housing. HUD's regulations governing the Section 8 program include a set of "Housing Quality Standards" (HQS), which a unit must meet in order to qualify to receive assistance under the program. 24 CFR 982.401. The regulations contain certain specific and general provisions that are potentially relevant to indoor air quality problems.

Interior air quality. According to the regulations, the dwelling unit must be "free of pollutants in the air at levels that threaten the health of the occupants." 24 CFR 982.401(h). To meet this requirement the unit must be "free from dangerous levels of air pollution from carbon monoxide, sewer gas, fuel gas, dust, and other harmful pollutants." *Id.* In addition, the regulations require generally that there be "adequate air circulation" in the unit, and specifically that bathrooms have a window or other exhaust ventilation.

Sanitary condition. The unit and its equipment "must be free of vermin and rodent infestation." 24 CFR 982.401(m).

Sanitary facilities. Toilets and sinks must be in "proper operating condition." 24 CFR 982.401(b).

Combustion pollutants. The dwelling unit "must not contain unvented room heaters that burn gas, oil, or kerosene." 24 CFR 982.401(e).

Sound structure and materials. The dwelling unit must be structurally sound and "must not present any threat to the health and safety of the occupants and must protect the occupants from the environment." 24 CFR 982.401(g). Ceilings, walls, and floors must not have any serious defects, and the roof must be structurally sound and weathertight. In addition, the exterior wall structure and surface "must not have any serious defects . . . [including] defects that may result in air infiltration or vermin infestation." *Id.*

Local housing authorities use these standards to inspect units prior to providing assistance, annually and upon complaint. 24 CFR 982.401(a)(3). If any owner fails to correct a problem, the agency may withhold assistance payments; continued failure to comply with the standards may result in the tenant being forced to find a new unit that accepts and qualifies for the housing voucher. Department of Housing & Urban Development, *Housing Choice Voucher Program Guidebook* at 10-24 - 10-30, *available at* http://www.hudclips.org/sub_nonhud/html/pdfforms/7420g10.pdf (last visited: Feb. 18, 2003). The Inspection Checklist developed by HUD to ensure compliance with federal standards does not provide detail on the IAQ-related requirements; the form contains a box marked only "Interior Air Quality." *See* HUD, Form HUD-52580 (3/01).

Summary: Federal Law. While the requirements for both public and subsidized housing contain some specific IAQ-related provisions, federal guidance for implementing these requirements is fairly general. Responsibility for implementing the standards rests with local housing agencies, and thus will likely vary depending on the resources and guidance developed at the local level. As noted above, publicly owned and subsidized housing must comply with state or local housing laws as well. Thus, local PHAs have a potentially important role to play both as diligent property owner and in ensuring that properties they oversee are in compliance with the law.

The discussion of state and local law in the chapters that follow is therefore applicable to both public and private housing. The report notes any formal policy or practice adopted by a local housing authority that goes beyond the HUD standards outlined above. The report does not undertake a separate, general analysis of local housing agencies' inspection or maintenance programs to address indoor air quality. Such an analysis, while important, is beyond the scope of the report.

CHAPTER THREE
SAN FRANCISCO, CALIFORNIA

The city of San Francisco has a population of more than 776,000, according to 2000 census data. There are 346,527 housing units in the city, just over two-thirds of which are in multi-unit structures, and 61.2 percent of the total units are renter-occupied. At least 28 percent of renters pay 35 percent or more of their monthly income on rent. U.S. Census Bureau, Profile of Selected Housing Characteristics: 2000, *available at* http://factfinder.census.gov/bf/_lang=en_vt_name=DEC_2000_SF3_U_DP4_geo_id=16000US0 667000.html (last visited: May 30, 2003).

Enforcement of minimum standards for residential rental properties in San Francisco is governed by both state and local law. San Francisco is notable among U.S. counties and municipalities for having adopted legislation directly addressing mold in residential properties. Thus, with respect to indoor air quality problems, local housing and health ordinances provide the most explicit authority for enforcement. The city's separate health and housing agencies each play a role in housing enforcement and maintain informal coordination and communication in this area.

I. LEGAL FRAMEWORK

In San Francisco, state and local law set forth general and specific standards for rental housing and owner/tenant responsibilities for maintaining properties. San Francisco is unusual in having amended both its housing and health ordinances over the past two years to specifically include provisions governing mold in residential buildings. The state of California has also considered and enacted mold legislation, though these bills have not had yet had a major impact on housing code enforcement. For example, one of the more widely publicized state bills, the Toxic Mold Protection Act (SB 732), was signed into law on October 7, 2001. The law directs the Department of Health Services to consider the feasibility of adopting permissible exposure limits to mold in indoor environments, and to adopt such limits if feasible. The law also covers the development of standards for assessing and treating indoor mold. However, the bill states that the act "shall be implemented only to the extent that the department determines that funds are available for the implementation of this chapter." To date, the state has not made such funds available and the department has not taken action to implement the law.

Other bills considered by the state legislature have not been enacted. For example, Assembly Bill 178 (2002) would have required residential landlords to disclose hazardous levels of mold to tenants, and would have imposed a civil penalty for violations.

A. Housing Law

1. State Law: The State Housing Law, Cal. Health and Safety Code, Sections 17910-17998

Scope. The State Housing Law establishes minimum standards for residential buildings. Enforcement of the law is to be carried out by local housing departments or, if there is no such department, by the local health department. Health & Safety (H&S) Code § 17961. The law also provides that housing, health and environmental agencies may work together to enforce the standards, provided the agencies do not duplicate enforcement activities. *Id.* If local agencies fail to enforce the law, the state is empowered to take action. H&S Code § 17965.

IAQ-related provisions. The law establishes a variety of housing conditions that render a building "substandard" to the extent that the condition "endangers the life, limb, health, property, safety, or welfare of the public or the occupants." H&S Code § 17920.3. The code lists several categories of conditions that may render the property "substandard." The following general categories and conditions contained in Section 17920.3 of the code are potentially relevant to IAQ issues.

Sanitation. Under the law, the following conditions constitute inadequate sanitation and may cause a property to be cited by housing inspectors:

- dampness of habitable rooms;
- infestation of insects, vermin, or rodents; and
- general dilapidation or improper maintenance.

Section 17920.3 also lists as substandard those premises "on which an accumulation of weeds, vegetation, junk, dead organic matter, debris, garbage, offal, rodent harborages, stagnant water, combustible materials, and similar materials or conditions constitute fire, health, or safety hazards."

Nuisances. Nuisances are defined under a separate law, the California Civil Code as: "Anything which is injurious to health. . . or is indecent or offensive to the senses, or an obstruction of the free use of property. . . ." Cal. Civil Code § 3479. (See section IC below.)

Weathertightness. This category of substandard condition includes: (1) deteriorated or ineffective waterproofing of exterior walls, roof, foundations, or floors; and (2) broken, rotted, split or buckled exterior wall coverings or roof coverings.

General maintenance. The law also lists as substandard any "building or portion thereof that is determined to be an unsafe building due to inadequate maintenance, in accordance with the latest edition of the Uniform Building Code."

Enforcement. Inspections of buildings to determine compliance with minimum standards may be performed whether or not a complaint has been filed. The law states that enforcement "may, but need not, include inspections of existing buildings on which no complaint or permit application has been filed, and efforts to secure compliance as to these existing buildings." H&S Code § 17920(e). Moreover, the law authorizes the local enforcement agency to inspect any building "whenever necessary to secure compliance with, or prevent a violation of. . . ." the law. Cal H&S Code § 17970. After providing notice to correct a violation of the housing standards, the enforcement agency "shall. . .institute any appropriate action or proceeding to prevent, restrain, correct, or abate the violation or nuisance." H&S Code § 17980. The enforcement agency may order the property repaired, abate any nuisances, and seek court-ordered monetary penalties or imprisonment. H&S Code §§ 17980-17995.

2. Local law: San Francisco Housing Code

On September 17, 2002, the Board of Supervisors of the City and County of San Francisco adopted amendments to the local Housing Code. San Francisco Ordinance No. 192-02. The amendments, which took effect November 1, 2002, include provisions that directly address the problem of mold in multi-family housing.

Scope. The purpose of the San Francisco Housing Code (SF Housing Code), part of the municipal code, is to "provide for the maintenance of the minimum requirements for the protection of life, limb, health, property, safety and welfare of the general public and the owners and occupants of residential buildings in San Francisco." SF Housing Code § 102. The law focuses mostly on structural integrity and compliance with mechanical standards, including building, plumbing, and electrical regulations that affect the health of occupants. SF Housing Code § 102. The provisions governing substandard housing apply to existing buildings or portions thereof, used or intended for residential use. SF Housing Code § 103.

IAQ-related provisions. There are a number of specific, as well as general provisions of the code that address IAQ issues.

Substandard buildings. The definition of "substandard building" contained in the San Francisco Housing Code is similar to the one contained in the State Housing Law: "Any residential building or portion thereof. . . in which there exists any of the conditions enumerated in this Chapter to an extent that endangers the life, limb, health, property, safety, or welfare of the public or the occupants thereof." SF Housing Code § 1001(a).

As part of the definition of substandard building, the San Francisco Housing Code also lists essentially the same sanitary conditions and structural conditions provided under the State Housing Law noted above. *See* SF Housing Code §§ 1001(b), (c). For example, the Code includes "dampness" and infestation, as well as general dilapidation, defined as: "The condition of a building or a portion of a building characterized by holes, breaks, rot, crumbling, cracking, peeling, rusting, or other evidence of physical decay or neglect, or lack of maintenance, or excessive use." SF Housing Code § 401.

The definition of substandard condition under the San Francisco Housing Code, like the state counterpart, includes "nuisances." SF Housing Code §1001(d). The

Code's definition of nuisance, contained in Section 401, includes any public nuisance recognized by common law, as well as a number of general provisions that potentially may be applicable to IAQ problems:

- whatever is dangerous to human life or is detrimental to health;
- insufficient ventilation or illumination;
- insanitary conditions or anything offensive to the senses or dangerous to health;
- whatever renders air, food or drink unwholesome or detrimental to the health of human beings; and
- substandard buildings as defined in the Code.

In addition, the definition of nuisance in the San Francisco Housing Code includes "mold and mildew as defined by this chapter." SF Housing Code § 401. The code now defines mold and mildew as:

> Any visible or otherwise demonstrable growth of microscopic organisms or fungi (mold or mildew) that feeds on damp conditions in the interior of a residential building, sufficiently chronic or severe to cause a health hazard or damage a residential structure or part thereof, excluding the presence of mold or mildew which is minor in nature caused by inappropriate housekeeping practices or the improper use of natural or mechanical ventilation.

SF Housing Code § 401. Thus, the presence of "minor" mold deemed the result of inappropriate housekeeping or use of ventilation would not be a violation of the nuisance provision of the San Francisco Housing Code.

Painting and wall-papering. Section 1301 of the code addresses painting and also makes reference to the problem of mildew and dampness:

> The walls and ceiling of every room, lobby, entryway or hallway in an apartment house or hotel shall be well maintained. Repairs, paint or paper shall be applied as often as may be necessary to maintain clean and sanitary walls and ceilings free from mildew, dampness and vermin.

The 2002 revision to the code added the requirement of "repairs" to the previous requirements of painting or papering, in order to keep walls and ceilings free from dampness and mildew. In addition, Section 1303, which addresses wallpaper, provides that "wallpaper placed upon any wall, partition or ceiling of any room in any apartment house or hotel shall be well maintained, free of dampness and mildew."

Cleanliness and sanitation. Finally, the Code's general requirement relating to cleanliness and sanitation was also revised in 2002. Section 1306 now provides:

> Each room, hallway, passageway, stairway, wall, partition, ceiling, floor, skylight, glass windows, door, carpet, rug, matting, window curtain, water closet compartment or room, toilet room, bathroom, slop-sink room, wash room, plumbing fixture, drain, roof, closet, basement, yard, court, lot, and the premises of every building shall be kept in every part clean, sanitary, and free from all accumulation of debris, filth, rubbish, garbage, vermin, mold and mildew and offensive matter. Those portions of the residential building identified by this Section that can no longer by cleaned or made sanitary shall be replaced in an appropriate manner.

This provision was revised to both (1) specifically list the various portions of the premises that must be maintained in a sanitary condition or replaced, including carpeting, and (2) include mold and mildew as part of the requirement that the premises be maintained free from unsanitary accumulations. The Code thus elaborates significantly on the general sanitation requirement contained in the state housing law.

Enforcement The San Francisco Housing Code is administered and enforced by the Department of Building Inspection. SF Housing Code § 201. The Department is authorized to call upon other agencies, including the public health agency to assist in enforcing the Code; indeed the Code provides that it is the duty of other relevant agencies "to enforce the provisions of this Code and to perform such duties as may come within their respective jurisdictions." SF Housing Code § 201.

The Department of Building Inspection is authorized to inspect buildings periodically, and not less than once every five years. The Code provides that additional inspections within any year may be required, including those in response to occupant complaints. SF Housing Code § 302(a). Section 204 of the Code contains civil and criminal penalties for violations of the Code.

B. Landlord-Tenant Law

California state law establishes an implied warranty of habitability and provides tenant remedies for a landlord's violation of the warranty. The California Civil Code essentially codifies the implied warranty of habitability established by California courts. *See Green v. Superior Court*, 10 Cal. 3d 616, 637-638 (1974). The Civil Code's chapter titled "Hiring of Real Property" establishes the landlord's obligation to maintain the premises in a fit condition. Cal. Civil Code § 1941. The landlord must "put [the premises] into a condition fit for . . . occupation, and repair all subsequent dilapidations thereof, which render it untenantable . . . ." *Id.*

IAQ-related provisions. The implied warranty of habitability as established by the California courts is very broad, encompassing substantial compliance with state and local housing and health codes. *See Green v. Superior Court*, at 637-638. The Civil Code provides that if the dwelling lacks certain listed characteristics, it is deemed untenantable. Civil Code § 1941.1. The conditions most relevant to indoor air quality problems include the following:

- effective waterproofing and weather protection of roof and exterior walls;
- plumbing, gas or heating facilities maintained in good working order;
- building and grounds free from accumulation of debris, filth, rubbish, garbage, rodents and vermin;
- all areas under a landlord's control maintained in a sanitary and clean condition, free from accumulation of debris, filth, rubbish garbage, rodents and vermin.

Under the law, the landlord's duty to make repairs will not arise if the tenant is in "substantial violation" of a number of obligations set forth in the law. For example, tenants are required to keep the part of the premises they occupy as sanitary and clean "as the condition of the premises permits." Civil Code § 1941.2.

Enforcement. This law provides various remedies for tenants when a landlord fails to maintain the premises as required. In addition to "repair and deduct" and lease termination provisions, the law provides for the payment of actual damages sustained by a tenant when a landlord in violation of the law demands or collects rent under certain conditions. Civil Code §§ 1942, 1942.4.

C. Nuisance Law

1. State law: Cal. Civil Code, Sections 3479-3503

California's Civil Code defines a nuisance as: "Anything which is injurious to health. . . or is indecent or offensive to the senses, or an obstruction of the free use of property, so as to interfere with the comfortable enjoyment of life or property. . . ." Civil Code § 3479. As noted above, this definition is applicable to the determination of whether a building constitutes a nuisance under the State Housing Law.

For public nuisances (those that affect "an entire community or neighborhood, or any considerable number of persons"), the remedies established under the Civil Code are criminal prosecution, civil judicial action or abatement. Civil Code §§ 3480, 3491. Individuals harmed by a public nuisance may maintain a civil action. Civil Code § 3493. Remedies for a private (*i.e.*, non-public) nuisance are civil actions and abatement. Civil Code §§ 3481, 3501. Regulations implementing the State Housing Law also provide for enforcement when a building has become substandard and has been determined to be a nuisance, pursuant to the definition in the State Housing Law. 25 Cal. Code Regulations § 54. The regulations require that the portion of the building that is unfit for human habitation be vacated and that correction or abatement of the nuisance be ordered. *Id.*

2. Local law: San Francisco Health Code

Scope. The San Francisco Health Code (SF Health Code) states: "No person shall have upon any premises or real property owned, occupied, or controlled by him, or her, or it any public nuisance." SF Health Code, art. 11, § 581(a).

The code lists a number of conditions that are considered public nuisances, including "any buildings, structures, or portion thereof found to be unsanitary," SF Health Code, art. 11, § 581(b)(4), and any "pest harborage or infestation." SF Health code, art. 11, Sec. 581(b)(7). On June 15, 2001, San Francisco became one of the first cities to explicitly address mold by adding to its list of conditions constituting a public nuisance:

> Any visible or otherwise demonstrable growth of mold or mildew in the interiors of any buildings or facilities.

SF Health Code, art. 11, § 581(b)(6). The city's nuisance law thus creates a very broad basis upon which to

find that a building with mold contamination constitutes a public nuisance.

Enforcement. The health code requires the San Francisco Department of Public Health to inspect a building following receipt of a complaint that a nuisance exists. SF Health Code, art. 11, § 596(a). If the department determines that a nuisance exists, the agency is to issue a Notice to Abate to the responsible party. *Id.* According to the code, a property owner or manager, as well as any other person who created the nuisance may be deemed a responsible party. SF Health Code, art. 11, § 580. Following reinspection, if the nuisance is not abated and removed within the time period set forth in the notice, the department must either hold a hearing or abate and remove the nuisance as soon as practicable. SF Health Code, art. 11, § 596(g)(d). The ordinance establishes criminal and civil penalties for violations and for failure to comply with enforcement orders. SF Health Code, art. 11, § 600. The code further authorizes the city to order a building vacated until the nuisance is abated. SF Health Code, art. 11, § 596(g)(5).

D. Other Laws

1. Pesticide applications: California Business & Professions Code, Section 8538

State law requires that all registered structural pest control companies provide the owner and tenant of a property with "clear written notice" prior to application, including information about the pesticides used and a caution statement about health risks. Cal. Bus. & Prof Code §§ 8538(a),(b). In the case of a contract for periodic applications, the notice is only required at the initial application. *Id.* A separate state law requires that landlords of residential dwelling units provide a copy of this notice to each new tenant, if a contract for periodic pest control services has been executed. Cal. Civil Code § 1940.8. *See also* 3 Cal. Code of Regs 6618 (requiring property owners to give notice of pest control applications to any person likely to enter the property during the application or during any period of restricted entry).

2. Consumer protection: Cal. Business and Professions Code, Sections 17200-17210

California's unfair competition law addresses "any unlawful, unfair or fraudulent business act or practice. . . ." Bus. & Prof. Code § 17200. Under the law, the state or local enforcing agency may obtain injunctive relief, monetary penalties (up to $2,500 per violation, per day), and if the act affects a disabled or elderly person, an additional $2,500 penalty. Bus. & Prof. Code §§17206, 17206.1. The law may also be enforced by "any person acting for the interest of itself, its members or the general public." Bus. & Prof. Code § 17204. The law has been interpreted broadly to include claims against landlords for practices that violate state housing laws. *See e.g., Kraus v. Trinity Management Services, Inc.*, 96 Cal. Rptr. 2d 485 (Cal. 2000)(tenant action against property owner alleging illegal rental practices). Tenants or other plaintiffs filing suit under the unfair competition law "supplement the efforts of law enforcement and regulatory agencies," and "may obtain restitution and/or injunctive relief against unfair or unlawful practices in order to protect the public and restore to the parties in interest money or property taken by means of unfair competition." *Id.* at 492.

II. IMPLEMENTATION OF STATE AND LOCAL LAWS

A. Agency Jurisdiction

Overview of agencies with enforcement authority. The San Francisco Department of Building Inspection (DBI) is the city agency responsible for enforcing San Francisco's building, housing, plumbing, electrical and mechanical codes, as well as its regulations governing disability access. Within DBI is the Housing Inspection Services unit, which implements and enforces the San Francisco Housing Code. The DBI conducts inspections upon complaint, and also inspects apartment houses at least once every five years. According to DBI officials, following inspections of rental properties, the DBI issues a Notice of Violation, which is posted on the building and sent to the owner. The owner is given a specified amount of time to correct the violations and schedule a second inspection. If the landlord fails to comply, the case may be referred to the City Attorney's office for legal action.

The San Francisco Department of Public Health (DPH) is responsible for enforcing the local health code, including the nuisance provisions that apply to housing conditions. Within DPH, the Environmental Health Division responds to complaints about IAQ problems such as mold. According to health officials, a party receiving a notice of violation is given 7-30 days to correct the deficiencies, depending on the difficulty of the problem and the severity of the health hazard. If the responsible party objects, or refuses to comply, the case

will go to a director's hearing for a final administrative determination. If the responsible party still refuses to comply with the final order, the DPH may ask the City Attorney's office to seek compliance by bringing a civil enforcement action, which can include penalties and enforcement expenses.

Within the City Attorney's office, which handles legal matters for city agencies, is a Code Enforcement Division. The Division generally attempts to negotiate compliance before filing suit under the housing or health codes. According to Division officials, property owners enter into a settlement in the vast majority of cases.

Enforcement roles with respect to IAQ-related problems. Both the health and housing agencies receive complaints of sub-standard housing conditions relating to indoor air quality. According to health department officials, there is an informal referral relationship between the two agencies. In cases where a tenant makes a housing complaint involving alleged health effects, the health department will generally be called in. In some cases, both agencies may play a role in the same complaint.

According to the City Attorney's office, over 10 years ago an inter-agency task force was set up as a model program, to provide coordination in complex housing cases that may involve more than one agency. If the City Attorney's office receives such a complaint, it may schedule a code enforcement inspection by a task force that can include inspectors from any of several agencies (DPH, DBI, fire dept, police department, adult protective services, etc.). Each inspector looks for violations within the jurisdiction of his or her agency, and the City Attorney's office helps coordinate the response. The task force continues to conduct joint inspections and to hold regular meetings to share information and discuss cases.

B. Implementation of Housing and Health Laws

Department of Building Inspection. According to DBI officials, in cases involving mold contamination, inspectors look for a structural cause. The agency generally has cited mold as a violation if it is pervasive and has a likely structural cause. In cases where DBI cites a mold-related problem, inspectors may ask the property owner for a report—generally prepared by an industrial hygienist—on how they plan to abate the problem. DBI then asks for assurance that the mold has been eliminated and the structural problem repaired. If the mold is not pervasive, the inspector may be satisfied by visible improvement. If an inspector determines that a mold problem is caused by improper housekeeping, she or he will advise the tenant on how to cure the problem and prevent future problems.

DBI's emphasis on finding a structural cause for a mold problem reflects the agency's mission, and may also reflect some concern over scientific uncertainty regarding mold's health effects and over housing code language prior to the recent amendments. The mold-related provisions of the housing code were adopted in late 2002, and DBI officials indicate that the agency has not significantly changed its inspection practices with respect to mold since that time. Nevertheless, the current housing code language on mold is expansive—*e.g.*, requiring that virtually all components of a dwelling unit be maintained free from mold and mildew—and may provide clearer authority for DBI on a case by case basis to require that mold problems be addressed.

DBI officials note that the agency is authorized to cite pest infestation, but will refer very severe cases to the health department, in light of that agency's stronger program for addressing such problems. DBI occasionally receives complaints about tobacco smoke in multi-family buildings, but does not address those complaints through the code enforcement process. According to officials, the agency does not generally receive complaints relating to high radon levels.

Department of Public Health. According to officials, even before the recent amendments to the health code defining the presence of mold as a nuisance, health department inspectors responded to mold complaints in rental housing and enforced the code where the inspector judged the mold to be a threat to human health. City officials view the amendments as validating and reinforcing the department's enforcement policy. In addition to addressing mold, DPH policy and practice has long been to read the nuisance provisions broadly enough to allow them to cite other causes of IAQ problems as well, such as infestation of insects, vermin, or rodents. In cases involving infestation, the agency uses a hand-out for owners that encourages the use of baits and gels, rather than spraying, to address cockroach infestation.

The health department recently completed a project funded by the U.S. EPA in which the agency conducted home visits to families with asthma, in order to provide education as well as materials such as pillow cases and mattress covers. The project was also intended to shed light on the barriers asthma patients face in changing environmental conditions that could improve their health. Officials note that the project has been completed and the agency is reviewing the results, although home visits will be provided in cases where a physician

refers an asthmatic patient to the agency. Such home visits are not conducted for purposes of enforcement, and it remains up to the tenant to file a complaint with the department if the tenant wishes to pursue enforcement.

C. Enforcement-Related Activities By Non-governmental Organizations: The Code Enforcement Outreach Program

The Code Enforcement Outreach Program (CEOP) is a collaborative effort among the Department of Building Inspections, the San Francisco Apartment Association (SFAA), and four tenants advocacy organizations—St. Peter's Housing Committee, which works mainly in the Mission district, the Chinatown Community Development Corporation, the Housing Rights Committee of San Francisco, and the Tenderloin Housing Clinic. The program, which has been funded by DBI since 1996, aims to improve housing and health code enforcement in the city's rental properties, to facilitate needed repairs with minimal city intervention where possible, and to improve communication and cooperation between tenants and rental property owners. San Francisco Department of Building Inspections, CEOP materials (on file with Environmental Law Institute).

When the participating organizations are contacted by tenants with complaints about rental units, they try to work within the program to resolve conflicts and get problems fixed. Representatives of the organizations conduct informal inspections and site visits to judge the severity of a problem. They then assist the tenant in preparing and sending a form letter requesting that the owner fix the problems. On the reverse side of the letter is another letter from the DBI stating that if the owner does not comply, DBI can pursue enforcement. *Id.* In some cases the CEOP representatives will ask the SFAA to contact owners about fixing a problem. Only after they have tried these alternatives, will the organizations call upon DBI to pursue code enforcement.

The CEOP often receives complaints involving IAQ-related problems such as mold and mildew, rodent and insect infestation, dirty and moldy carpet, and inadequate ventilation. According to one organization participating in the program, the new explicit mention of mold and mildew in the housing code is expected to facilitate enforcement, as code enforcement officials can cite mold independently of the underlying structural causes. One obstacle noted by the organization is that landlords blame tenants for a wide range of problems, from moldy carpeting to infestation.

III. SUMMARY AND CONCLUSIONS

Legal authority. Public agencies in San Francisco have considerable legal authority for addressing IAQ problems. Although the State Housing Law does not provide a detailed list of minimum requirements, it does contain a few specific provisions governing dampness, infestation, and improper maintenance that are relevant to addressing indoor air quality. San Francisco's housing code contains many requirements typical of local ordinances, such as basic sanitation and pest control. As of 2002, the ordinance also provides more direct legal authority to address mold than most, if not all, other local jurisdictions in the United States.

The code now addresses mold in a variety of ways: by including mold in the definition of nuisances that may render a building substandard; by requiring repairs to walls and ceilings to keep them free from mildew; and by providing generally that buildings be maintained free of mold and mildew. The nuisance provisions explicitly exclude minor mold problems resulting from poor housekeeping or improper use of ventilation, while requiring that the mold be visible and demonstrable and "sufficiently chronic or severe to cause a health hazard or damage a residential structure or part thereof." However, while the nuisance provision is tied to health or property risks, the general building maintenance provision provides an exhaustive list of building components—structural elements as well as carpets and window curtains—that must be maintained mold-free. That provision further requires that any item that cannot be made sanitary must be replaced. The end result is ample authority to require property owners to address mold contamination, and a strong policy statement on the importance of adequate maintenance to prevent mold problems.

In addition to the housing code, San Francisco's health code prohibits public nuisances. The definition of public nuisance, which had already specifically included infestation, was amended in 2001 to include any visible or otherwise demonstrable growth of mold or mildew in the interiors of any buildings or facilities. This provision gives local health officials broad authority to require abatement of mold contamination within residential rental properties.

Officials from both the health and housing agencies view their legal authority as adequate to address a broad range of indoor air quality problems in rental housing. With respect to mold, officials suggest that the recent code amendments affirm and clarify, rather than change significantly, their authority. It is too early to determine

how, if at all, the city's code enforcement practices in addressing IAQ problems will change as a result of these new legal tools.

Inter-agency cooperation. For the most part, coordination between housing and health agencies on specific cases is informal, depending on which department receives the complaint and the nature of any health-related impacts. In general, the health department plays an active role in IAQ-related cases. With respect to problems such as pesticide use, secondhand smoke, radon, and pest infestation, the Department of Building Inspection usually refers cases to the health department, which has broader programs to address these issues. With the new mold provisions in the housing code, it seems likely that DBI will address a greater share of cases involving mold contamination.

The San Francisco City Attorney's office plays an interesting role in coordinating an array of city agencies to conduct joint inspections in complex housing cases. The long-standing interagency task force also meets regularly to discuss cases.

Obstacles to code enforcement. The strengthened legal authority in the city code will likely aid in code enforcement efforts. Yet a number of general institutional constraints present obstacles for addressing IAQ problems through the code enforcement process.

Shortage of affordable housing. The high cost of housing in San Francisco and the scarcity of affordable-priced units are well known problems. One result, according to the Code Enforcement Outreach Project, is that there are tens of thousands of rental units in San Francisco that are not legally certified for human habitation by DBI. Many of these units are converted garage, basement, and attic apartments that do not meet minimum standards (inadequate ventilation, low ceilings, etc.). Because the properties are illegal, if the CEOP refers a unit in such a property to the DBI, the property must be brought up to code, which can be very expensive if not impossible, or the unit must be vacated and the tenant evicted. Such illegal units are often the home of San Francisco's poorest residents and are likely to have some of the most serious health and IAQ-related problems.

Agency resources. Though legal authority has been enhanced, agency resources have not increased to address IAQ problems. Thus, the problem of poor indoor air quality in rental housing competes for limited resources with other housing and public health needs.

CHAPTER FOUR
BOSTON, MASSACHUSETTS

The city of Boston has a population of about 589,000, according to 2000 U.S. census data. There are 251,935 total housing units in the city, 83.5 percent of which are located in multi-unit structures. Nearly two-thirds of total housing units are renter-occupied, and just under one-third of renters spend at least 35 percent of their monthly income on rent. *See* U.S. Census Bureau, Profile of Selected Housing Characteristics: 2000, *available at* http://factfinder.census.gov/bf/_lang=en_vt_name=DEC_2000_SF3_U_DP4_geo_id=16000US2 507000.html (last visited: May 30, 2003).

State law provides the basic framework for addressing housing conditions in Boston. The state's housing and landlord-tenant laws establish a fairly extensive set of minimum sanitary conditions for housing, along with a wide array of public and private remedies for addressing violations. The city of Boston is notable for the range of governmental and non-governmental initiatives that are currently underway to improve housing conditions that affect occupants' health—initiatives that relate both directly and indirectly to the code enforcement process.

I. LEGAL FRAMEWORK

A. Law Governing Minimum Housing Conditions

In Boston, minimum housing standards are set by state law. The state's public health statute and implementing regulations set forth the standards of fitness for residential rental dwellings. Outside of specific issues such as lead-based paint and asbestos, the city of Boston has not adopted local ordinances or regulations addressing indoor air quality in residential properties.

1. State law: Mass. General Laws, Chapter 111

The state's public health statute, in its chapter governing nuisances, authorizes the state to adopt a sanitary code, including standards of fitness for human habitation. The code must "designate those conditions which, when found to exist upon inspection of residential premises, shall be deemed to endanger or materially impair the health or safety of persons occupying the premises." M.G.L. c. 111, § 127A. The state statute expressly provides that local boards of health are not precluded from adopting rules and regulations as necessary. *Id.*; 105 Code of Mass. Regulations (C.M.R.) 400.015.

The public health law further provides that local boards of health may take action if they find after inspection that a building "(a) is unfit for human habitation, (b) is or may become a nuisance, or (c) is or may be a cause of sickness. . . ." M.G.L. c. 111, § 127B. The law authorizes the local enforcing agency to require that the owner or occupant vacate the premises, put the premises into a clean condition, or comply with the housing code. If the owner fails to comply, the board may have the premises cleaned at the expense of the owner. *Id.*

In addition, a separate section of the state health law provides tenants with the right to enforce the sanitary code, where a housing inspection determines that violations of the code may endanger or materially impair the health, safety or well-being of a tenant and the landlord has failed to make repairs after receiving notice. M.G.L. c. 111, § 127L.

2. State health regulations: Code of Mass. Regulations, Title 105, Section 410.00—"State Sanitary Code: Minimum Standards of Fitness for Human Habitation"

Scope. The Massachusetts Department of Health has adopted regulations to implement the state law authorizing the establishment of the sanitary code. The regulations, known as the State Sanitary Code, set forth minimum standards that must be satisfied by residential properties within the state. Enforcement of the code is to be carried out by local agencies, which are required to inspect a dwelling upon request. 105 C.M.R. 410.820; 400.100. The state is authorized to enforce the law if local agencies fail to do so.105 C.M.R. 400.300.

Key IAQ-related provisions. The Sanitary Code contains a number of provisions that are potentially relevant

to addressing the causes or manifestations of indoor air quality problems. Following is a summary of the key IAQ-related provisions.

Dampness. The code defines "chronic dampness"as "the regular and/or periodic appearance of moisture, water, mold or fungi." 105 C.M.R. 410.020. The code addresses dampness by requiring that (1) below grade rooms subject to chronic dampness may not be used for habitation; and (2) the foundation, floors, walls, doors, windows, ceilings, roof, and other structural elements must be maintained *free from chronic dampness* and in watertight condition. 105 C.M.R. 410.402, 410.500.

Ventilation. The code provides for adequate ventilation by requiring specific minimum air changes per hour via natural or mechanical ventilation, as well as properly vented space heaters and water heaters. 105 C.M.R. 410.280, 410.202.

Plumbing. Owners must maintain plumbing free from leaks. 105 C.M.R. 410.351. Occupants are required to do the same for any equipment that they install. 105 C.M.R. 410.352.

Weathertightness. The code provides guidance as to what constitutes weathertightness and specifies that walls, floors, ceilings or other structural elements shall be considered weathertight only if all cracks and spaces not part of the HVAC systems are caulked or filled in as to prevent infiltration of exterior air or moisture. 105 C.M.R. 410.501.

Non-absorbent surfaces. The code requires smooth, noncorrosive, nonabsorbent and waterproof floor covering in bathrooms and kitchens. 105 C.M.R. 410.504. The code specifically does not prohibit the use of carpeting in these rooms, provided that the carpeting contains "a solid, nonabsorbent, water repellent backing which will prevent the passage of moisture through it to the floor below. . ." *Id.*

Infestation. In general, the owner of any dwelling containing two or more units must keep the premises free from rat, cockroach and insect infestation and is responsible for pest extermination.105 C.M.R. 410.550. In addition, the owner must maintain structural elements to avoid insect or rodent harborage. 105 C.M.R. 410.500.

Pesticide use. While the code allows extermination by any "recognized and legal pest elimination method," the code addresses potential health effects from pesticide use by establishing that all use of pesticides within a building must be in accordance with state law governing pesticide applications. 105 C.M.R. 410.550(D). The code specifically references state pesticide application regulations (see section ID below.)

Enforcement. Following inspection, local enforcement agencies are required to issue an order to the owner or occupant of a dwelling that is not in compliance with the code, requiring the party to make a good faith effort to correct the violation within the time periods specified in the code. 105 C.M.R. 410.830. Parties who violate the provisions of the code or who fail to comply with an order issued under the code are subject to monetary fines specified in the code, as well as to enforcement at law or equity in the same manner that other local rules and regulations are enforced. 105 C.M.R. 400.200; 410.900-410.920. Under certain circumstances, the local enforcement agency may correct violations and recover expenses and any penalties. 105 C.M.R. 410.960.

B. Landlord/Tenant Law

Massachusetts common law establishes a landlord's implied warranty of habitability and the measure of damages that tenants may receive for breach of that warranty. *See Boston Housing Authority v. Hemingway*, 293 N.E.2d 831 (Mass. 1973). The state statute governing summary process in landlord-tenant matters establishes in detail the right of a tenant to raise as a defense or counterclaim to eviction any breach of warranty or violation of another law. M.G.L., c. 239, § 8A. In addition, state statutes establish a variety of enforcement mechanisms tenants can use to seek correction of housing code violations.

As noted above, the state public health law that establishes the Sanitary Code gives tenants the right to bring an action to enforce the code, including any IAQ-related violations, to the extent that violations were caused by the tenant. M.G.L. c.111, § 127L. The law provides tenants with a "repair and deduct" remedy (*i.e.*, the right to withhold from their rental payments an amount necessary to pay for such repairs), as well as the right to treat the lease as abrogated and vacate the premises. M.G.L. c. 111, § 127L. In addition, the law allows tenants to petition to pay rent to the court rather than to the landlord, and provides for the court to disburse these funds to the landlord or other party (includ-

ing a court appointed receiver) for the purpose of making the needed repairs. M.G.L., c. 111, § 127F.

Additionally, the state's real property law contains a provision that prohibits landlords or lessors from "directly or indirectly interfer[ing] with the quiet enjoyment of any residential premise by the occupant. . . . M.G.L., c. 186, § 14. This provision has been interpreted to cover situations involving a landlord's failure to maintain the premises. *See, e.g., Darmetko v. Goston Housing Authority*, 393 N.E. 2d. 395 (Mass. 1979). Tenants who file successful claims can potentially receive actual and consequential damages or three months' rent, whichever is greater, plus the costs of the action (including attorney's fees).

The same law also provides tenants with a right to pursue a tort action against a landlord who failed to correct an unsafe condition in the property, after having received notice from the tenant. M.G.L., c. 186, Sec. 19. This notice requirement is satisfied by the issuance of a citation from a housing inspection agency for violation of the state Sanitary Code. *Id.*

C. Nuisance Law

The state public health law authorizes a local board of health to "examine into all nuisances, sources of filth and causes of sickness" that may be "injurious to the public health" and to adopt regulations in this area to protect the public health. M.G.L. c. 111, § 122. The law charges local boards of health with ordering the abatement of nuisances and authorizes the local boards to undertake the abatement themselves and recover costs from the responsible party. M.G.L. c. 111, §§ 124, 125.

In addition, the law's chapter on "common nuisances" authorizes the aldermen or selectmen of any city or town to issue an order to the owner of a "burnt, dilapidated or dangerous building" declaring the building a nuisance and requiring action to address the nuisance. M.G.L. c. 139, §1. The law gives the officials power to abate the nuisance and recover costs, and provides that violations are punishable by fines and imprisonment. M.G.L. c. 139, § 3.

The state's public health law also requires the state health department generally to "conduct sanitary investigations and investigations as to the causes of disease. . . ." M.G.L. c.111, § 5.

D. Other Laws and Policies

1. Pesticide applications: Code of Mass. Regulations, Title 333, Section 13.10

Regulations of the state Pesticide Board govern commercial applications of pesticides to indoor settings. The regulations require generally that such applications (excluding antimicrobials, enclosed baits and traps) (1) be made in a manner which "minimizes exposure to humans and pets; (2) use equipment that is in sound condition; and (3) be performed so as to protect items that come in contact with food. 333 C.M.R. 13.10 (2). The regulations also specifically require applicators to pre-notify occupants of residential units between seven days and 48 hours prior to any routine commercial application of pesticides. 333 C.M.R. 13.10(3)(b). The notice must contain the date of application and information about minimizing exposure. *Id.* Applicators are also required to notify residents of the location of any bait stations containing rodenticides. 333 C.M.R. 13.10(3)(a). The regulations further require applicators to provide information about the pesticide application to the party requesting the service. *Id.* As noted above, the Sanitary Code requires compliance with this regulation, thereby providing a potential opportunity for housing and health officials to help ensure that the state's protections governing pesticide notification are met.

2. Environmental Tobacco Smoke: Mass. General Laws, Chapter 270

State law does not directly address smoking in residential buildings. The state criminal code prohibits smoking in any public building owned by a state agency or political subdivision, except in areas that have been specifically designated as smoking areas; however, the law does not directly address obligations of the owners of such buildings. M.G.L. c. 270, §§ 22, 21.

3. Consumer protection: Mass. General Laws, Chapter 93A

State law declares that "unfair or deceptive acts or practices in the conduct of any trade or commerce" are unlawful, and provides for enforcement by both the government and affected consumers. M.G.L. c. 93A, §§ 2, 4, 9. The law is broad in scope, and covers violations by landlords of state housing laws; indeed, unfair or deceptive acts or practices claims are commonly included in cases involving a landlord's alleged violations of the war-

ranty of habitability. *See, e.g., Haddad v. Gonzalez*, 576 N.E. 2d 658 (Mass. 1991); *Cruz Management Co., Inc. v. Thomas*, 633 N.E.2d 390 (Mass. 1994). Tenants and other plaintiffs who are successful may obtain actual damages and injunctive relief; treble damages are available for willful and knowing violations. M.G.L. c. 93A, § 9(3).

4. Publicly owned and subsidized housing

The Boston Housing Authority is a public agency that is managed and controlled by an administrator appointed by the Mayor of Boston. *See* Mass. General Laws, c. 121B, Chapter 88 of the Acts of 1989. Through its public housing programs and its administration of federal Section 8 and state rental assistance programs, the BHA owns about 14,000 units and houses about 10 percent of the city's residents. *See generally* http://www.bostonhousing.org/ (last visited: May 30, 2003). In addition, a separate agency, the Metropolitan Boston Housing Partnership, administers Section 8 vouchers in Boston and the surrounding metropolitan area.

According to BHA officials, as well as other governmental and non-governmental officials, the legal requirements applied to housing conditions in subsidized housing are essentially the same as those applied to non-subsidized housing. According to the BHA, the Section 8 voucher program "requires little beyond that which is required by law. The BHA will inspect the apartment and make sure that it is in compliance with Chapter II of the State Sanitary Code, including laws regarding lead paint compliance once a year." *See* BHA, Rental Assistance: Common Questions from Owners *available at* http://207.190.209.100/detpages/busopp106.html (last visited: May 30, 2003). In a list of common items that will cause an apartment to fail an inspection, the BHA lists several basic provisions of the state Sanitary Code, as well as the requirements that "tub and shower walls must be waterproof with no loose or missing tiles and must be free of mold or mildew." *Id.* Public housing residents generally contact the BHA with a complaint about a housing condition, and they may also call the city's health or housing agency for an inspection. For Section 8 properties, officials note that housing code enforcement generally proceeds along the same lines as non-subsidized housing.

II. IMPLEMENTATION OF STATE AND LOCAL LAWS

A. Agency Jurisdiction

Overview of agencies with enforcement authority. Primary housing code enforcement rests with the city's Inspectional Services Department (ISD). In addition, the Public Health Commission plays a role in conducting housing inspections and pursuing enforcement actions where property owners fail to correct violations.

The Inspectional Services Department is a city agency comprised of a number of inspection units, including housing, food, planning and zoning, and weights and measures. Within ISD, there are 40 housing inspectors with expertise in various aspects of building design and construction. The ISD implements the state Sanitary Code for rental housing and inspects properties mainly in response to complaints. (From time to time, the agency may conduct inspections pursuant to area-wide initiatives focusing on certain neighborhoods or certain types of housing.) In most non-emergency situations, inspectors conduct a general inspection of the premises, rather than an inspection for one or more isolated problems.

After ISD inspectors cite a property the owner is usually given up to 30 days to fix the problems, and then a reinspection is performed. Where owners fail to comply with agency orders, the ISD has authority to file a case in court through its own attorneys or through the Boston City Attorney's Office. According to agency officials, most owners ultimately comply with orders prior to the time a case reaches a judge, often negotiating with the city for time to complete the repairs prior to the date a case is heard in court.

The Boston Public Health Commission (PHC), which describes itself as the nation's first public health department, administers a wide variety of public health programs. The PHC's Office of Environmental Health, created with the formation of the agency's lead program, has broad expertise in a range of environmental health protection matters.

The PHC has authority under state law and regulations to abate nuisances and to issue abatement orders. The PHC may require abatement if it finds that a dwelling is "unfit" or that it may constitute a public nuisance. According to health officials, the PHC cites both the state Sanitary Code and the state nuisance law, depending on the nature of the housing problem.

The PHC's Office of Environmental Health conducts housing inspections on a complaint basis. The agency receives calls from individual tenants as well as

from members of the medical community and non-profit organizations that assist tenants. When an owner does not comply with an abatement order, the PHC can file a case in court. According to PHC officials, this usually results in the owner complying and the case being dismissed. In most cases, there is no fine applied.

2. Enforcement roles with respect to IAQ-related problems

Both the ISD and the PHC use their authority under state law to pursue enforcement in cases where housing violations affect indoor air quality and the health of occupants. Both agencies receive complaints from tenants, and there does not appear to be any formal protocol or mechanism for determining which agency will handle a particular type of IAQ-related case. According to PHC officials, over time the agency has assumed a greater role in addressing a number of health-related housing issues, such as lead-based paint, asbestos, and chemical spills, and this has come to include indoor air quality as well. The PHC has at its disposal an array of testing equipment, and does a considerable amount of air monitoring. PHC officials emphasize that working closely with ISD on structural building issues facilitates health protection. Similarly, officials at the Inspectional Services Department affirm that ISD can be more effective when the resources of the Public Health Commission are brought to bear on a housing problem that may be affecting the health of occupants. The two agencies work together informally and formally in a variety of matters.

B. Implementation of Housing and Health Laws

Inspectional Services Department. Officials within ISD indicate that there is adequate authority in the state Sanitary Code for the agency to address mold and other IAQ issues. The provisions most frequently cited by inspectors are those noted above governing chronic dampness, leaks, infestation, and the requirement of properly functioning exhaust systems. One gap in the code, according to officials, is the absence of a provision requiring outside venting of gas appliances. On the other hand, officials note that the provision governing "conditions deemed to endanger or impair health or safety" (105 C.M.R. 410.750) is flexible enough to be applied to problems affecting health. Use of this provision arises most often in connection with inspections under the agency's "Breathe Easy at Home" program.

Breathe Easy At Home (BEAH) program. This program began around 1996 and serves as a mechanism for separating out and tracking housing cases that involve families with members who have been diagnosed with severe asthma. According to program materials, the goal of BEAH is: "To provide assistance to families and individuals who have been diagnosed with severe asthma, by utilizing the State Sanitary Code to address violations that are known to be contributing factors for asthma and other respiratory ailments." Inspectional Services Department, BEAH program presentation materials (on file with the Environmental Law Institute). After receiving a call from a doctor, social worker or other health advocate, ISD conducts an inspection that focuses specifically on violations that could be asthma triggers—*e.g.*, leaks, chronic dampness, exhaust system malfunctions, and infestation. Inspectors also identify conditions that may not be violations (*e.g.*, unvented gas stoves), but that could be changed through information or education.

According to ISD officials and BEAH program materials, the following examples illustrate how the program seeks to address specific IAQ-related problems:

- Moldy bathroom walls: This may be consdiered evidence of chronic dampness, which is prohibited by the Sanitary Code. ISD could order cleaning of the mold on the walls, abating the source of the dampness and repairing the damage. If the bathroom lacks proper ventilation, ISD could order installation of a window or of a ventilation system that provides five air changes per hour.

- Leaking living room ceiling: This may be considered evidence of chronic dampness and leakage, which are prohibited under the Sanitary Code. ISD could order repair of the leak, replacement of water damaged dry wall, and fixing the source of the leak.

- Evidence of rodent infestation: This would also be considered a violation of the Sanitary Code, and ISD could order extermination, sealing of all entry holes, and cleaning/sanitizing of all affected areas.

In addition to applying the Sanitary Code to correct violations, a stated focus of the program generally is to educate landlords and tenants about how their practices affect health. Under the program, the ISD will send out a cover letter to the owner (along with the citation of violations) that explains the problems and what is needed to correct them. Inspectional Services Department,

BEAH program presentation materials (on file with the Environmental Law Institute). According to the agency, the BEAH program seeks to be specific in communicating what the problem is, where the problem is, and how it can be corrected. The letter sent to owners urges the owner to contact the agency within 10 days for a BEAH meeting. Ultimately, ISD may pursue the case through the regular enforcement channels if owners do not take appropriate action. *Id.*

ISD officials note that the program recently has sought to work more closely with the Public Health Commission and non-governmental public health groups to improve referral systems and to review high priority cases.

Public Health Commission. According to PHC officials, the agency's mission is health hazard prevention, and the agency can and does use its general nuisance authority to address IAQ problems. Inspectors use federal, state or industry guidance documents (*e.g.*, New York City's mold guidance, EPA's Tools for Schools materials) in determining whether particular buildings or problems should be cited as nuisances. In general, PHC inspectors do not perform mold sampling in routine cases, but rather they look for sources of water and determine how best to remove them.

Even where the complaint doesn't mention mold or another IAQ problem specifically, the PHC sometimes finds such a problem while in the building. According to officials, an inspection may result in code enforcement, information dissemination, or both. Code enforcement may occur when an inspector finds a violation such as mold contamination, peeling paint or crumbling plaster. In some cases, it is not clear whether the source of an IAQ problem can be cited as a code violation. For example, a PHC inspector may find elevated carbon monoxide levels; if further investigation reveals defective ventilation equipment, an enforcement order may be issued. Where housing conditions may be potential asthma triggers, but are not code violations—*e.g.*, the existence of wall to wall carpeting, cigarette smoking, or pets—inspectors may offer information to the tenant or landlord.

The PHC has a grant from the Centers for Disease Control and Prevention to conduct comprehensive inspections in certain homes, for NO_2, CO, CO_2, particulates, VOCs, etc. The PHC then advises the owners and tenants on steps they should take to address IAQ problems. The program is voluntary and owners decide whether to follow through on PHC recommendations, although if PHC finds an imminent hazard the agency is required to take action. Participants get free HEPA vacuums and air conditioning units. Officials note that the program seems to be working best in very large buildings with systemic, but not very expensive problems. The health complaints seem to be going down in such buildings. In small buildings where one or two people may be affected, it is harder for the agency to gauge whether the home environment is triggering the problem, and interventions may not produce clear results.

The PHC is also one of several governmental and non-governmental organizations participating in Healthy Public Housing, a HUD-funded, five-year program to identify, document and reduce indoor environmental hazards in public housing, particularly those associated with asthma and respiratory illness. The project will involve resident surveys of two public housing complexes; further testing and monitoring of the properties; and a range of interventions including capital improvements, revised property management and pest control practices, education and health management. Harvard School of Public Health, Healthy Homes Project Description, *available at* http://www.hud.gov/offices/lead/hhi/Harvarddoc.pdf (last visited: January 30, 2003).

Interagency cooperation efforts. While there does not appear to be a formal inter-agency approach to enforcement in IAQ-related housing code cases, there are a variety of efforts underway to ensure coordination and communication among the agencies responsible for enforcement.

One inter-agency initiative in which both agencies participate, the Boston Environmental Strike Team (BEST), conducts inspections to address a variety of environmental health threats, including solid waste facilities, illegal dumpster lots, etc. While BEST does not usually inspect homes, it may address off-site problems that can affect IAQ in homes. Moreover, officials note that the BEST collaboration has served the PHC and ISD well when those agencies conduct residential inspections outside the BEST program.

As noted above, the ISD considers inter-agency collaboration to be instrumental to its BEAH initiative. According to agency officials, it is important that resources outside of ISD be tapped in addressing housing conditions that affect residents' health. Officials note that in particular, certain cases of suspected mold contamination can be more effectively assessed by the Health Department, which may also have healthy homes project funds that can help carry out necessary work on units. For complex cases, both the PHC and the ISD

may jointly investigate a case. Alternatively, one agency may refer its findings to the other.

According to Public Health Commission officials, the PHC has been meeting with ISD and the Boston Housing Authority to discuss formal and informal approaches to identifying the causes of IAQ-related problems that are found in residential properties. The PHC, whose broad public health mandate informs its approach to housing inspections, is seeking to advance understanding of environmental triggers of asthma and other health problems, and is promoting investigation into the causes of such housing problems. For example, PHC officials are working with ISD and the BHA to develop better means of addressing pest control practices from the perspective of asthma control. The PHC also conducts trainings, such as a recent day-long training for all ISD inspectors on using the Sanitary Code to address asthma triggers. According to PHC officials, the training emphasized the importance of inspectors' identifying the proper approach to remedying code violations to address the underlying problem.

C. Enforcement-Related Activities of Non-governmental Organizations: The Legal Services Center's Healthy Homes and Environmental Justice Project

The Hale and Dorr Legal Services Center, a general practice law office and clinical learning center affiliated with Harvard Law School, provides free legal representation to low- income residents in areas including housing, family, and consumer matters. The Center's Healthy Homes and Environmental Justice project, created in 1999, seeks to address housing conditions that affect tenants' health, with particular emphasis on lead poisoning and asthma. Another goal of the project is to raise awareness within the judicial system of the relationship between housing conditions and health. *See* http://www.law.harvard.edu/academics/clinical/Prereg/PlaceBk/Clinics/lsc.html#Housing (last visited: January 16, 2003).

According to project staff, screening for asthma and other respiratory illnesses is done as a routine component of client intake at the Legal Services Center, and the healthy homes project will investigate whether there is a housing condition related to the identified health problems. The principal indoor air quality problem involved in these cases is mold, although rodent and insect infestation are also significant problems. If such housing code violations exist, the Center will generally either file an affirmative lawsuit to address the conditions or will present the sub-standard condition as a defense to eviction proceedings, depending on the case.

III. CONCLUSIONS/OBSERVATIONS

Legal authority. Massachusetts laws are generally strong in establishing minimum housing conditions and providing mechanisms for their enforcement. The state Sanitary Code contains the basic elements found in many such codes—for example, requirements for preventing and treating pest infestation, maintaining weathertightness, and ensuring general sanitation. The code also contains items that provide a more direct basis for addressing IAQ problems. For example, the code requires leak-free plumbing, and mandates that structural elements (floors, walls, ceilings, etc.) be maintained free from chronic dampness, defining that term to include "the regular and/or periodic appearance of moisture, water, mold or fungi." The code also requires non-absorbent and water proof floor coverings in bathrooms. Another notable feature of state law is the requirement that residents receive advance notice of pesticide applications. While this is not a direct responsibility of the owner, the Sanitary Code does require that all pesticide use within a residential building be in compliance with this state law.

The city agencies that are charged with enforcing the law feel that for the most part, they have adequate legal authority to address indoor air quality through the specific provisions of the housing code or the general health/nuisance authorities, and that they do in fact use those provisions on a regular basis. State law also establishes strong tenant protections, and provides for tenant enforcement of the Sanitary Code through a variety of legal causes of action and remedies.

Inter-agency coordination. Both the housing inspection agency and the Public Health Commission play an active role in conducting housing inspections in cases involving IAQ-related problems. Both agencies conduct inspections in response to complaints they receive, and there is not a formal division of responsibilities between the agencies. The PHC has assumed increasing responsibility in IAQ-related cases over the past several years – in pursuing enforcement directly, in providing informal consultation on individual cases, and in providing training and general information to housing inspectors. Both agencies underscore the importance of working together.

Notable enforcement initiatives. Two initiatives underway in Boston are particularly noteworthy for

using the enforcement process to address indoor environmental triggers of asthma and other health problems. The Inspectional Services Department's Breathe Easy at Home program responds to medical referrals and has identified particular aspects of the law that may be enforced to address IAQ-related problems in the homes of those with severe cases of asthma. In addition, the Legal Services Center's Healthy Homes and Environmental Justice project provides legal representation for low-income tenants that is focused on using law to address indoor environmental triggers of asthma and other diseases. The program serves an important citizen enforcement and agency oversight role.

In addition to these enforcement approaches, there is considerable interaction among the city's enforcement agencies, the Boston Housing Authority, and non-governmental organizations on non-regulatory healthy homes projects aimed at improving conditions in rental properties. While the programs do not include an enforcement component, they do have the potential to educate both owners and city agencies about the nature and extent of indoor air quality problems in rental housing. For example, the work of the Boston Medical Center is important in connecting enforcement resources with families suffering from asthma and other health problems.

These varied efforts are no doubt helping to improve housing conditions. The challenge is to maximize coordination among the parties and ensure that the lessons learned from these efforts help to strengthen the work of the city's health, housing, legal and judicial officials in this area.

Challenges. Although state law provides substantial authority for addressing mold and other IAQ-related problems in multi-family housing, there are no laws, regulations or formal guidance documents that mandate procedures for remediating problems such as mold. Thus, while local agencies and courts do order problems corrected, the absence of such requirements or guidelines makes it less likely that the underlying cause of the problem will be adequately remedied.

In addition to the absence of guidelines, access to the legal system presents a barrier to using the code enforcment process. City prosecution of violators is a very long process, which may make prosecution an option of limited value for families suffering health problems resulting from poor housing conditions. In addition, housing advocates point to a shortage of legal representation for lower income tenants as a major obstacle for enforcing state standards. Thus, while state laws provide tenants with considerable legal recourse, if a tenant is not represented, his or her chances of prevailing are greatly reduced.

CHAPTER FIVE
SEATTLE, WASHINGTON

The city of Seattle has a population of over 563,000, according to the 2000 U.S. Census. Nearly half of the city's 258,000 housing units are in multi-family buildings, and 51.6 percent of the total units are renter-occupied. Thirty percent of those who rent their homes pay at least 35 percent of their income in rent. *See* U.S. Census Bureau, Profile of Selected Housing Characteristics: 2000, *available at* http://factfinder.census.gov/servlet/QTTable?ds_name=D&geo_id=16000US5363000&qr_name=DEC_2000_SF3_U_DP4&_lang=en (last visited: May 30, 2003).

Housing and health standards for rental housing in Seattle, as well as the mechanisms for enforcing those standards, are contained in laws and regulations at both the state and local level. State and local housing codes set forth general and specific minimum conditions. State landlord-tenant law establishes landlord and tenant responsibilities and provide tenants with legal recourse if a landlord fails to maintain the premises as required by the statute. Nuisance laws at the state and local level establish general provisions that may be applicable to serious IAQ-related problems.

In Seattle, the housing inspection agency has primary responsibility for investigating and citing deficient housing conditions. The health department's activities in the IAQ arena are mainly non-regulatory in nature, though the agency does provide support and information on IAQ problems to housing inspectors, as well as to landlords and tenants.

I. LEGAL FRAMEWORK

A. Housing Law

In Seattle, housing code enforcement is governed primarily by local law, which has been enacted within the general framework of state housing and landlord tenant laws.

1. State law: Revised Code of Washington, chapter 35.80

Scope. This state law authorizes local governments to adopt ordinances to investigate and address the problem of "unfit buildings." Under such ordinances a local government "may determine that a dwelling, building, structure, or premises is unfit for human habitation . . . if it finds that conditions exist. . .which are dangerous or injurious to the health or safety of the occupants. . . ." or of others in the municipality. Revised Code of Washington (R.C.W.) 35.80.030(1)(d). The conditions to be covered by such ordinances include "inadequate ventilation, light, or sanitary facilities, dilapidation, disrepair, structural defects, uncleanliness, overcrowding, or inadequate drainage," and the ordinances are to provide minimum standards covering these conditions. *Id.* Local ordinances are also to provide for the issuance of an order requiring property owners to repair the premises or requiring that the premises be vacated. R.C.W. 35.80.030(1)(f). In general, the state law provides that any municipality may

> prescribe minimum standards for the use and occupancy of dwelling. . . . prevent the use or occupancy of any dwelling, building, structure, or premises, which is injurious to the public health, safety, morals, or welfare, and. . .prescribe punishment for the violation of any provision of such ordinance.

R.C.W. 35.80.030(7).

2. Local Law: Seattle Municipal Code, title 22 (Seattle Housing and Building Maintenance Code)

Two separate sections of Seattle's Housing and Building Maintenance Code address minimum housing standards. The first sets forth standards for habitable

buildings, and the second sets forth standards for the city to declare a building unfit for human habitation.

a. Standards for habitable buildings: Seattle Municipal Code 22.206

Scope. Seattle's Housing and Building Maintenance Code contains a section on "Habitable Buildings," that sets forth the minimum standards for all rental housing within the city. The Code requires the Seattle Department of Design, Construction and Land Use (DCLU) to inspect a building if the agency has reason to believe it may not be in compliance with the requirements set forth in the Code. S.M.C. 22.206.220.

IAQ-related provisions. Seattle's housing code contains a number of general and specific provisions that may be applicable to various IAQ-related housing problems. In general, owners must maintain the building in compliance with these minimum standards. 22.206.160(7). Tenants are required to maintain in a clean and sanitary condition the parts of the premises that they occupy or control. S.M.C. 22.206.170A.

Sanitation and good repair. The code requires that "all appurtenant structures, floors, floor coverings, interior walls and ceilings shall be kept in a safe, sound and sanitary condition and in good repair." S.M.C. 22.206.080(B). The landlord must remove anything "imminently hazardous to the health, safety or general welfare of the occupants or the public, or which may substantially contribute to or cause deterioration of the building to such an extent that it may become a threat" to health, safety or welfare. S.M.C. 22.206.160(A)(4). The code further mandates that all mechanical facilities, fixtures, and equipment be maintained in safe condition. S.M.C. 22.206.120.

Ventilation. Every room must have either windows or artificial ventilation systems. S.M.C. 22.206.040. Ventilation equipment must be of a type that is industry-approved or specifically approved by the city, and must be maintained. S.M.C. 22.206.100, 206.040, 206.020(C). In addition, underfloor areas must have "adequate ventilation." S.M.C. 22.206.080D.

Plumbing. The code requires all sanitary facilities, fixtures, and equipment to be maintained in a "safe and sanitary condition, and in good working order." S.M.C. 22.206.050.

Weathertightness. The housing code contains a general provision addressing water intrusion and dampness: "Every foundation, roof, exterior wall, door, skylight, window, and all building components shall be reasonably weathertight, watertight, damp-free, and rodentproof, and shall be kept in a safe, sound, and sanitary condition and in good repair." S.M.C. 22.206.080A. In addition, property must be "graded and drained" and "free of standing water." S.M.C. 22.206.080H.

Infestation. As indicated above, buildings must be maintained reasonably "rodentproof," S.M.C. 22.206.080, and landlords must "exterminate insects, rodents, and other pests, which are a menace to public health, safety, and welfare." S.M.C. 22.206.160- 3. The code also contains a provision on "toxic materials" that potentially applies to the use of pesticides in rental housing.

Toxic Materials. Pursuant to the housing code, toxic paints and other toxics "shall not be used in areas readily accessible to children." S.M.C. 22.206.080.

Nuisance. The housing code contains a general nuisance provision authorizing the city to take action to abate violations of the code that remain uncorrected after imposition of a civil penalty and that constitute threats to the public health, safety or welfare. S.M.C. 22.206.310.

Enforcement. Following an inspection of the property that reveals violations of the code, DCLU is directed to serve a notice of violation on the owner and/or other person responsible. S.M.C. 22.206.220A. DCLU also is authorized to issue an Emergency Order to repair or vacate a building that is an imminent threat to health or safety, and the agency can repair the building at the owner's expense if the owner does not comply with the Emergency Order. S.M.C. 22.206.260A, 206.260E. Where violations are not corrected, the code authorizes civil monetary penalties in actions brought by the City Attorney. S.M.C. 22.206.280. The code also provides for criminal penalties for violation of certain provisions, as well as for "any pattern of wilful, intentional, or bad-faith failure or refusal to comply with the standards or requirements" of the code. S.M.C. 22.206.290(B)(3). The DCLU may seek legal or equitable relief in court to enjoin actions and abate conditions that constitute violations when civil and criminal penalties are inadequate. S.M.C. 22.206.300A. In addition, the DCLU or tenants

can seek to have a court appointed receiver take over management of the building if it is unfit for habitation or constitutes a menace or hazard. S.M.C. 22.206.300B.

b. Standards for declaring a building unfit for human habitation: Seattle Municipal Code 22.208

A separate section of the Seattle Municipal Code contains minimum standards for the city to declare a building unfit for human habitation. As noted above, Seattle's housing code contains a general nuisance provision, stating that buildings "in which violations of this chapter remain uncorrected after a civil penalty has been imposed. . .and which violations create a fire hazard or a menace to the public health, safety or welfare of the public, are hereby declared public nuisances and may be abated." S.M.C. 22.206.310. The code authorizes the DCLU, with approval of the City Council, to abate the nuisance and collect the costs from the owner. *Id.*

In addition, Seattle's housing code contains a section establishing criteria for declaring a building "unfit for human habitation." S.M.C. 22.208. This section provides generally that buildings are unfit where certain conditions exist that endanger the "health or safety of the occupants, of the occupants of neighboring buildings or structures, or the public." S.M.C. 22.208.010. The following specified conditions are potentially relevant to IAQ problems:

- Inadequate sanitation such that occupants or the general public are "directly exposed to the risk of illness or injury." S.M.C. 22.208.010(C).
- Defective or unsanitary plumbing or fixtures. S.M.C. 22.208.010(C)(2).
- Infestation by insects, vermin, rodents, or other pests. S.M.C. 22.208.010(C)(7).
- Ineffective or inadequate waterproofing of foundation or floors, inadequate drainage, or "deteriorated, buckled, broken, decayed, or missing exterior wall or roof coverings." S.M.C. 22.208.010(A), (C).

The code provides that no one may occupy or rent a building that has been declared unfit until the DCLU certifies that the building is fit. S.M.C. 22.208.120(A). Once the DCLU determines that a building is unfit for human habitation, the code requires the agency to order that the building be repaired, demolished, and/or vacated. S.M.C. 22.208.020(A). If the responsible party fails to comply with the order, the DCLU may undertake the repair or demolition itself and recover its costs. S.M.C. 22.208.100. The code also provides for civil and criminal penalties for violations of these requirements or for failure to comply with an order. S.M.C. 22.208.150, 22.208.160.

B. Landlord-Tenant Law

The Seattle Municipal Code contains a section governing landlord-tenant agreements. That section establishes certain provisions that must be contained in rental agreements, though it does not address the responsibilities of landlords and tenants in maintaining the premise. *See* S.M.C. 7.24.010 - 24.100. The state Residential Landlord-Tenant Act, R.C.W. 59.18, establishes the responsibilities for landlords and tenants in a variety of areas, including maintenance and repair.

Scope. The state law provides that tenants may, after notifying the landlord of a substandard condition, request an inspection by the local agency. R.C.W. 59.18.115 (b). The code requires the local agency to conduct an inspection of the specific conditions listed by the tenant to verify those conditions, but not to inspect for any other conditions. Indeed the code provides specifically that the inspection is for the purposes of a private civil remedy, and shall not be related to governmental enforcement of any code or law. *Id.* According to DCLU officials, the agency keeps its records for such rent escrow inspections separate from its code enforcement records. The DCLU is rarely called upon to do these limited rent escrow inspections because the information found in unrestricted code enforcement inspections can also be used by tenants in seeking the private legal remedies set forth in the state law.

IAQ-related provisions. The law contains a number of general and specific requirements for maintaining the premises that may be applicable to IAQ-related problems.

Sanitation and good repair. The landlord must "make repairs and arrangements necessary to put and keep the premises in as good condition" as required by law. R.C.W. 59.18.060-5. In general, the landlord is responsible for common areas, while tenants are required to keep their units clean and sanitary. R.C.W. 59.16.060-3, 59.18.130-1.

Infestation. Under the landlord-tenant law, landlords must "provide a reasonable program for the control of infestation by insects, rodents, and other pests," R.C.W. 59.18.060- 4, while tenants are responsible for

extermination if the infestation is caused by their actions. R.C.W. 59.18.130-2.

Weathertightness. Landlords are responsible for maintaining dwelling units in "reasonably weather tight condition." R.C.W. 59.18.060-8.

Plumbing. According to the code, the landlord must "maintain all electrical, plumbing, heating and other facilities. . . in reasonably good working order." R.C.W. 59.18.060-7.

Enforcement. The landlord-tenant law provides tenants with legal recourse in the event a property owner fails to comply with the law's requirements regarding maintenance and repair. These remedies range from termination of the rental agreement to the filing of a legal action in court. 59.18.090. Tenants may follow the code's procedures for using a "repair and deduct" remedy, or they may bring suit for a reduction in rent based on the diminished value of the premises. R.C.W. 59.18.100, 59.18.110. In cases where the code violations endanger or impair the health or safety of the tenant, the tenant may, following a municipal inspection of the premises, bring an action in court to pay rent into an escrow account until the repairs are made. R.C.W. 59.18.115.

C. Nuisance Law

1. State Law: Revised Code of Washington 7.48

State law defines nuisances and provides local agencies with authority to take action to address them. For example, the law states that "whatever is injurious to health or indecent or offensive to the senses. . .so as to essentially interfere with the comfortable enjoyment of life and property is a nuisance and the subject of an action for damages and other and further relief." R.C.W. 7.48.010. The law provides for the affected party to bring a cause of action for damages, and to request that the sheriff abate the nuisance. R.C.W. 7.48.020. According to a separate state law, local boards of health are empowered to "provide for the prevention, control and abatement of nuisances detrimental to the public health." R.C.W. 70.05.060.

2. Local Law: Seattle Municipal Code 10.24, 10.34

The Seattle Municipal code contains a general nuisance provision stating that it is "unlawful for any person to have or permit upon any premises owned, occupied or controlled by them, any nuisance detrimental to health." S.M.C. 10.24.010. The code requires the city's health officer to order those responsible to abate and remove the nuisance, and authorizes the health officer to remove or abate the nuisance if the responsible party fails to comply. *Id.* The Seattle- King County Board of Health may inspect any building at any time for the purposes of determining if these provisions have been violated. S.M.C. 10.24.080

In addition, the code contains a section on vector control, which provides that all premises must be "maintained free from rats, mice and other rodents." S.M.C. 10.34.030. This section further states that it is "unlawful for the owner or occupant thereof to fail to take such reasonable preventive and remedial measures for such purpose as shall be prescribed by the Director of Public Health." *Id.* The health department is authorized to inspect buildings to ensure that they are being maintained "free from such rodents" and may order the owner or occupant to take appropriate eradication measures. S.M.C. 10.34.020. Violations are punishable by monetary fines and/or imprisonment. S.M.C. 10.34.040.

D. Other Laws: Publicly owned and subsidized housing

The Seattle Housing Authority (SHA) conducts routine annual inspections, as well as inspections upon complaint, for all public and Section 8 housing units in the city. Officials from DCLU indicate that as a result, the DCLU does not conduct many inspections of subsidized housing units.

According to SHA officials, the form used by the Housing Authority for its annual inspections of public housing units contains criteria drawn primarily from HUD guidelines, the Universal Building Code, and the Seattle Municipal Code. The form contains a number of items relating to indoor air quality, including bathroom and kitchen exhaust ventilation, mold/mildew, roach and rodent infestation, and "IAQ: dangerous levels of air pollution from carbon monoxide, sewer gas, fuel gas, dusts and other harmful pollutants." Seattle Public Housing Authority, "Guidelines for Annual Inspections" (1999). According to Seattle housing officials, the policy of the Seattle Housing Authority is to notify residents when pesticides will be applied. In addition, the SHA has developed an informational handout and an addendum to its standard lease entitled "Mold Information & Prevention Addendum" that must be signed by all the tenants along with other lease forms. Both the handout

and the addendum include information on sanitation, maintenance, and behavioral changes tenants can make to prevent mold growth in their units as well as the EPA recommendations for removing mold from a unit's interior. For Section 8 housing, the SHA uses the HUD Housing Quality Standards inspection form.

II. IMPLEMENTATION OF STATE AND LOCAL LAWS BY CITY AGENCIES

A. Agency Jurisdiction

Overview of local agencies with enforcement authority. In Seattle, enforcement of laws addressing housing conditions is chiefly the responsibility of the housing inspection agency.

The Department of Design, Construction, and Land Use is charged with a range of inspection, review, enforcement, and permitting duties. The DCLU is responsible for ensuring that all rental units within the city limits comply with the standards contained in the city's housing code, described above. The agency also has authority to enforce the city's ordinance governing whether a building is fit for human habitation.

According to agency officials, the DCLU generally only inspects buildings upon complaint or referral. The agency rarely inspects without a complaint because they do not have sufficient resources to conduct agency-initiated inspections. (A short-lived multi-family housing inspection program that was funded by fees from building owners was discontinued as a result of litigation in the mid-1990's. The city is not allowed to undertake any such fee-funded program until at least 2005.) If an inspector finds violations, the agency contacts the owner and allows time to make repairs before issuing a formal notice of violation. If a problem is not fixed and a notice is issued, the owner is given a deadline for making repairs, after which daily fines are levied until the problem is fixed. If problems persist even after fines are levied, the owner may be taken to court by the City Attorney's office. City officials note that owners generally address the violations before the case proceeds far in the legal system. Only a small fraction of cases go before a judge, generally those in which the defendant has not responded to the notice of violation or appeared in court.

The Public Health Department of Seattle-King County is responsible for providing a wide range of disease prevention and public health services throughout the city of Seattle and King County. Indoor air quality is under the jurisdiction of the Indoor Environments program within the agency's Environmental Health Division. The program began about 10 years ago, and is non-regulatory in nature, focusing on public consultation and education. According to agency officials, the health department has no enforcement authority or mandate in cases involving housing conditions, except for the control of "vector nuisances" such as garbage and rodent infestation, pursuant to Seattle Municipal Code Section 10.24.

There are currently two overlapping Healthy Homes projects underway within the health department. The agency has expressly maintained these research and demonstration projects distinct from any enforcement or regulatory activities undertaken by the agency. The first project, which is in its third year, is a research project funded by the National Institutes of Environmental Health Sciences. The second project is a two-year, HUD-funded program, focused primarily on remediation of environmental asthma triggers. The HUD grant will include 70 families with clinically referred asthmatic children whose homes need structural remediation. The agency will spend between $3,000 and $11,000 per home from HUD Community Development Block Grant funds and other sources to carry out repairs and upgrades such as replacing carpet, repairing leaks, and improving ventilation. They will also give all participating homes educational materials and equipment such as vacuum cleaners. The staff of the health department's IAQ program are providing in-kind assistance, and are serving as Remediation Coordinator for the HUD Better Homes for Asthma project.

Enforcement roles with respect to IAQ-related problems. The DCLU is the principal city agency pursuing enforcement of housing violations that impact indoor air quality.

The role of the health department in this area is very limited, outside of cases involving rodent control. When the agency receives a complaint, it provides consultation over the phone if possible and visits a site when necessary. In some situations, health officials seek to have the building or unit vacated. In other cases that are either severe or where education has not been effective in bringing improvement, the health department will refer DCLU to the property for code enforcement. If IAQ problems are less severe, health officials will write up specific recommendations on how to remedy the situation. As noted above, the agency has separate grants to conduct inspections of homes of asthmatics, but these inspections are not linked to code enforcement activities. According to officials, the agency does not generally use

the city's general nuisance provisions to pursue other IAQ-related cases in court, because they perceive the provisions as too vague to support legal action and because officials find that it is often difficult to prove who is at fault in IAQ cases.

While there is no formal mechanism for coordination, the health and housing inspection agencies do interact in IAQ-related cases in three principal ways: (1) health department referral of cases to the DCLU; (2) requests by the DCLU to the health department to certify certain conditions as unhealthy or dangerous; and (3) health department provision of general training and education to housing inspectors on IAQ problems such as mold.

B. Implementation of Housing and Health Laws

The Department of Design, Construction, and Land Use primarily uses the city's housing code (S.M.C. 22.206) to address IAQ problems in rental housing. Inspectors indicate that they are generally able to identify underlying causes that are explicitly mentioned in the code.

Mold is by far the most common IAQ-related problem found by inspectors, followed by gas leaks. In association with mold problems, inspectors most commonly cite ventilation provisions, such as S.M.C. 22.206.040, or weathertightness provisions, such as S.M.C. 22.206.080A. Officials also cite the requirement that plumbing must be in good working order, contained in S.M.C. 22.206.050(g). Officials note that the code provision requiring that "all appurtenant structures, floors, floor coverings, interior walls and ceilings shall be kept in a safe, sound and sanitary condition and in good repair,"S.M.C. 22.206.080(B), is only rarely used to cite mold contamination, because of uncertainties regarding causation and health risks. When gas leaks are found, they may cite the provision requiring that "mechanical facilities, fixtures, [and] equipment" be kept in good repair. S.M.C. 22.206.120. Although DCLU does not issue citations regarding problems with environmental tobacco smoke, officials note that the agency does provide help with minimizing tobacco smoke intrusion through sealing and ventilation of an individual unit.

DCLU inspectors rarely cite the housing code's general nuisance provision, in part due to concerns that the provision is too vague to enforce in court proceedings. For this reason, in cases where DCLU seeks to cite nuisance provisions, the agency generally requests assistance from the health department to certify that a situation is dangerous or unhealthy. According to DCLU officials, similar certification would be required in order for the agency to declare a building unfit for human habitation, pursuant to S.M.C. 22.208. The agency only declares buildings unfit in the most extreme and potentially dangerous cases, generally those involving security and fire safety problems. Typically, the agency will start by issuing an emergency order rather than citing section 22.208 first. If the emergency order is not complied with, DCLU might cite Section 22.208 and eventually the building would have to be vacated if the problem was not addressed. According to officials, though, section 22.208 is rarely used for tenant occupied buildings and is more common in owner occupied dwellings.

III. OBSERVATIONS AND CONCLUSIONS

Legal authority. Seattle's local housing code contains many of the same general provisions that are found in other local codes, a number of which are potentially applicable to IAQ-related problems. For example, the code requires owners to maintain all major components and structural elements of the property in sanitary and sound condition; to provide ventilation; to maintain plumbing in good repair; and to eliminate pests. The code also has provisions that might be particularly relevant to IAQ problems—*e.g.*, the requirement that all building components be reasonably weathertight, watertight and damp-free, and the requirement that toxic materials not be used in areas readily accessible to children.

Housing officials note that they can usually identify an underlying cause of an IAQ-related problem and cite to a specific corresponding code provision. However, absent such a specific provision, the officials do not find the general provisions of the code (*e.g.*, requiring sanitation and cleanliness) to provide adequate authority for addressing IAQ problems such as mold. In part, this view relates to the fact that the agency's inspectors have expertise in the building sciences, rather than in public health. Officials indicate that the availability of clearer standards for unhealthy levels of mold and other IAQ problems would enable DCLU or another agency to enforce the code with greater confidence.

Inter-agency coordination. The division of responsibility for enforcing minimum housing standards is clear, since the health department does not engage in enforcement of housing or health laws to address IAQ problems in rental housing. The health department provides consultation, training and information to DCLU inspectors, but officials indicate no plans or desire to have greater

regulatory authority in this area. The absence of a regulatory role for the health department may be reflected in the city's somewhat narrow interpretation of the housing code's general sanitation provisions.

Obstacles to implementation. As in many other cities, limited agency resources affect the extent to which housing inspectors can investigate and pursue IAQ-related problems. DCLU no longer conducts inspections other than in response to complaints. At the health department as well, recent budget cuts have resulted in a focus on core activities, rather than issues such as indoor air quality. Another obstacle to pursuing enforcement, according to local housing advocacy organizations, is that tenant remedies provided in the law are difficult to use in practice. Local agency officials also note the need for guidance on how to remediate IAQ problems such as mold contamination, as well as more clearly established recommendations for what to tell owners and tenants about how to correct IAQ problems.

CHAPTER SIX
MARION COUNTY, INDIANA

Marion County, Indiana includes the city of Indianapolis and the surrounding metropolitan area, with Indianapolis accounting for about 90 percent of the county's population of 860,454. See Indiana Business Research Center, Marion County In-depth Profile, *available at* http://www.stats.indiana.edu/profiles/pr18097.html#d (last visited: May 30, 2003). There are 387,183 housing units in Marion County, of which about 35 percent are located in multi-unit structures, and 37 percent are renter-occupied. Of all renters, 28.3 percent spend at least 35 percent of their monthly income on rent. *See* U.S. Census Bureau Profile of Selected Housing Characteristics: 2000, *available at* http://factfinder.census.gov/bf/_lang=en_vt_name=DEC_2000_SF3_U_DP4_geo_id=05000US1 8097.html (last visited: May 30, 2003).

Marion County is notable for its focus on addressing indoor air quality issues in various types of buildings, including residential rental properties. The Marion County Health Department implements a strong local housing ordinance through both general housing inspectors and a unit of the agency that specializes in indoor air quality issues. The result is an integration of housing and health expertise in the code enforcement process.

I. LEGAL FRAMEWORK

A. Housing Law

Indiana does not have a state housing law that sets forth detailed minimum standards for residential properties. The state's health code does address unfit buildings and authorizes state and local authorities to take action to address such buildings. Enforcement of minimum housing standards for occupied residential properties in Marion County, however, is governed primarily by a more detailed local health ordinance.

1. State law: Indiana Code, Title 16, Art. 41, Ch. 20 (Health, Sanitation, and Safety: Dwellings Unfit for Human Habitation)

The state health code defines a dwelling that is unfit for human habitation as one that is "dangerous or detrimental to life or health" due to any of the following conditions:

> (1) Want of repair. . . .(2) Defects in the drainage, plumbing, lighting, ventilation, or construction. . . .(3) Infection with contagious disease. . . (4) The existence on the premises of an unsanitary condition that is likely to cause sickness among occupants of the dwelling.

Indiana Code (IC) 16-41-20-1. The law does not provide any additional discussion of these general standards.

The state law envisions enforcement of this provision by local health officials. The state health department is authorized to address unfit buildings only after first giving local officials notice and an opportunity to take action. IC 16-41-20-2,3. The law authorizes the enforcing agency to issue an order to vacate premises declared to be unfit, as well as to order the premises repaired or cleaned. IC 16-41-20-4,7. A person who violates the law or an order issued under the law may be required to pay the costs of enforcement and may be convicted of a misdemeanor. IC 16-41-20-12,13.

2. Local law: The Code of the Health and Hospital Corporation for Marion County, chapter 10 (Minimum Standards for Residential Property and Housing Ordinance)

Scope. The Marion County health code establishes minimum standards for housing in the city of Indianapolis and surrounding jurisdictions within the county. This housing ordinance applies to all residential buildings and structures. Code of the Health and Hospital Corporation (HHC code) § 10-103.

IAQ-related provisions. The housing ordinance contains a number of general and specific provisions that are potentially applicable to housing conditions that affect indoor air quality.

General Sanitation. The ordinance provides that an owner may not allow occupancy unless the premises are clean, sanitary and fit, and that the owner must maintain the common areas in a clean and safe condition. HHC code § 10-301(a),(b). In addition, owners and occupants may not allow the condition of a property to cause or produce a health hazard. HHC code § 10-303(a). The ordinance also requires generally that "every foundation roof, exterior and interior wall [and] ceiling. . .shall be maintained in safe and sound condition, capable of supporting reasonably expected weights." HHC code § 10-702.

Infestation. An owner is responsible for exterminating if there is infestation in common areas of the property. HHC code § 10-305(d). The owner is also responsible for any extermination needed to address infestation that results from an owner's failure to maintain the dwelling in insect-proof condition. HHC code § 10-305(c). The ordinance also requires that buildings be maintained in a "rat-free" and "rat-proof" condition in those areas of the county "which historically have had rat infestations." HHC code § 10-709

Plumbing. Pursuant to the housing ordinance, plumbing must be properly installed and maintained in good working condition, free from defects, leaks and obstructions. HHC code § 10-405.

Ventilation. Bathrooms and kitchens must have either a window or an approved ventilation system in working condition. HHC code § 10-502. The ordinance further requires that heating and cooling facilities be maintained and operated in accordance with the design capacity of the equipment. HHC code § 10-504.

Carbon monoxide and other combustion by-products. Pursuant to the ordinance non-electric heating devices "must be vented to the outside. . .in an approved manner and must be supplied with adequate combustion air." HHC code § 10-602(b). The ordinance also provides that "non-electric unvented portable heaters must be supplied with adequate combustion air and may not cause hazardous levels of elevated carbon monoxide or other hazardous combustion by- products inside the dwelling." HHC code § 10-602(c). In general, heating equipment must be maintained in safe and good working condition. HHC code § 10-601.

Non-absorbent surfaces, carpeting. Every bathroom and kitchen floor surface must be constructed and maintained in a clean and sanitary condition, so that it is easily cleanable and reasonably impervious to water. According to the ordinance: "This provision does not prevent the use of carpeting *so long as the carpeting is maintained in a clean and sanitary condition.*" HHC code § 10-701 (emphasis added).

Hazardous-materials. Under the ordinance, chemicals that present a potential health hazard must be stored, used and disposed of in a manner that does not present a significant health hazard. HHC code § 10-307. This provision would thus potentially include pesticides, for example.

Weathertightness, dampness. The ordinance requires that every foundation, roof, exterior wall, door and window be reasonably weathertight and watertight, capable of preventing dampness, and maintained in sound condition and good repair. HHC code § 10-703. In addition, properties may not have standing water that causes a public health hazard. HHC code § 10-706.

2. Local policy: General Ordinance. No. 16-1996(A), Section 5 (Enforcement of Indoor Air Quality Standards)

The Health and Hospital Corporation adopted an administrative policy on environmental enforcement that affirms the authority of the Corporation to take enforcement action in cases involving public health risks posed by indoor air pollution. The policy, effective December 1, 1996, states:

> The Board considers and adopts the following recommendation of the Regulatory Review Commission: Health and Hospital should conduct educational or consultative activities in the area of indoor air quality. However, when a public health risk is presented by an indoor air contaminant, Health and Hospital should take enforcement action; provided that enforcement actions by Health and Hospital should not duplicate action taken by any other government agency.

B. Landlord-Tenant Law

Indiana state law sets forth the responsibilities of landlords and tenants, as well as their legal recourse in the event those responsibilities are not met. In 2002, the state amended its landlord-tenant law to add landlord responsibilities relating to the condition of the property. Specifically, Indiana Code Section 32-31-8-5 provides that the landlord shall:

- deliver the premises in a safe, clean and habitable condition;
- comply with all applicable health and housing codes; and
- make all reasonable efforts to keep common areas clean and in proper condition.

In addition to these statutory responsibilities, Indiana courts have established a limited implied warranty of habitability, which is interpreted on a case-by-case basis. *See Johnson v. Scandia Assoc., Inc.*, 717 N.E. 2d 24 (Ind. 1999).

C. Nuisance Law

1. State law: Indiana Code, Title 16, Art. 19, Ch. 3

Indiana's health code authorizes the state health department to adopt public health rules, including specifically rules governing "nuisances dangerous to public health." IC 16-19-3-4. The law also authorizes the health department to "make sanitary inspections and surveys throughout Indiana and of all public buildings and institutions. After due notice. . . the state department may enter upon and inspect private property in regard to the presence of cases of infectious and contagious diseases and the possible cause and source of diseases." IC 16-19-3-7. The health department "may issue an order condemning or abating conditions causative of disease." IC 16- 19-3-11.

The article in the state health code that addresses unfit dwellings, discussed above, also contains a nuisance provision. The code states that: "The state department, local board of health, or county health officer may declare a dwelling that is unfit for human habitation a public nuisance." IC 16-41-20-6. The state or local health agency is authorized to order repair or cleaning of the dwelling. *Id.*

2. Local law: Indianapolis/Marion County Code, Sections 391, 575

The Revised Code of the Consolidated City and County (City/County code) authorizes local authorities to address nuisances as defined under state law, as well as those defined in the code. City/County code § 391-101. Of greatest relevance to rental properties is the code's statement that buildings or premises may not be "used, maintained or operated in the city in any manner so as to cause or produce a nuisance or be dangerous or detrimental to the public health and safety." City/County code § 391-102. The code further provides that buildings constitute public nuisances if they are "perilous to life or property by reason of its construction or age. . . .or where the water, plumbing and sanitary conditions imperil health. . . ." City/County code § 391- 113.

The city's Department of Metropolitan Development, in conjunction with the fire and police departments and the Health and Hospital Corporation, enforces the code, including the inspection and abatement of buildings that constitute a nuisance. City/County code § 391-203. The Department of Metropolitan Development is required to notify the owner of the defects to be corrected or to order the building demolished. *Id.* The code provides penalties for failure to comply with an order to abate a nuisance. City/County code §§ 291-119, 103-3.

The code also prohibits property owners or occupants from allowing an "environmental public nuisance," defined to include "property which has accumulated litter or waste products. . . .or which has otherwise been allowed to become a health or safety hazard. City/County code §§ 575-1,2. Monetary fines may be issued for violations of this provision. City/County code § 575-9.

D. Other Laws: Publicly Owned and Subsidized Housing

The Indianapolis Housing Agency administers the public housing and Section 8 housing programs for Indianapolis and Marion County. For Section 8 units, the agency has developed guidelines for inspecting units at the outset of a tenancy and annually during the tenancy. These guidelines incorporate both HUD's Housing Quality Standards and Marion County housing code standards. Indianapolis Housing Agency, Housing Quality Performance Requirements and Acceptability Standards, *available at* http://www.indyhousing.org/IHA_Landlords/pdf/IHA_HQS_PP.pdf (last visited: May 30, 2003).

II. IMPLEMENTATION OF STATE AND LOCAL LAWS

A. Agency Jurisdiction

Overview of agencies with enforcement authority. The Marion County Health Department (MCHD) covers Indianapolis and surrounding jurisdictions that are also part of Marion County. The city of Indianapolis does not have a separate health department. The MCHD is "operated by" the Health and Hospital Corporation of Marion County, a municipal corporation that also runs the Wishard Memorial Hospital. The Health Department, through its Bureau of Environmental Health, is responsible for enforcing the housing ordinance within the Health and Hospital Corporation code.

In most cases, a landlord will be given 30 days to fix a problem, though a shorter time frame is applied in more severe cases. In the event of noncompliance with MCHD orders, the agency can refer a case to the General Counsel's office of the Health and Hospital Corporation, which handles housing code violation cases for the entire Marion County area. Code enforcement cases are heard before a special environmental court that hears mainly code enforcement and building permit cases.

The city of Indianapolis, through the Mayor's office and the city's Department of Metropolitan Development (which issues construction and building permits), sometimes conducts inspections using the nuisance authority provided in the local code. These inspections, or "sweeps," generally involve properties with a range of serious problems, and often are conducted jointly with other agencies such as the MCHD and the fire department.

Enforcement with respect to IAQ problems. County IAQ officials note that in the 1980's, at the same time a growing body of research was studying health impacts of indoor air pollution, the MCHD Housing Department began receiving a higher volume of IAQ-related complaints and questions. This increase in demand led to the creation of a separate IAQ program within the agency. In 1994, the IAQ program was moved to the Water Quality and Hazardous Materials Department within the agency. Currently there are two IAQ inspectors and approximately 30 general housing inspectors within the Health Department. The department's occupational health specialist or its hazardous materials specialists may also respond to IAQ-related calls in certain circumstances.

The IAQ program works with the Housing Department, but remains in a different unit within MCHD. Where a complaint is routed depends on how it is framed. It may go to both the IAQ unit and the housing department if there are multiple issues involved. If a housing inspector sees an IAQ-related problem (such as mold or asbestos) while in a building, he or she may refer the case to the IAQ unit to issue a citation on the IAQ-related violations. Thus, there may be two separate citations in a single case. Occasionally, the IAQ inspectors will also assist the housing inspectors who work with the city police and fire departments on large "sweeps" of apartment buildings if, for example, there is a lot of mold or other suspected IAQ issues in the buildings.

B. Implementation of Health and Housing Laws

The indoor air quality program within MCHD takes an active role in addressing IAQ-related problems in rental housing (as well as commercial properties) through the code enforcement process. According to IAQ officials, this has begun to show results in terms of reducing the number of complaints within certain housing complexes, and in increasing awareness of IAQ issues on the part of some property owners.

According to IAQ officials, about 90 percent of IAQ-related complaints to MCHD in the past couple of years have involved mold. If the violation is very minor, inspectors may make informal recommendations and follow up to make sure that the property owner fixes the problem. IAQ inspectors routinely look for the source of the mold problem—*i.e.*, the underlying moisture problem and related code violation. Inspectors may pull back carpeting to determine if there is mold underneath. In addition, MCHD will cite the part of the unit that the mold is growing on as a defective condition; for example, if there is mold on a wall, then the wall is not considered to be maintained in "sound condition" or in "good repair" as required by the law.

The agency has gotten much more specific over the years in suggesting corrective actions. While inspectors stop short of specifying how to perform the cleanup, they may encourage use of EPA and New York City guidelines. If an IAQ inspector can't find the source of the problem, he/she may list as the suggested corrective action to "ensure all water problems have been corrected" and may note, *e.g.*, that painting over mold on drywall is not acceptable. Sample MCHD housing violations order (on file with Environmental Law Institute). In cases where carpeting has been wet for more than 48 hours, the inspector may require the owner to replace it

and will state specifically on the order that "carpet cleaning is not sufficient." *Id.*

According to IAQ officials, MCHD generally does not need to cite the general nuisance provision of the housing code. Instead, inspectors use a variety of more specific provisions. The box below shows provisions of the housing ordinance (Chapter 10) that were cited in recent orders issued by the department to address a variety of IAQ problems.

In addition to mold complaints, the IAQ program receives complaints relating to the presence of carbon monoxide, environmental tobacco smoke and other pollutants that may be linked to improperly functioning mechanical equipment. The office also provides radon detectors and information in response to radon-related complaints, but does not conduct regulatory enforcement in this area. According to health officials, pest infestation is routinely cited during housing inspections, and if pest problems are observed during the course of responding to an IAQ complaint, integrated pest management is encouraged.

IV. OBSERVATIONS AND CONCLUSIONS

Legal Authority. Marion County's local housing code provides a fairly comprehensive set of general housing standards that can be used to address a variety of IAQ-related problems. These include provisions governing basic sanitation, structural soundness, and adequate plumbing. In addition, the code addresses issues that are more directly related to IAQ problems, such as pest infestation and ventilation. The code also specifically requires that bathroom floors be non-absorbent, and that building components be capable of preventing dampness and be maintained in sound condition.

Marion County Health Department officials believe that the ordinance provides adequate legal authority to address the most pressing health-related problems, and over the past several years, the department has been using this legal authority to address a range of IAQ problems in rental housing, particularly problems associated with moisture and water intrusion. For example, if IAQ inspectors find mold contamination on walls or floors, they cite the code's requirement that the building com-

CODE SECTION	PROBLEMS CITED
Sections 404, 405 (Plumbing)	Shower allowing hot water and steam to be discharged constantly, leading to mold growth.
Sections 702, 703 (Safe and sound condition) (Weathertightness, dampness)	Water-damaged/moldy drywall, ceiling and baseboard in bathroom. Discolored, wet and/or moldy carpet, padding, tack strips & flooring under carpet, from water leaks. Deteriorated shower door, due to mold growth.
Sections 701, 703 (Weathertightness, dampness) (Non-absorbent surfaces/ carpeting)	Water damaged and/or moldy cabinet floor under bathroom sink.
Sections 504, 601 (Ventilation) (Heating equipment)	Heating/cooling unit in poor condition as evidenced by condition of filter and nearby areas.
Sections 404, 701 (Plumbing) (Non-absorbent surfaces/carpeting)	Moldy, deteriorated caulking inside shower.
Sections 701, 702 (Safe and sound condition) (Non-absorbent surfaces/ carpeting)	Discolored, wet and/or moldy vinyl flooring and foundation under vinyl in basement bathroom as a result of plumbing defects.

Source: Sample MCHD housing violations orders (on file with Environmental Law Institute).

ponents prevent dampness and be maintained in a sound condition. Moreover, the inspectors often indicate specific measures that are required to correct the problem, such as replacing moldy carpeting.

Although officials believe that they have the basic authority to deal with significant problems, the lack of more explicit regulatory language is a factor in some cases. Where there is a relatively small amount of mold, inspectors may not feel they have a clear source of authority for citing the problem. Also, there are some cases in which it is unclear whether the tenant or the landlord is responsible for the problem—*e.g.*, when mold in a bathroom may result from failure to open the bathroom windows or utilize mechanical ventilation. According to health officials, the county's program of IAQ inspections has by now become institutionalized and the agency is beginning to see positive results from their active code enforcement in IAQ-related cases.

Inter-agency coordination. A key to Marion County's success in addressing IAQ problems is the creation of a separate, IAQ-specific program within the Health Department that carries out code enforcement work. The program is focused directly on addressing IAQ problems in housing and other indoor environments, and inspectors provide owners with specific guidance on correcting IAQ-related deficiencies. Although the general housing enforcement unit is also located in the Health Department (thus facilitating coordination between IAQ and general enforcement), officials note that IAQ inspectors and general housing inspectors do treat cases somewhat differently. For example, IAQ inspectors may be more likely to suggest integrated pest management to owners with infestation problems.

In addition, having an environmental court is an advantage, because the court has special expertise in this area of law and is familiar with the county's inspection program. County officials and private attorneys alike note that environmental court judges are very experienced in environmental issues and are interested in seeing environmental and public health hazards corrected if they are presented with evidence of a problem.

Obstacles and opportunities. County officials responsible for prosecuting housing code violations suggest that the biggest obstacles to prosecuting IAQ cases are not related to proving that a particular problem violates the housing code. Rather, the obstacles are common to most housing code cases involving owners who don't comply with county orders. For example, it may take a long time to find the responsible party or to bring the court case to a conclusion. Or, buildings may go into foreclosure and then sit for a long time until the redemption period is over, during which time the problems worsen. Other obstacles include lack of resources to correct violations, and lack of awareness and information about IAQ problems on the part of owners and tenants alike.

CHAPTER SEVEN
STAMFORD, CONNECTICUT

The city of Stamford, located about 38 miles northeast of New York City, has a population of about 117,000, according to 2000 U.S. census data. There are 47,317 total housing units in the city, 53.5 percent of which are located in multi-unit structures. About 42 percent of the housing units are renter-occupied, and 31 percent of renters pay at least 35 percent of their monthly income on rent. *See* U.S. Census Bureau Profile of Selected Housing Characteristics: 2000, *available at* http://factfinder.census.gov/bf/_lang=en_vt_name=DEC_2000_SF3_U_DP4_geo_id=16000US0 973000.html (last visited: May 30, 2003).

Both state and local law establish minimum standards for residential rental properties located in Stamford. The city's health department, which is also active in addressing indoor air quality issues generally, has sole responsibility for housing code enforcement. The agency makes broad use of fairly typical housing code provisions to address sub-standard housing conditions that may affect the health of building occupants.

I. LEGAL FRAMEWORK

A. Housing Law

Minimum property conditions for rental dwellings in Stamford are governed by both state and local law. These standards are implemented and enforced at the local level.

1. State Law: Conn. General Laws, Sections 47a-50-61

Scope. This state law establishes minimum standards for "tenement houses," defined as rental properties occupied by three or more families. Conn. General Laws (C.G.L.) §. 47a-50. The law also contains some minimum standards that are applicable to any residential dwelling rented to another person. *Id.* The law requires that enforcement of the standards be carried out by local boards of health or by another local agency designated by local ordinance. C.G.L. § 47a-55. The law does not limit the authority of local agencies to adopt and enforce ordinances or regulations addressing housing conditions, provided the local requirements are not inconsistent with state law. *Id.*

Key IAQ-related provisions. The housing standards law authorizes the local department of health to take action if there is any "defect in the plumbing, sewerage, water supply, drainage, lighting, ventilation, or sanitary condition" of a one- or two-family rented property and such defect constitutes a "danger to life or health." C.G.L. § 47a-52(c). The law also establishes a number of mainly general standards that must be met in tenement houses (hereinafter "multi-family properties") or other residential rental properties.

Basic sanitation and repair. Multi-family properties must be kept "clean and free from any accumulation of dirt, filth, garbage or other matter. . . ." C.G.L. § 47a-51(a). Both the owner and the tenant are assigned responsibility for adequate cleaning of the premises, as may be ordered by the local health department. The law also requires that the building be kept in good repair. C.G.L. § 47a-51(c).

Nuisances. The law contains a general nuisance provision that authorizes the local health agency to declare a nuisance if it finds that a multi-family property (including the property's drainage or ventilation) is "dangerous or detrimental to life or health." C.G.L. § 47a-53. The agency may order the nuisance to be remedied or may undertake the abatement itself if the order is not obeyed. If the local agency finds that the premises are "unfit for human habitation or dangerous to life or health by reason of want of repair or of defects in the drainage, plumbing, ventilation or construction. . . ." the property may be condemned. C.G.L. § 47a-54.

Ventilation. In addition to the general ventilation requirements relating to nuisances, the law requires that bathrooms have either windows, vent shafts, or ventilating flues. C.G.L. § 47a- 54c.

Adequate roof repair and drainage. The law requires the roof in a multi-family property to be maintained free of leaks, and also requires drainage from the roof in order to avoid dampness in the walls or ceilings of the property. C.G.L. § 47a-51(d).

Enforcement. As noted above, primary responsibility for enforcing the state housing law rests with local health departments. The law includes both monetary penalties and imprisonment for failure to comply with orders of the local agencies. C.G.L. § 47a-55.

Related legal provisions. Another state law, the Tenement House Act, also contains a few IAQ-related provisions. The law, among other things, requires that bathrooms have specified ventilation, and prohibits occupation of the basement of a building if the basement walls and floors are not "damp-proof." C.G.L. §§ 19a-359, 361.

2. Local law: Stamford Code, Section 146

Scope. Section 146 of the Stamford Code establishes housing standards applicable to multi-family properties (those containing three or more dwelling units) within the city. The code directs the Stamford Department of Health to make "periodic inspections" to determine compliance with its provisions. Stamford Code § 146-5. The Department must inspect and issue a certificate of occupancy before each time a unit is rented in any building that is 15 years old or older. Stamford Code § 146-33. In addition, owners of multi-family properties are required to apply to the Health Department for an operating license, and the agency may inspect properties in conjunction with the issuance of a license. Stamford Code § 146-34.

IAQ-related provisions. Stamford's Housing Standards code is similar to the state housing law, though the city code contains more specific provisions in a number of areas that are potentially related to IAQ problems.

Sanitation. The city housing code prohibits the leasing of a dwelling unit unless it is "clean, sanitary, in good repair and fit for human occupancy." Stamford Code § 146-27(a)(8). The code also requires owners of properties containing at least two units to maintain in a clean and sanitary condition the shared or public areas of the premises. Stamford Code § 146-23. The code requires occupants to keep the premises under their control in a clean and sanitary condition. Stamford Code § 146-15.

The Housing Standards code also sets forth the bases upon which the Health Department may declare a property "unfit for human habitation" and order it vacated. These include properties that are so dilapidated or unsanitary that they create a "serious hazard" to health and safety, as well as properties that lack adequate ventilation to protect health and safety. Stamford Code § 146-24

Ventilation. The code requires that bathrooms and kitchens have windows or a "ventilation system which is kept in efficient operation and approved by the Director of Health." Stamford Code § 146-26.

Plumbing. Plumbing fixtures must be "properly installed and maintained in good sanitary working condition, free from defects, leaks, and obstructions." Stamford Code § 146- 27(A)(4).

Weathertightness. Under the code, a property may not be rented unless the foundation, floor, walls, roof and doors are "reasonably weathertight, watertight and rodentproof. . . . and kept in sound condition and in good repair. Stamford Code § 146-27(A)(1).

Non-absorbent surfaces. Bathroom and kitchen floor surfaces must be constructed and maintained to be "reasonably impervious to water. . . and to be easily kept in a clean and sanitary condition." Stamford Code § 146-27(A)(5).

Infestation. In multi-family properties where more than one unit is infested, the code gives owners the responsibility to exterminate any insects, rodents or other pests on the premises. Stamford Code § 146-20. As noted above, the foundation, floor, walls, roof and doors must be reasonably rodent-proof. Stamford Code § 146-27(A).

Combustion products. The Housing Standards code prohibits unvented flame space heaters. Stamford Code § 146-26(E)(3).

Enforcement. When inspectors find a violation of the provisions of the Housing Standards code, the Health Department has a range of enforcement options. The director of health is authorized to seek injunctions against offending owners. If owners do not comply with injunction orders, the agency can "cause compliance"

and require the owner to pay all remediation costs. Stamford Code § 146-13(A). Owners are also subject to fines and imprisonment. Stamford Code § 146-13(B). If an owner does not correct a violation within 60 days of notice of the violation, the agency can deny or suspend his or her operating license. Stamford Code § 146-37. In cases of extremely unhealthy or unsafe conditions, the department can designate a building or unit to be "unfit for human habitation" and can order the premises vacated until the problems are corrected. Stamford Code § 146-24.

B. Landlord-Tenant Law

In Connecticut, state law governs the relationship between landlords and tenants and establishes tenants' legal recourse in cases of substandard housing. As described above, Stamford's Housing Standards code does assign to the owner and resident certain responsibilities for maintaining the premises.

Scope. The state landlord-tenant law, C.G. L. §§ 47a-1— 47a-28a, establishes the responsibilities of both landlords and tenants in a wide range of areas, including actions relating to the condition of the property. The law also establishes legal recourse when a party fails to meet those responsibilities.

IAQ-related provisions. The law provides generally that a landlord must comply with all applicable codes affecting health and safety and "make repairs and do whatever is necessary to put and keep the premises in a fit and habitable condition." C.G.L. § 47a-7. This requirement does not apply if the problem was intentionally caused by the tenant. The landlord must keep all common areas in a clean and safe condition, as well as maintain in good and safe working order all plumbing, heating and ventilating equipment. *Id.*

This provision was cited by the Connecticut Superior Court in a recent landlord-tenant case involving a claim of mold contamination. In the case, the landlord sued the tenant for non- payment of rent, and the tenant in turn filed a claim against the landlord alleging that the premises were uninhabitable due to mold. The court held that the tenant was not liable for any of the unpaid rent; because of the mold, the premises were not in a fit and habitable condition and the landlord had failed to remedy the problem. Muro v. Luhn, 2000 WL 1196508, Superior Court of Conn., No. CV 980332868S (Aug. 2, 2000) at 2. The court found that there were "water, rot and mold conditions that were affecting the defendant's health." *Id.*

The law also establishes the tenant's duty to comply with applicable laws, to keep the portion of the premises they occupy "as clean and safe as the condition of the premises permit," and to use facilities and appliances in a reasonable manner. C.G.L. § 47a-11.

Enforcement. The state landlord-tenant law provides different avenues for tenant enforcement if a landlord fails to correct a deficiency in the premises. First, the tenant may terminate the lease. C.G.L. § 47a-12. Second, the tenant may file an action in court in which the tenant pays rent into the court while seeking an order for repair of the premises. C.G.L. § 47a-14h.

C. Nuisance Law

1. State law

As noted above, the state housing code authorizes local health agencies to declare a nuisance if any multifamily property is "dangerous or detrimental to life or health." C.G.L. § 47a-53. The agency may order the property abated, undertake the abatement itself, and/or order the property vacated. C.G.L. §§ 47a-53, 54. The agency may also order one- or two-family rented dwellings vacated if they are found to endanger the occupants' health. C.G.L. § 47a-52(d).

Another Connecticut law establishes the duty of municipal health departments to "examine all nuisances and sources of filth which in their judgment may endanger the health of the inhabitants." C.G.L. § 19a-206. The law states broadly: "Any owner or occupant of any property who maintains such property. . .in a manner which violates the provision of the Public Health Code. . .shall be deemed to be maintaining a nuisance or source of filth injurious to health." *Id.* The law authorizes local health officials to investigate, abate or cause to be abated such nuisances, and provides for civil penalties and injunctive relief. *Id.*

The state Department of Public Health has adopted regulations governing nuisances that may come into play in situations involving IAQ problems in rental housing. The regulations set forth conditions that are specifically declared to be public nuisances, including: "Buildings or any part thereof which are in a dilapidated or filthy condition which may endanger the life or health of persons living in the vicinity." Conn. Regulations §19-13-B1 (i). The regulations also reiterate the duty of local health

departments to investigate and pursue abatement of nuisances. Conn. Regulations § 19-13-B2.

2. Local law

The section of the Stamford Code setting forth Health Standards contains some provisions relating to nuisances that may be relevant to certain IAQ-related problems. For example, the code prohibits anyone from permitting on their property "any filth, decayed animal or vegetable matter, manure, stagnant water or anything which may be injurious to health or annoying or offensive to another." Stamford Code § 143-6. In addition, the code prohibits property owners from creating a condition on their property that allows insects or vermin to breed, and declares the same to be a nuisance. Stamford Code §143-10.

D. Other laws

1. State Fire Safety code

While the Stamford Housing Standards code prohibits unvented flame space heaters, the state's Fire Safety code prohibits the use of unvented fuel-burning room heaters in any residence other than a single-family home, unless the heater is "fueled by natural gas or propane and is equipped with an oxygen depletion sensor." C.G.L. § 29-318b. This law is enforced by the fire marshal. According to health department officials, beginning two years ago the fire marshal began taking part in the health department's annual licensing inspections.

2. Consumer protection law

Connecticut law prohibits "unfair methods of competition and unfair or deceptive acts or practices in the conduct of any trade or commerce." C.G.L. § 42-110b(a). "Trade" and "commerce" are defined to include the offering for lease or leasing of real property. C.G.L. § 42-110a(4). The law provides for government enforcement, as well as for private actions where individuals have suffered monetary or property loss. C.G.L. §§ 42-110d-o.

The Connecticut courts have held that the state unfair and deceptive acts and practices act may apply to cases involving a landlord's actions that violate state housing laws or otherwise "offend public policy." *See Conaway v. Prestia*, 464 A.2d 847, 852-3 (Conn.,1983) (landlord's failure "to obtain the required certificates of occupancy and the concomitant substandard conditions of the units" constituted a violation of the consumer law); *Hardy v. Griffin*, 569 A.2d 49, 50 (Conn.Super.,1989) ("renting premises in which there is lead-based paint that exceeds the statutory limits is contrary to the public policy" embodied in the state landlord-tenant laws); but *see Connelly v. Housing Authority of City of New Haven*, 567 A.2d 1212 (Conn.1990) (municipal housing authority exempted from liability under the unfair trade practices act).

3. Publicly owned and subsidized housing

The Stamford Housing Authority (SHA) conducts inspections and addresses indoor air quality-related problems in the city's public housing units as part of its maintenance program. The SHA conducts inspections using HUD's Uniform Physical Condition Standards (UPCS) form. SHA officials note that mold has been a problem in many public housing units. In cases involving lead paint and mold, SHA uses the more stringent standards from the city codes.

The Stamford Housing Authority also conducts annual inspections of the more than 800 Section 8 subsidized housing units in Stamford. Section 8 inspections are guided by HUD's Housing Quality Standards (HQS). The agency notes that inspectors also use the standards found in municipal codes, though their authority to do so has been disputed by landlords in the past. According to officials, rodent infestation has been a major IAQ-related problem in Section 8 properties. The SHA encourages landlords to keep a regular extermination schedule and educates tenants as to how they can help control infestation problems.

II. IMPLEMENTATION OF STATE AND LOCAL LAWS BY CITY AGENCIES

A. Agency Jurisdiction

Stamford's Department of Health and Social Services ("health department") is the sole city agency responsible for housing code enforcement. Within the department, the Environmental Health and Inspection Division is responsible for conducting inspections and enforcing housing and health standards in rental properties. Housing officials may inspect rental units for violations of the housing code at any time, and the agency receives complaints and referrals from residents, neighbors, and other government agencies (*e.g.*, local social services or building inspections offices). The health department is also the agency responsible for certifica-

tion and licensing of multi-family housing. Thus, inspections are conducted each time a unit is rented, in connection with the issuance of Certificates of Apartment Occupancy for buildings that contain four or more units and are 15 years old or older. According to officials, this gives the agency some leverage in ensuring that code violations are corrected, though to date a license has not been withheld or revoked due to an IAQ-related problem in the premises. Through their required annual licensing inspections, the Health Department also enforces the ventilation, basement dwelling, and other provisions of the Tenement House Act.

If inspectors find a code violation, they issue an order to the owner that provides a specific deadline for remedying the problem, after which the property is reinspected. If owners do not comply with health department orders, the local prosecutor (City Office of Legal Affairs) can pursue the case in housing court. According to city officials, in Fiscal Year 2000, only 35 owners were referred to the courts out of 361 housing code orders, 42 emergency housing orders, 11 lead abatement orders, and 87 condemned units. According to health department officials, the agency is nearly always successful when it files a case in court.

B. Implementation of Housing and Health Laws

The health department has taken an active role in addressing IAQ problems in rental housing, both in its regulatory (code enforcement) work and in its educational and other non-regulatory activities.

In its code enforcement work, the health department primarily uses the housing standards set forth in the Stamford Code, though inspectors will cite both state and local code provisions that relate to a particular violation. In response to IAQ-related problems, city health officials note that they cite a number of different provisions. First, inspectors may cite the city code requirement that a unit be "clean, sanitary, in good repair and fit for human habitation." Stamford Code § 146-27(A)(8). Inspectors also cite the general sanitation provisions of the state law—*e.g.*, that the unit must be "kept clean and free from any accumulation of dirt, filth, garbage or other matter." C.G.L. § 47a-51. The department has used these provisions, for example, to address unhealthy carpeting. Officials note that they will order carpeting to be cleaned or repaired, or to be replaced if it is irreparably moldy. Second, inspectors may cite the general nuisance provisions of state law. C.G.L. § 47a-53, 54; Conn Regulations § 19-13-B. Finally, inspectors will cite any specific provision that relates to the root cause of the IAQ problem, such as cockroach infestation (Stamford Code §146-20, 27), structural and plumbing leaks (Stamford Code §146-27), and inadequate ventilation (Stamford Code § 146-26).

Inspectors indicate that they can usually identify the specific code violation causing a mold problem. According to officials, inspectors usually try to educate owners and tenants about how to get rid of the mold and about the structural and behavioral factors that can cause mold. They provide tenants and owners with educational materials developed by the state Health Department and the U.S. EPA. In addition, officals note that when the health department finds pest infestation problems in the homes of people with respiratory illness, it will inquire as to what kind of pesticides are being used and advise owners to switch to pest control methods (such as gel baits) that will not aggravate respiratory problems. When the Health Department receives an IAQ-related complaint, and inspectors learn that there is an asthma sufferer in the home, they may use a special inspection checklist developed for the agency's healthy homes project.

Stamford's Healthy Homes project is funded by an $850,000 grant from the U.S. Department of Housing and Urban Development. Working with school nurses in Stamford's public schools, the health department compiled a database of children with asthma—a total of 8.5 percent of Stamford's 20,000 public school children. Using GIS, the agency then created a map overlaying the addresses of asthmatic children, census geographical data, housing violations, and licensing data for multi-family housing. For families selected to participate in the Healthy Homes project, the health department inspects and visits the home four times over the course of 12 months to help implement structural and behavioral changes to reduce asthma triggers. The program will provide up to $10,000 per unit to repair problems that may be associated with poor indoor air quality.

The agency has developed an inspection form titled "Breath of Fresh Air" that includes a wide range of IAQ-related problems and highlights asthma triggers and risk factors including: mold growth, non-rodent proof foundations and garbage facilities, dust, insects, roof leaks, plumbing leaks, inadequate mechanical and natural ventilation, torn and unclean carpeting, unclean kitchens and bathrooms, household chemical fumes, and secondhand smoke. Although the health department does not implement any laws or regulations addressing environmental tobacco smoke, the agency does provide smoking cessation programs and education, including educating

parents about the importance of not smoking around asthmatic children.

The health department combines code enforcement with its program of funding to repair and upgrade facilities. During inspections, health department officials ensure that all units to be included in the Healthy Homes project meet minimum housing standards. They cite violations that are the responsibility of the owner, identify problems that are caused by the tenants, and offer education and funding to remediate problems that might contribute to IAQ problems in the unit. Healthy Homes grants are given only with a guarantee that owners will keep their properties affordable to low income families for a stated period of time.

The 12-month program began in April 2002. Officials note that there has been much less demand for large grants for physical remediation projects than they expected. Most of the program activity has been focused on housekeeping and maintenance education.

III. CONCLUSIONS

Legal authority. Stamford's housing code, while similar to state law, provides greater detail in describing minimum conditions that might potentially apply to IAQ-related problems. In addition to general sanitation criteria, the local code contains requirements for ventilation, leak-free plumbing, extermination of pests, and general weathertightness. The code also requires bathroom surfaces that are non-absorbent and easily maintained in a sanitary condition. Both state and local law establish general nuisance authority that could potentially be brought to bear in situations involving serious IAQ-related problems.

The Stamford Department of Health and Social Services makes active use of these provisions in addressing housing conditions that may affect residents' health. Inspectors cite the general sanitation provisions of state and local law to address a range of unhealthy conditions, including moldy carpet. Inspectors also cite to specific code provisions that are related to underlying conditions, such as inadequate ventilation or plumbing leaks.

Although the health department applies current housing standards to indoor air quality problems, officials note that explicit statutory language addressing specific IAQ-related issues (such as mold) would enable the agency to handle indoor air quality problems more effectively.

Inter-agency coordination. In Stamford, the health department is responsible for enforcing the housing code. The result is a code enforcement program that integrates public health protection and building inspection and takes an active approach to addressing indoor air quality-related problems.

The dual health/housing role of the health department is reflected in its Healthy Homes project, which has brought financial and technical assistance to bear in addressing housing code violations that affect occupant health. The agency has not bifurcated the healthy homes assistance and its code enforcement work; rather, the agency has sought to integrate these activities to improve housing conditions. Indeed, the inspection sheet that was developed for the project is also used by inspectors for regular inspections in cases where the complaint includes an IAQ-related problem and the agency has information that there is an asthmatic child in the home.

CHAPTER EIGHT
OBSERVATIONS AND CONCLUSIONS

The problem of aging, sub-standard rental housing is well documented, and the problem is especially acute in housing that is affordable to lower income families. Poor indoor air quality can result from a variety of different housing conditions and can have a direct impact on occupants' health, particularly those who suffer from asthma and other respiratory illnesses.

For many years, housing codes and other related laws and regulations have addressed the nexus between housing and health directly by setting minimum standards for sanitation and general fitness. Local governments play an important role in ensuring that these standards are met in residential rental properties. While laws vary from city to city and county to county, the experiences of the jurisdictions included in this report help to shed light on the opportunities and obstacles in using the code enforcement process to address indoor air quality problems in rental homes.

I. LEGAL AUTHORITY

Housing laws. State and local laws establishing minimum housing standards differ, but many such laws across the U.S. have similar features. All of the jurisdictions studied here have the following general provisions in their laws that can be used to address a variety of IAQ-related problems:

- basic sanitation and cleanliness (generally and for key structural components);
- ventilation (generally and for bathrooms/kitchens)
- pest control;
- adequate plumbing; and
- weathertightness.

Some of the above provisions—*e.g.*, pest control and weathertightness—are more amenable to consistent application. Implementation of others will differ somewhat, depending on the precise wording. For example, a provision requiring "leak-free" plumbing may prove more effective in preventing mold problems than a provision that requires plumbing to be maintained in good working order.

The provision that is perhaps subject to greatest difference in interpretation is the general requirement for sanitation and cleanliness. Most housing inspectors note that they seek to identify a specific cause for a particular IAQ problem and to cite the corresponding specific code provisions. Nevertheless, general sanitation requirements may come into play when a specific underlying cause cannot be readily identified during an inspection—for example, in some cases involving mold contamination. Only one of the jurisdictions studied here expressed serious reservations about whether this type of general sanitation provision provides adequate authority for citing mold contamination or another IAQ problem, absent a link to a more specific provision of the code. One of the jurisdictions studied makes broad use of such a provision—using it, for example, to cite moldy carpeting. Another jurisdiction uses related provisions (requiring that structural elements be maintained in safe and sound condition and that premises be maintained so as to not cause or produce a health hazard) to cite mold on ceilings, walls, etc. Officials in most of the jurisdictions studied noted that where cases are pursued in court, local officials generally find courts will uphold an IAQ-related violation if presented with adequate evidence. In one recent Connecticut court decision, the court held that due to mold contamination the premises were not in a "fit and habitable condition." Nevertheless, most officials interviewed believe that more explicit code language regarding mold and other IAQ problems would lead to more effective code enforcement.

Some of the housing codes examined here contain IAQ-related provisions that are less common. Most notably, two of the jurisdictions studied have laws that specifically mention mold. The housing code in Massachusetts requires that structural elements of a dwelling be free from chronic dampness, specifically defined as the regular and/or periodic appearance of moisture, water, mold or fungi. San Francisco recently adopted extensive housing code language addressing mold. The provisions establish both a general standard (including as a substandard condition "chronic or severe" mold contamination that causes a health hazard or structural damage) and specific requirements (mandating that

virtually all components of a dwelling, including carpeting, be maintained free of mold and mildew). While San Francisco officials note that they had authority to address mold prior to the legislative amendments, they also believe that the explicit code language affirming and describing that authority more fully will bolster enforcement.

Three of the jurisdictions studied have housing code provisions requiring non-absorbent surfaces in bathrooms and kitchens, and housing officials in these localities make use of this provision to address mold contamination on bathroom floors. One housing code requires that hazardous chemicals not be used in a way that poses a health risk, while another code prohibits the use of toxic materials in areas accessible to children. Two jurisdictions specifically prohibit the use of unvented heaters.

Housing codes typically do not mention other specific IAQ pollutants such as radon or environmental tobacco smoke. (Commonly regulated pollutants such as lead and asbestos were not addressed in this report.) While the local housing codes examined here are not currently used to address high radon levels, some general provisions of those codes (*e.g.*, those prohibiting conditions that endanger health) could potentially be applied to cases involving high levels of radon. Health codes and landlord-tenant codes might provide alternative and more useful vehicles for pursuing remediation, though there are a number of potential pitfalls to such an approach. *See generally* Tobie Bernstein, *Radon in Rental Housing: Legal and Policy Strategies for Reducing Health Risks*, 26 ELR 10466 (September 1996). With respect to environmental tobacco smoke and multi-family housing, most local officials interviewed do not feel they have a regulatory role to play, although some use specific code provisions (*e.g.*, those requiring ventilation) to address the problem in appropriate circumstances. Here too, the general health-related provisions of many local housing codes could potentially be applicable to buildings in which occupants were regularly exposed to environmental tobacco smoke, though the provisions are not currently being used in this manner.

Pesticides are addressed indirectly in one of the housing codes examined here. The Massachusetts Sanitary Code requires that pesticide applications be carried out in accordance with state law, which in turn requires prenotification to tenants. California state law also requires notice of pesticide applications.

Nuisance law. All of the jurisdictions studied have nuisance provisions that establish authority to take action when the condition of residential property is harmful to health. Local health agencies use this general authority to address a variety of IAQ-related conditions, particularly pest infestation and mold contamination. Often, health agencies cite these general nuisance provisions along with other general and specific provisions of the housing code. Only one jurisdiction, San Francisco, has a nuisance law that mentions specific IAQ-related problems (pest infestation and mold) as falling within the definition of a nuisance.

Landlord-tenant law. State landlord-tenant laws also provide for citizen (tenant) enforcement to address substandard housing, by establishing causes of action and a range of remedies. Massachusetts' law in this area is an example of an expansive provision of legal tools for tenants. Nonetheless, in Boston as in other jurisdictions studied, there are significant obstacles to tenant use of these remedies, including a shortage of legal assistance for low-income tenants.

Conclusion: Legal Authority. Many, if not most local jurisdictions in the United States have some form of general or specific authority under housing and nuisance laws to address a range of IAQ- related problems. This authority applies to both publicly owned and privately owned rental properties. Where state and local policies lack specificity and agencies are unable or unwilling to make effective use of general provisions, policymakers and regulators should consider clarifying the policies in order to promote more consistent and thorough enforcement. The code provisions discussed here—from specific directives regarding mold and dampness to requirements for leak-free plumbing and prohibition of unvented heaters—provide models that have been used successfully.

II. INTER-AGENCY COORDINATION

Separate housing inspection and health agencies. Where the local housing inspection agency is separate from the agency that addresses public health and IAQ problems, collaboration between these agencies is very important to ensuring that housing laws are implemented to address health concerns. Coordination between the agencies is particularly important where the health department plays an enforcement role as well, as is the case in San Francisco and Boston. The health agencies tend to take a stronger role in cases involving serious health concerns, but in general these jurisdictions rely on an informal system of case referral and coordination. In a given case, the health department may provide consul-

tation or may conduct IAQ testing if necessary. In Boston, the housing inspection agency has established a separate enforcement initiative for cases involving severely asthmatic individuals and relies heavily on collaboration with its sister public health agency. In all three jurisdictions with separate housing inspection agencies, the health departments play an important role in providing training and education to housing inspectors.

Unified housing and health agency. In two of the jurisdictions studied, housing code inspections are the sole province of the general public health agency. In both cases, the health officials who conduct code enforcement are agency staff with considerable expertise in indoor air quality issues. In Marion County, for example, the health department has created a special IAQ inspection unit. In Stamford, housing inspectors are also involved in a healthy homes project that focuses on addressing asthma triggers. The institutional unification of housing and health roles in this way is reflected in inspection programs that make full use of existing legal authority to see that IAQ problems in housing are addressed in a more comprehensive manner. For example, both jurisdictions use general requirements for sanitation and sound structures to address mold and moisture issues.

Conclusions: Inter-agency coordination. Depending on the institutional framework within which code enforcement takes place, the experiences of the jurisdictions examined here are instructive for enhancing interagency coordination.

In jurisdictions where the local housing inspection agency is separate from the general public health agency, both agencies should take steps to ensure regular consultation and collaboration between the agencies in addressing IAQ-related problems. This collaboration could take the form of case-specific consultations or the establishment of an inter-agency working group, and should be accompanied by the ongoing exchange of information and technical assistance.

Whether or not health and housing inspection functions are unified, local jurisdictions should consider the establishment of a specialized housing inspection program to address IAQ cases or cases involving families with serious asthma and other respiratory illnesses. Such programs should focus both on using the code enforcement process to remedy violations, and providing outreach and education to owners and tenants regarding practices that can prevent IAQ problems in the future.

III. OBSTACLES TO ENFORCEMENT

Many of the obstacles to pursuing enforcement of IAQ problems in rental dwellings are related to the general shortage of decent, affordable housing. Marginal properties may be more difficult to improve through the code enforcement process, and tenants with few housing options may not be in the best position to pursue enforcement. Two obstacles that are more directly related to IAQ issues emerged from the jurisdictions studied.

Limited resources. State and local agencies across the country are faced with tight budgets and the need to make difficult program decisions. Funding constraints may particularly affect indoor air quality programs in local health departments that are pressured to limit programs to core services. Even within individual states, there is considerable variation in the extent to which local health agencies address indoor air quality, due in large part to limited resources. Without such capacity to address IAQ problems through education, training and/or inspections, local communities will be less effective at using minimum housing standards to address IAQ- related health hazards.

Lack of requirements or guidance for fixing a problem. Although state and local laws provide substantial authority for addressing mold and other IAQ-related problems in rental housing, none of the jurisdictions studied have developed requirements or guidance documents that establish procedures for remediating problems such as mold. The lack of guidance means that even after citations (or court orders) are issued requiring a problem to be fixed, the steps taken to address the violation sometimes do little more than delay its recurrence. The failure to take adequate remediation measures may not itself violate state or local law, and may not reflect bad faith on the part of the owners. At least one of the programs studied here seeks to address this need by providing somewhat detailed recommendations regarding actions that owners should take to correct a violation.

Conclusion: Obstacles to enforcement. The ability of local health departments to address IAQ problems is vital to improving indoor air quality in rental housing. State and local governments should work together to strengthen local capacity in this area. To make efficient use of limited resources, local governments should also consider developing a working group or other informal body to exchange information and coordinate resources for addressing indoor air quality in the housing inspec-

tion process. Including medical institutions and community organizations that have expertise in medical and IAQ issues can also bring additional resources to bear on addressing—and, more importantly, preventing—IAQ problems.

State and local health and housing agencies should consider creating and disseminating to property owners formal or informal guidance on remedying mold and moisture-related problems, in order to help ensure that violations cited by code officials are addressed effectively. In the area of mold, a variety of existing materials offer a starting point for providing guidance to owners. Similarly, because state and local laws may not provide many protections against the use of pesticides, agencies should follow the lead of some of the jurisdictions studied and provide information to landlords and tenants on integrated pest management practices. To complement any formal educational guidance documents provided, housing citations should include as much detail as possible regarding the proper measures for correcting violations.

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