

Information Sheet 9: Considering Environment and Housing Issues through Comprehensive Planning and Ordinances



Metropolitan Design Center

Version 1.0

DESIGN FOR HEALTH is a collaboration between the Metropolitan Design Center at the University of Minnesota and Blue Cross and Blue Shield of Minnesota that serves to bridge the gap between the emerging research base on community design and healthy living with the every-day realities of local government planning.

METROPOLITAN
DesignCenter

College of
Design

UNIVERSITY OF MINNESOTA

Metropolitan Design Center
1 Rapsom Hall
89 Church Street
Minneapolis, MN 55455
612.625.9000
www.designcenter.umn.edu

© 2007

Metropolitan Design Center
College of Design
University of Minnesota

Permission is granted for nonprofit education purposes for reproduction of all or part of written material or images, except that reprinted with permission from other sources. Acknowledgment is required and the Design Center requests two copies of any material thus produced.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Design for Health is collaboration between the Metropolitan Design Center at the University of Minnesota and Blue Cross and Blue Shield of Minnesota.

The following people were involved in the development of the Information Sheet Series:

Series Editor: Dr. Carissa Schively

Contributors: Dr. Ann Forsyth, Dr. Kevin Krizek, Dr. Carissa Schively, Laura Baum, Amanda Johnson, Aly Pennucci

Copy Editor: Bonnie Hayskar

Layout Designers: Anna Christiansen, Tom Hilde, Kristen Raab, Jorge Salcedo, Katie Thering, Luke Van Sistine

Website Managers: Whitney Parks, Joanne Richardson

Suggested Citation: Design for Health. 2007. Information Sheet 9: Considering Environment and Housing Issues through Comprehensive Planning and Ordinances. Version 1.0. www.designforhealth.net

Overview

Design for Health's *Planning Information Sheets* series provides planners with useful information about opportunities to address important health issues through the comprehensive planning process and plan implementation. The series addresses a range of health issues that are relevant to many communities and can be efficiently and effectively integrated into local plans and policies. This ninth information sheet discusses a number of opportunities that planners have to address environment and housing issues through planning and policy approaches.

Key Points

- Environment and housing issues include a broad range of topics, such as interior and exterior housing quality (building materials, crowding, location of housing, and presence of toxins), air quality, water quality, contaminated and/or potentially contaminated sites—to name just a few. Some of these dimensions are covered in other aspects of the designforhealth.net project (namely water quality, air quality, social capital, and mental health). While water and air are the primary conveyances for pollutants, exposure can also occur through contaminated soil and direct exposure to toxins and chemicals in home or workplace environments.
- This information sheet highlights environment and housing aspects that directly relate to aspects of the built environment where planners have influence. We focus specifically on two overarching planning-related themes: contaminated or potentially contaminated sites (brownfields) and housing quality. More specifically, we look at how these themes relate to human health—physically, psychologically and socially.
- Many of these issues are monitored not only at a local level but also at federal, state and regional levels. There are a variety of resources, as a result, for both financial and educational assistance to deal with these issues.

- Environment and housing issues are often tied to the notion of environmental justice—the proposal that certain sub-populations are exposed to a greater share of environmental and human health impacts. While research is mixed, we showcase a few examples of how communities are dealing with this situation.
- There are a variety of ways to address environment and housing issues: embedded within traditional comprehensive plan elements, such as land use, housing, economic development, or the environment; incorporated as a sub-section within less traditional comprehensive plan elements, such as community character or neighborhood design; or more fully explored through master plans that focus specifically on these topics.
- Environment and housing issues can be addressed through specific implementation strategies that include: providing public financing for infill development; developing urban design ordinances that consider alternative uses for contaminated sites; creating informative handbooks for residents and property owners who are affected by toxins; developing ordinances that separate incompatible uses; and requiring the use of environmental impact assessments (EIA) or alternative area wide review (AUAR) to identify and mitigate potential environmental and health impacts.



Brownfields tend to be part of infill development strategies for both central cities and older suburban communities.

Understanding the Relationship between Environment, Housing, Health, and Planning

Environment and housing issues include a wide range of topics—many of which are covered in previous information sheets. Here, we focus on the intersection of planning and health by discussing housing issues and contaminated or potentially contaminated sites. These topics are complex; therefore, we focus on the areas where planners have influence.

Brownfields

As the U.S. Environmental Protection Agency (EPA) points out, brownfields pose a threat to environmental and human health in the following ways (2007a):

- **Safety.** Abandoned and derelict structures, open foundations, other infrastructure or equipment that may be compromised due to lack of maintenance, vandalism, deterioration, controlled-substance contaminated sites (i.e., methamphetamine labs), or abandoned mine sites may all pose safety risks.
- **Social and economic factors.** Blight, crime, vagrancy, reduced social capital or community connectedness, reductions in the local-government tax base, and private-property values that may reduce social services are all social and economic problems sometimes created by brownfields.
- **Environmental health.** Potential environmental dangers can be biological, physical or chemical, and can be the result of site contamination, groundwater impacts, surface runoff, migration of contaminants, or wastes dumped on site (EPA Tools & Technical Information: Protecting Public Health 2007, no page number).

While the EPA claims that human health is less of a concern, the agency is currently funding communities to focus on the impacts of brownfields, particularly in disadvantaged communities and among sensitive populations. Brownfield funding from the EPA may be used to “monitor the health of populations exposed

to one or more hazardous substances from a brownfield site or enforce any institutional control used to prevent human exposure to any hazardous substance from a brownfield site” (EPA 2007b).

Early on, planning played an important role in helping communities respond to incompatible uses that posed problems for human health (e.g., brickyards next to single-family homes). Zoning was the preferred tool used to separate uses and decrease exposure to contaminants and noxious land uses. Human health has become less of a priority as today’s planners tend to focus more on the economic and environmental health of the community. Policy and plan implementation for brownfields, for example, focuses on economic development and growth management since brownfield redevelopment is one tool for combating sprawl, encouraging infill development and increasing the tax base of a community.

Brownfields have traditionally been more of a problem for older industrial cities; as lower-density communities begin to age, however, this will be an issue as well, especially since many of the industrial sites have relocated outside of central cities where land is cheaper.

For more brownfield information, please visit the EPA at <http://www.epa.gov/brownfields/bftaxinc.htm>. The site includes: basic information about brownfields, funding opportunities, laws and statutes, initiatives, partnerships, and tools and technical information. There is specific information related to tax incentives, grant opportunities, case studies, job training, maps that details the location of funded projects, fact sheets, information on protecting human health, resources for land use and institution controls, and more. In addition, state government offers similar information on financial, educational and technical assistance. For Minnesota, information is available from the Minnesota Pollution Control Agency (MPCA) at <http://www.pca.state.mn.us/cleanup/brownfields.html>.

Housing

Where people live, the quality of their housing, the places where their children play, and other factors may expose them to pollutants and significant health risks, such as lung disease, lead poisoning, cancer, reproductive impacts, birth defects, headaches, and more. Housing is a complex issue and there is a range of topics to be considered, such as housing quality, building materials (use of lead paint), maintenance (presence of mold), crowding, adjacent land uses, diversity of housing stock, and site selection. There has been a great deal of health-related research on these issues, particularly in relation to specialized groups (children and the elderly); the research is mixed, however. Evans (2006) has recently released a comprehensive literature review that looks at child development and the physical environment in relation to noise, toxins (lead, mercury, PCBs), crowding; and housing and neighborhood quality in relation to educational growth, mental health and physical health. Research varies due to a variety of methodological issues, such as the role of self-selection and the issues of showing causation; there are a number of important themes, however, that emerge from the literature:

- Heavy metals, inorganic solvents and pesticides commonly found in the ambient environment affect child development (e.g., exposure to lead leads to reduced IQ, higher drop-out rates, greater reading deficits, etc.).
- Chronic exposure to transportation noise may lead to problems for cognitive processes, mental health and motivational issues.
- Crowding, in relation to health, is less about density of structures (houses per acre) and more about the number of people per room; it may lead to social withdrawal, mental health issues and elevated levels of aggression (Evans 2006; 424, 427, 428, 429, 430).

The effects of lead are well documented. According to the Centers for Disease Control and Prevention (CDC), in 1978 there were 13.5 million children in the United States with elevated blood lead levels (EPA 2007c). By 2002, that number had dropped to 310,000 children (EPA 2007c). This decreased number is in response to federal work done to phase out lead in gasoline, reduce lead

in drinking water, reduce lead in industrial air pollution, and ban or limit lead used in consumer products, including residential paint (EPA 2007c). States and municipalities have set up programs to identify and treat lead-poisoned children and to rehabilitate deteriorated housing.

While there are stringent laws in place, lead is still an issue. Lead comes from paint chips, but also from paint dust that can accumulate on windowsills, doors, door frames, stairs, railings, porches, fences, etc.). Lead in the soil can also be problematic when children play in it or bring it into homes. In general, lead is found in the following places (EPA 2007d): paint (pre-1978 homes), soil, household dust, drinking water, or at work. People can absorb it by breathing in lead dust, eating paint chips or soil, or putting things in their mouths that have lead on them. Lead is particularly dangerous for infants and children, because their nervous systems are more sensitive. High levels of lead in children can lead to damage to the brain and nervous system, behavior and learning problems (such as hyperactivity), slowed growth, hearing problems, and headaches (EPA 2007d). Adults can suffer from difficulties during pregnancy, high blood pressure, digestive problems, nerve disorders, memory and concentration problems, and muscle and joint pain (EPA 2007d). For more information on lead, please visit the National Lead Information Center of the EPA Web site at <http://www.epa.gov/lead/>.

Toxins are far better understood than crowding. Crowding is a controversial issue, because it is often equated with density. Planners typically deal with the number of housing units in a given area. This is not the same as the number of people per room or per square foot of housing unit. So a farm house on a large farm may be crowded if there are several people in each room; while an apartment building with hundreds of units per acre may have no crowding if there are a lot number of people per room (Forsyth et al. 2007). Crowding can have physical, mental and social consequences for humans; however, it depends on a number of individual, environmental and social factors (Baum and Paulus 1987, 1: 535-61.). Neighborhood effects are much less understood.

Please see the reference list for information on how to access this helpful review from Baum and Paulus.

For more research-based information on the relationship between human health and environmental and human health, please also see the DFH key questions series.

Planning for Housing and Environmental Quality

Brownfields

As mentioned above, brownfields are indirectly linked to human-health topics, such as water quality and air quality. For more information about these issues, please see the related DFH key questions and information sheets.

Euclidean zoning, one of the earliest land-use controls, focused on separating conflicting land uses. Many communities still use this approach today, but have expanded it from simply separating land uses to addressing a broader range of planning issues, including economic development and growth management. Planners are further expanding their purviews by linking human health with a range of planning issues. One of the areas of focus in this information sheet, contaminated or potentially contaminated sites, is an example of a planning issue that straddles these different concerns: land use incompatibility, economic development, growth control, and health improvement. The State of Wisconsin, for example, passed a “Smart Growth” law that directs municipalities on how to approach their comprehensive plans. Part of this state-level mandate is that municipalities “shall evaluate and promote the use of environmentally contaminated sites for commercial or industrial uses” (Wisconsin DNR 2002, 1). In response to this directive, the Wisconsin Department of Natural Resources (DNR) released a fact sheet about how brownfields could be interwoven into the plan elements of land use and implementation; however, it focuses mostly on the element related to economic development. The emphasis is mostly about how to clean-up

abandoned properties so that the city can collect taxes, provide more jobs and re-use existing infrastructure.

The Wisconsin DNR’s fact sheet also touches on the relationship between brownfields and groundwater. It recommends that industrial parks and roads be located away from (down-gradient or side-gradient) areas where wells may be located. The goal is to protect drinking water, as spills tend to occur more frequently near industrial parks and roads. The DNR also recommends two ways that communities can evaluate and promote brownfield redevelopment in their comprehensive plans, including inventorying brownfields in order to create a shared database and providing environmental-liability exemptions, financial incentives, and DNR assurance letters (Wisconsin DNR 2002).

The DNR offers several types of assurance letters; one assurance letter, for example, addresses liability issues by clarifying who is responsible for contamination and clean-up of a property in relation to property transactions and the physical clean-up of these brownfields, while another letter clarifies the liability of property owners, lessees or prospective purchasers when contamination is migrating onto a property from an off-site location (Wisconsin DNR 2002, 6-7).



The Twin Cities Army Ammunition Plant is an example of a brownfield site in Arden Hills, MN that is being redeveloped.

Lowell, Massachusetts, deals with brownfields through both its plan and plan implementation efforts. Brownfields are mentioned within three elements of the comprehensive plan: Unique Waterfront Environments, Economic Growth and Sustainability (City of Lowell 2003). In Waterfront Environments, one of the recommendations is to “identify significant opportunities to encourage the redevelopment of former industrial and other underutilized waterfront property for unique residential and mixed-use projects aimed at creative-class professionals, empty-nesters and active seniors” (City of Lowell 2003, 65). The plan includes supportive action steps that are indirectly or directly related to brownfields: take inventory of all redevelopment opportunities; revise zoning and land-use regulations to encourage development; and use federal and state funding for brownfields to test, remediate and convert abandoned industrial property for mixed-use developments (City of Lowell 2003, 65). What is particularly interesting about this policy is that it is designed to target certain groups of people—namely creative types, baby boomers and seniors. This speaks more to economic health than human health.

In the Economic Growth element of the comprehensive plan, the redevelopment of brownfields is part of the statement of purpose (along with improving quality of life and offering amenities). The statement notes that this type of redevelopment will be used to help diversify its economic base by attracting well-educated professionals and small- to mid-sized employers (City of Lowell 2003, 87). Unlike the above example, one of the recommendations and supporting action steps is purely focused on brownfields; it says, “The City of Lowell should redevelop remediated brownfield sites for the development of industrial parks aimed at small and mid-sized companies.” The action steps include:

- modify incentive programs and development regulations to encourage sustainable economic development activities;
- continue to seek federal and state funding for additional brownfields projects;

- identify and consider taking properties in severe tax delinquency that could offer potential for commercial and light industry after remediation;
- facilitate the acquisition, assembly and clean-up of larger parcels required for industrial redevelopment;
- assist private developers with interest in brownfields redevelopment with a toolbox of available incentives and coordination of assembling properties; and
- establish the powers of a Redevelopment Authority particularly with the power of eminent domain over designated areas where land assembly is essential to viable industrial redevelopment.

Source: City of Lowell 2003, 89

In the chapter on sustainability, there is a recommendation to specifically identify opportunities for pilot projects on brownfield sites devoted to sustainable development in order to look at alternative energy sources that would lead to cost-cutting and efficiency standards. The action steps, again, include: altering zoning and land-use designations that were originally for industrial development, offering developer incentives for such projects, locating additional funding sources for brownfield sites, and further establishing Lowell as a national model for brownfields development (City of Lowell 2003).



There are acres of brownfields along the Phalen Corridor in St. Paul, MN that are currently being cleaned up for future development.

Metropolitan Design Center

Lowell has implemented many of the action steps included in its plan. The Jackson Appleton Middlesex Urban Revitalization and Development Project (JAM), the Acre Plan and the Tanner Initiative are all examples of actual brownfield development projects where a variety of planning tools were used to move these projects along. Efforts included charettes on the strengths and challenges of brownfield projects, zoning changes from industrial to residential and/or commercial and/or mixed use, development review, and financing strategies for clean-up. These three projects were partially funded by the EPA and make up a large portion of the Lowell Brownfield Redevelopment Program, which involves staff resources from both the planning department and the economic development office. While brownfields are related to health, many communities, like Lowell tend to focus more on the financial rewards and infrastructure improvements.

MPCA is cognizant of the potential financial returns for Minnesota; however, it is more interested in human health. MPCA conducted a dump assessment study in 2001, for example, that showed that most old dumps under current land-use conditions have low risks to public health. There are some existing human-health problems, however, including:

- physical hazards, such as scrap metal and junk, can injure wildlife and people who use the site (whether they are trespassing or not);
- surface soils may be contaminated with hazardous materials and may pose a risk to those in direct contact with these soils;
- groundwater may be contaminated near the site; and
- storm-water runoff from dumps near water bodies can pollute nearby rivers, streams, lakes, or wetlands.

Source: MPCA 2001, 1

MPCA states that if further development were to occur it would possibly increase risk to public health and the environment; therefore, it recommended the following best management practices to be incorporated into local ordinances

- Leave the dump and adjacent land as undeveloped, open space.
- Discourage development on or around the dump.
- Close or limit access to the site and prohibit refuse disposal.
- Remove dangerous physical hazards and surface debris.
- The entire surface of the dump should be covered with clean fill that supports vegetation. In areas of the dump that have not been previously covered, or show bare soil, add two feet of clean fill.
- Plant vegetation on the soil surface.

Source: MPCA 2001, 1-2

Brownfields can also be addressed through the development of plans that are specifically about the topic at hand. The Portland Brownfield Initiative is a pilot project, for example, funded by the EPA to promote brownfield redevelopment in the North/Northeast Enterprise Community and in the Waterfront Communities of this Oregon city. The city developed three brownfield action plans related to the following topics: building partnerships to revive underused land, creating strategies for land use and growth management, and reviewing the existing framework to identify barriers to revitalization (City of Portland 2007).



Some brownfields have been restored to create recreational space and other natural spaces.

Metropolitan Design Center

Portland also focused on the issue of environmental justice—a topic that is discussed in other DFH information sheets—specifically addressing concerns about the loss of economic growth for certain sub-populations (City of Portland 2007). Public health is covered in the action plan on the regulatory framework. One action item calls for the identification of mechanisms to ensure that public health is maintained over the long term (City of Portland 1999, 10-11). Some of the tasks include:

- Create a unifying (linked) database within the City that provides access to the following: site inventory, current use (which is tracked and updated).
- Identify public-health indicators, environmental costs, existing “institutional controls,” such as zoning and building codes.
- Identify a monitoring entity and develop an enforcement plan for long-term institutional controls; integrate this activity with the comprehensive planning and community planning processes (i.e., include an environmental review section in the Community Plans).
- Consistent with Task 1 above and Regulatory Enhancement Action 1, respond to community concerns with education about and tracking of relative risks, site-specific risks, site-specific public-health indicators; use a community liaison as part of the education process.

Source: City of Portland 1999

Other action steps are related to marketing, outreach, financing, community involvement, and education. The action plan also provides information about resources from the Oregon Department of Environmental Quality (DEQ) Web site, where it has guidance documents related to such topics as land-use consideration, conducting human-health risk assessments, use of institutional controls, and site-specific assessments of brownfields. The guidance document on land-use controls, for example, is a “framework to collect and evaluate information regarding current and anticipated future land uses at the brownfield site and surrounding properties in order to determine human exposure to risk while selecting protective remedial

options” (1998, 3). For more information visit <http://www.deq.state.or.us/pubs/reports.htm>.

Like Portland, the City of Nashville, Tennessee, has developed a comprehensive plan specifically for brownfields entitled, “The Comprehensive Plan for the Metropolitan Nashville Brownfield Program.” The plan has been broken down into its individual chapters: program overview, historical perspective, needs assessment, case studies, and program framework, program organization, program implementation, EPA pilot-study area, and long-term benefits and evaluation. Program goals include

- clean up pollution caused by contaminated properties;
- revitalize disadvantaged neighborhoods adversely impacted by brownfields;
- reduce urban sprawl by eliminating barriers to brownfield redevelopment;
- optimize the use of metropolitan government resources through the coordinated efforts of existing department functions;
- use government resources to leverage private investments to meet the combined needs of the community and the marketplace; and,
- balance the need for timely, measurable success and environmental justice.

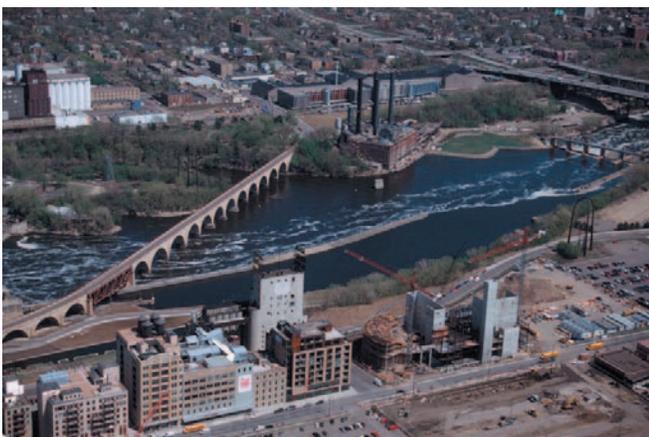
Source: City of Nashville 2002, chap. 1-4

In the needs-assessment element, there is a section that reviews land use and zoning data, which determines who qualifies for this program; it analyzes all commercial and industrial zoning codes, identifies low-income neighborhoods and redevelopment districts, and proposes criteria to recommend priority planning areas. The implementation section includes information about assembling a project task force, creating a funding plan (citing potential federal, state and local resources), developing a demonstration pilot, performing an environmental assessment, and conducting priority planning (City of Nashville 2002, chap. 6). The section on long-term benefits and measurability tools shows that long-term benefits are related to human health, environmental health, economic health, and sprawl. The measurement section looks at whether or not wealth and quality of life have

been affected by studying household income increases, FDIC deposits, unemployment rates, property tax revenue, etc. (City of Nashville 2002, chap. 7).

Housing

A housing element within a comprehensive plan or a more specific housing master plan often includes an assessment of current housing stock; policies and programs related to housing for the preservation and development of units; and an implementation portion related to affordable housing, zoning, subdivision ordinances, building codes, fiscal tools, etc. (Metropolitan Council 2006). Zoning, housing and building codes are among the implementation tools designed to deal with a range of issues, such as design standards, building heights (minimums and maximums) fire protection, sewer infrastructure, bulk and density, allowed uses, etc.—all of which are important topics. Here, we focus on the areas of housing related to health that planners can influence, such as toxins, crowding and incompatible uses. As mentioned earlier, many of these are covered in earlier information sheets. Please refer to these DFH documents for a more comprehensive view of housing issues (e.g., decentralized wastewater systems and their proximity to industrial sites, location of freeways to housing, etc.). Also, since brownfields are often cleaned-up and revitalized as mixed-use projects, many of the issues addressed above relate to the housing topics described here.



The Historic Mills district in Minneapolis, MN is part of an economic development strategy for the city. Once an area with contaminated industrial areas, it is now a popular mixed-use development area.

The City of Portland, Oregon, has a housing element within its comprehensive plan. It includes a section on housing quality where the goal is to encourage the development of housing that exceeds minimum construction standards. Some of the objectives include:

- Promote housing that provides air quality, access to sunlight, and is well protected from noise and weather.
- Ensure that owners, managers and residents of rental property improve the safety, durability and livability of rental housing.
- Protect housing from excessive off-site impacts, including pollution, noise, vibration, odor, and glare.
- Limit conflicts between existing business areas and housing caused by traffic and parking, noise and signage.

Source: City of Portland 2006

In addition to housing quality, there are sections on housing supply, safety and quality, opportunity, and affordability.

The general plan for the City of San Francisco, California, has a housing element in which one policy is to “increase the availability of units suitable for users with supportive housing needs” (Policy 8.6). This section includes objectives and policies related to housing supply, homelessness, housing density, design, and quality of life, and housing needs. It recommends that the City also seek to reduce institutional barriers to development of innovative forms of housing; for example:

In addition to the disabled, other households with special needs have difficulty finding suitable housing in San Francisco. Many large families, especially those newly immigrated to the United States, are crowded into units designed for much smaller households. New housing construction, especially those including units to accommodate large families, should be encouraged (City of San Francisco 2004).

This is one of several comments found in this document that deals with internal crowding issues from a policy standpoint.

Children are a sub-group that is often overlooked when dealing with housing issues and health. There are a number of ways that housing issues are addressed in the Detroit, Michigan, Master Plan. In the health and service section, one of the goals is to reduce health risks for young children. One policy is to remove and mitigate the negative effects of environmental household contaminants, such as lead paint and asbestos (City of Detroit 2004). The presence of contaminants in the home and insufficient preventative health measures also inhibit proper child development (2004, 17).

The City of Chicago, Illinois, moves beyond a policy-based approach by sponsoring an ordinance called “Lead-bearing Substances” that includes the following sections: lead-bearing substances; maintenance of residential buildings, child-care facilities and schools; sale, transfer or distribution of items containing lead-bearing substances; inspection of establishments; and enforcement and violation (2006). In the section on maintenance, it states that lead-bearing substances should not be used in the following places :

- in or upon any exposed surface of a dwelling or dwelling unit;
- in or around the exposed surfaces of a residential building, child-care facility, school or other structure frequented by children;
- in or upon any figures or other objects used, installed or located in or upon any exposed surface of a dwelling or residential building, child-care facility, school, or intended to be used, installed or located, and that in the ordinary course of use, are accessible to and chewable by children;
- in or upon any toys, furniture or other articles used by and chewable by children; and
- within or upon a residential building or dwelling, child-care facility, school, playground, park or recreational area, or other areas regularly frequented by children.

Source: City of Chicago 2006, 7-4-020

The City of Worcester, Massachusetts, has created an assistance program to remove lead paint where “money, given as a grant, loan or tax credit, is given to home owners who cover or remove lead paint hazards of their property”

(2006). The goal of the program is to reduce the risk to children. There are different requirements for types of financial assistance. The lead-removal grant, for example, must be used for lead-paint testing, lead-paint removal or covering, or tenant relocation (2006). This targets owner-occupied low-income families or for property owners who lease to low-income families. These grants range from \$10,000 for a single-family home to \$8,000 per unit in a multi-family home.

As mentioned earlier, lead is an issue that has been dealt with on the federal, state and local levels of government. It is something that planners need to consider; however, very rarely, is it something that they can affect but it is something that they should be cognizant of particularly in relation to land use and environmental decisions. For more information, planners can visit their local, county and state public-health Web sites. The Department of Health for the City of Francisco, for example, has a great deal of information about lead-poisoning prevention for property owners and landlords. It also includes information about the laws and ordinances for lead paint and construction.

Final Thoughts

This information sheet helps planners make connections between human health, environment and housing issues, and the built environment. This sheet builds on work done in other DFH information sheets by offering policy and plan implementation opportunities to address the topics of contaminated or potentially contaminated sites and housing quality. It also looks at how these themes affect sub-populations, such as children, as well as more disadvantaged groups through a discussion on environmental justice. This sheet provides specific examples on how to address a range of these issues.

References

- Baum, A., and P. B. Paulus. 1987. Chap. 14: Crowding. Handbook on environmental psychology. Daniel Stokols and Irwin Altman, eds. Melbourne, FL: Krieger Publishing Company.
- City of Chicago, Illinois. 2006. Lead ordinance. http://egov.cityofchicago.org/webportal/COCWebPortal/COC_ATTACH/LeadOrdinance_revDec06.pdf.
- City of Detroit, Michigan. 2004. Master plan of policies. http://www.ci.detroit.mi.us/plandevl/advplanning/pdfs/MPlan/MPlan_2004/Master%20Plan%20Revision%20-%20Citywide%20Policies.pdf.
- City of Lowell, Massachusetts. 2003. Comprehensive master plan. http://www.lowellma.gov/depts/dpd/master_plan/complete_masterplan.
- City of Nashville, Tennessee. 2002. Comprehensive plan: Metropolitan Nashville brownfield program. http://www.nashville.gov/mdha/bf_plan.htm.
- City of Portland, Oregon. 2007. Brownfield action plans. Portland Bureau of Environmental Services. <http://www.portlandonline.com/bes/index.cfm?c=35014>.
- _____. 2006. Comprehensive plan: Housing element. <http://www.portlandonline.com/shared/cfm/image.cfm?id=141401>.
- _____. 1999. Portland brownfield initiative: Brownfield regulatory enhancement action plan. <http://www.portlandonline.com/shared/cfm/image.cfm?id=72045>.
- _____. 1998. Portland brownfield initiative: Brownfield land use/growth management action plan. <http://www.portlandonline.com/shared/cfm/image.cfm?id=72043>.
- City of San Francisco, California. 2004. General plan: Housing. http://www.sfgov.org/site/planning_index.asp?id=41412.
- City of Worcester, Massachusetts. 2006 lead paint removal assistance. <http://www.worcesterresources.org/pages.cfm?contentID=7&pageID=2&subpages=yes&SecondLevelDynamicID=384&DynamicID=372>.
- Evans, G. W. 2006. Childhood development and the physical environment. *Annual Review of Psychology* 57: 423-51.
- Forsyth, A. J., M. Oakes, K. H. Schmitz, and M. Hearst. 2007. Does residential density increase walking and other physical activity? *Urban Studies* 44, 4: 679-97.
- Metropolitan Council, Minnesota. 2006. Land use plan: Housing. Local planning handbook. <http://www.metrocouncil.org/planning/LPH/LPHSect3.pdf#page=8>.
- Minnesota Pollution Control Agency (MPCA). February 2001. Best management practices for Minnesota's old dumps. <http://www.pca.state.mn.us/publications/c-clf1-01.pdf>.
- Oregon Department of Environmental Quality (DEQ). 1998. Final guidance: Consideration of land use in environmental remedial actions. Waste Management and Clean-up Div. <http://www.deq.state.or.us/lq/pubs/docs/cu/GuidanceConsiderationofLandUse.pdf>.
- U.S. Environmental Protection Agency (EPA). 2007a. Brownfields cleanup and redevelopment: Protecting public health. http://www.epa.gov/brownfields/tools/tti_pub_hlt.htm.
- _____. 2007b. Brownfields cleanup and redevelopment: Grants and funding. <http://www.epa.gov/brownfields/pilot.htm>.
- _____. 2007c. Lead in Paint, Dust, and Soil: Protect your child from lead poisoning. <http://www.epa.gov/lead/>.

_____. 2007d. Lead in Paint, Dust, and Solid: Basic Information. <http://www.epa.gov/lead/pubs/leadinfo.htm>.

Wisconsin Department of Natural Resources (DNR). March 2002. Brownfields and comprehensive planning. PUB-RR-679 Fact Sheet 15. Madison: Wisconsin DNR.