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Planning Information Sheet:

Influencing Mental Health with Comprehensive Planning and Ordinances

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Version 2.0

DESIGN FOR HEALTH is a collaboration between 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.

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Overview

The 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 information sheet provides insights for planners in understanding how mental health relates to the built environment and points to innovative approaches to planning for mental health.

Key Points

- Research consistently shows that direct contact with nature leads to increased mental health and psychological development. This is an areas where planners have influence particularly since depression and other mental health disorders are accounting for a larger share of health problems.

- Positive impacts on mental health only require viewing "a little bit of green." As a result, parks are not a focus of this particular information sheet, even though they have benefits related to other aspects of health, such as air quality, water quality and physical activity.

- Social capital or social networks are also related to mental health. Different kinds of environments seem to foster different kinds of social capital (e.g., trust is high in one kind of environment and political participation in another). The issues sheet on social capital gives ideas for creating a range of such environments.

- Key issue areas that planners can consider as they begin to address mental health through the planning process include providing small amounts of green. Strategies include promoting landscape-design guidelines; developing urban-forestry master plans; instituting zoning ordinances that protect, support and maintain green within the public realm; and revising the development review processes to consider sightlines from development projects.

- Mental health may be addressed in comprehensive planning in many ways. Approaches include integrating it into traditionally required elements, such as environmental resources and parks and open space, as well as optional elements, such as public realm and public health. Mental health might also be addressed in supplemental plans, including urban-forestry master plans and comprehensive tree plans.

- Mental health is not an isolated issue; rather, it is tied to many other health topics covered in the DFH materials. For more information, see the table on the next page.

Understanding the Relationships between Mental Health and Planning

As underscored in Design for Health's Key Question Series, green space or "nature" has been studied to explain its restorative effects on mental health and psychological development, and to show how it helps people recover from stress, deal with future stress and recover from illness and injury (Ulrich 1984; Parsons 1991; Ulrich et al. 1991). Understanding the relationship between the built environment and mental health is important, because depression and other psychological disorders are predicted to account for a large share of rising health-care costs (Maller et al. 2005). For planners, the existing research provides insights related to designing landscapes, the public realm, roads, and parks. Before turning to recommended approaches for integrating mental-health considerations into local plans and ordinances, it is important to provide a few key points for thinking about how mental health relates to the built environment.

Design for Health Planning Information Sheets addressing Mental Health

DFH Planning Information Sheet:	Topics covered related to accessibility:	Link:
Influencing **Mental Health** with Comprehensive Planning and Ordinances	▪ Seeing a little bit of green ▪ Maintaining natural spaces ▪ Integrating nature into communities	http://www.designforhealth.net/techassistance/mentalhealthissue.html
Considering **Safety** through Comprehensive Planning and Ordinances	▪ Traffic calming ▪ Shared streets ▪ Streetscape-design guidelines ▪ Pedestrian plans ▪ CPTED	http://www.designforhealth.net/techassistance/safetyissue.html
Promoting **Accessibility** with Comprehensive Planning and Ordinances	▪ Multimodal transportation systems ▪ Transit planning ▪ Specialized populations	http://www.designforhealth.net/techassistance/Accessibility.htm
Supporting **Physical Activity** through Comprehensive Planning and Ordinances	▪ Pedestrian and bicycle plans ▪ Community design	http://www.designforhealth.net/techassistance/physicalactivityissue.html

Seeing A Little Bit of Green

Studies consistently show that people do not have to actively use nature to benefit from it; rather, visual exposure is enough (Kaplan and Kaplan 1989). In other words, people can encounter nature not only by being in it, but by seeing it. A worker in an office building who can see a small tree-lined public plaza from their window, for example, may experience internal physiological changes, which lead to decreased levels of stress (Ulrich 1991; Moore 1981; Parsons et al. 1998; Tennessen and Cimprich 1995; Kaplan and Kaplan 1989). Moreover, positive effects of mental health only require a little bit of green (Kuo et al. 1998, 45). People do not have to be in a secluded area in a large multi-acre park, for example, to experience changes in mental health; rather a much smaller area can do the job (Kuo et al. 1998). This is important for planners who must balance their responsibility of increasing the number of health-related opportunities for their residents with limited public funds.

Maintaining Natural Spaces

Maintenance is important for users across all demographics (Talbot and Kaplan 1984; Talbot and Kaplan 1993; Forsyth and Musacchio 2005), which means that planners should prioritize the maintenance of these green spaces in addition to design and implementation. Maintained ground covers, for example, such as lawn or other neat plantings, along with water, large trees with dense upper canopies that don't obstruct eye levels, and lack of urban noise, are preferred by a wide number of people (Ulrich 1984; Schroeder 1989; Gobster 1994; Ulrich 1991; Forsyth and Musacchio 2005). There are differences, however, among groups, with some people preferring highly-maintained areas and others a wilder look.

Integrating Nature into Communities

It is, thus, important to consider that different groups of people have differing views of what constitutes nature in the built environment, with variation by education level, age, ethnicity, profession, residential location, etc. (Forsyth and Musacchio 2005). Ecologists, for example, see disorderly aspects of parks or natural areas to be positive signs of a natural habitat; however, such characteristics as fallen trees or overgrown vegetation are seen by the public as unsafe (Lindenmeyer and Franklin 2002; Bixler and Floyd 1997; Forsyth and Musacchio 2005). Another research study surveyed 900 Black, Latino, Asian, and white people about park management at Lincoln Park, Chicago, in order to identify certain attributes preferred by different racial and ethnic groups. In this study, "Asians mentioned the park's scenic beauty more often than other groups, Latinos the cool refreshing "lake effect," and whites the trees and other park vegetation. Blacks said less about the natural environment; they instead focused on facilities and maintenance aspects, park activities, the zoo, and sports orientation" (Gobster 2002, 151). With these conflicts in mind, designers recommend strategies that, "set expected characteristics of landscape beauty and care side by side with characteristics of ecological health" (Nassauer 1992, 248; Forsyth and Musacchio 2005, 37).

Research also finds that people prefer natural (i.e., green) environments to urban ones; however, these studies have typically contrasted unvegetated complex urban scenes with more tranquil natural ones (Parsons 1991; Newell 1997; Herzog et al. 2000). It seems people prefer scenes that are moderately complex, and scenes of greenery have that character. It is important to think about the different users/viewers of green in terms of what is seen as natural and how they respond.

Planning for Mental Health

This section outlines approaches that communities can use to plan for and to implement ordinances that will create opportunities to positively affect mental health. Because mental health only requires a limited amount of green space, we focus specifically on landscape-design standards, master plans, tree-related ordinances, and site-plan review standards, which have the potential to strengthen the relationship between mental health and the built environment.

Importance of Seeing a Little Bit of Green

As mentioned above, people do not need to actively engage with nature nor do they need large quantities of green to benefit; rather, all they need is to visually connect with small amounts of green. In this context, a planner's toolkit is flexible in terms of how to develop policy and build implementation techniques to create opportunities to expose people—both outdoors and indoors—to natural experiences where they can escape, recover and rejuvenate. Here, we list a few examples that planners can use to inform efforts to link mental health and the built environment.

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Trees can be inserted into central city landscapes. This example is from central Tokyo, Japan

A parks and open-space element of a comprehensive plan might be a first place where planners identify opportunities to address mental health. Since these elements are typically focused on providing large, formal spaces for organized activities, however, there may be other venues for planners to consider that more effectively address some of the built-environment and green-space issues identified in the mental-health research. Batavia, Illinois, a small western suburb of Chicago with a population of 26,000 people, for example, has an urban-design element within its comprehensive plan that looks at landscaping, design review, downtown character, and community spaces. One goal is to "use landscaping to soften new development, screen unattractive elements, minimize heat gain, and to provide relief from urbanization" (City of Batavia 2006, 3).

Policies include planting large trees to buffer parking lots and unattractive uses, and requiring developers to focus on vegetation and shade when designing outdoor spaces. Policies also look at how buildings are viewed from all sides instead of just the front entrance. While this element does not explicitly link mental health to its policies and objectives, it provides indirect connections by prioritizing the visual experience of its residents and visitors who briefly see small bits of green from the streets, windows and other parts of the public and private realms.

The absence of green is particularly heightened in areas that have large expanses of concrete and asphalt, including parking lots, structured parking and on street parking. Reducing these areas can provide a great opportunity to link health and planning. To combat this problem, planners can turn to landscape-design standards or specific zoning codes to help lessen the "concrete jungle." The State of Maryland, for example, provides a series of best practices for parking facilities (State of Maryland (undated), 19):

- For facilities placed to the front or side of buildings, there are various ways to screen parked cars from street-level activity, providing the necessary parking without overly compromising urban design.
- When a parking lot abuts a public street, the parked cars should be screened from public-street frontage to obscure a majority of the parked cars.
- Landscaping on the periphery of a parking facility and within parking areas can be used to soften the appearance of a parking facility from the street. Expanses of parking should be broken up with landscaped islands and planted strips, which include shade trees and shrubs

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Street trees,planters and other landscaping can provide "nature" in an urban setting

Landscaping can provide shade and green views, and help create a diverse and enjoyable urban environment by breaking up the monotony of parking areas. These recommendations illustrate how using green as a buffer and improving the sightlines for different groups of users near parking infrastructure and facilities can be used o link design with mental health.

The State of Colorado (2002) created a series of model local ordinances to link the efficient use of water with protecting the community's environmental, economic, recreational, and aesthetic resources. One of the model ordinances recommends providing tree-lined streets in urban areas; anchoring new buildings in the landscape; and providing tree canopies within paved areas, maximizing their interconnectivity within the site to natural and landscaped areas in adjacent developments; enhancing functional open space

through the creation of outdoor rooms within the development; and preserving and framing views both into and out of the neighborhood. While the focus of this ordinance is water efficiency, there are elements within it that can be used to draw out the links to mental health, because of the emphasis on trees and views within the public realm.

Sydney, Australia, has a tree master plan that is another example of a policy tool that can be used to make this connection. Some of the objectives for street planting underscore a restorative connection (City of Sydney 2004, A-2) include:

- improve environmental comfort as street-tree canopies diminish traffic noise;
- screen unwanted views and reduce glare;
- provide a human scale that contrasts with the towers that dominate some city streets; and
- provide a link to nature and a source of delight.

This master plan, while focusing specifically on trees, is comprehensive in its approach and in looking not only at the parks and open-space aspects of natural environments, but also the varying ways to introduce nature into urban environments.

Maintaining Natural Spaces

In addition to focusing on making sure that green views exist for a wide variety of users, planners also need to focus on how to maintain these spaces while also balancing the ecological and human demands. Trees are preferred natural elements in urban landscapes, but they require a significant amount of maintenance. There are a variety of tools that planners use, such as tree-related zoning ordinances and master tree plans, to plan, protect, locate, maintain, and remove trees.

To inform the development of effective plans and policies for maintaining trees and green spaces, communities may need to conduct an analysis of their green infrastructure. The City of Vancouver, Washington, for example, conducted a Regional Ecosystem Analysis of the Willamette/Lower Columbia Region to determine how the tree canopy has changed over time. They found that the average tree cover in urban areas declined by 9 percent, from 21 percent to 12 percent since 1972 (City of Vancouver 2006a). Communities might also conduct such an analysis as part of an inventory and analysis for comprehensive planning.

As an alternative to zoning, some communities may establish policy documents related to the maintenance of natural areas. Arlington County, Virginia, for example, developed Standards for Planting and Preservation of Trees on Site Plan Projects. The site-plan requirements are intended to facilitate the consideration of trees and tree protection early in the site-planning process (County of Arlington 2002). The standards document specifies a number of best practices for tree preservation, size of tree planting areas, tree size and spacing, ground cover, impacts of underground utilities and sidewalks, tree planting, and tree maintenance.

Arlington County's standards are particularly tailored to trees in urban areas, including street trees. The document includes section drawings to illustrate the location of trees in the right-of-way, specifying the amount of space that is required for healthy tree growth between the curb and adjacent structures or paved areas (County of Arlington 2002). Specifications also are provided for planting requirements including soils, staking, use of mulch and ground cover, subsurface drainage, and the installation of decorative tree grates (County of Arlington 2002).

As mentioned earlier, there is a tension between wanting to create a natural space and a space that people will use. In Colorado, the State's water-efficient model ordinances for landscape standards state that, "All landscape improvements shall be designed for mature landscapes and shall provide appropriate visibility for cars and pedestrians." The City of Madison, Wisconsin, (1989) similarly states that, "Trees, plants, shrubs or vegetation which are on either public or private property and situated so that they interfere with the free and safe use of any street or sidewalk are public nuisances. Any vegetation which interferes with vision at

any intersection so as to violate Section 20.93.240 of this code also is a public nuisance." Here, the ecological concerns are subjugated, while the priority is on the human experience.

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Open space can provide a restorative experience, reducing stress. This park is in Booneville, Missouri.

Integrating Nature into Communities

Many of the policies and implementation techniques listed above also speak to different ways that nature can be integrated into the communities at a variety of different scales. This section provides examples for localities to consider as they look for ways to integrate nature across the community. Here, we focus on parks and open-space plans, street-tree master plans, parking and landscape buffering, and urban forestry plans, as a way to illustrate approaches to balancing nature and development in urban communities. While the examples discussed here do not make a formal link between mental health and nature, they are effective in providing both small and large areas of green space, which responds to the needs and interests of a diverse set of users and provides both active and passive spaces across entire communities.

The Parks and Recreation Department for Vancouver, for example, is in the process of developing its first urban-forestry management plan. The urban forest is identified as the combination of trees, shrubs and other types of vegetation in parks, along streets, in yards, on empty lots, and in urban natural areas. The plan is extensive in its preparation and development strategies, because it combines current research, the City's existing tree-related policies, nationally-recognized best-management practices, and a public participation element (City of Vancouver 2006b). While the plan is not complete, there is additional language on the City of Vancouver's Urban Forestry Web site that discusses some of the benefits of trees, including that trees:

- can reduce ambient noise levels by about half ;
- are beautiful. They soften the hard edges of buildings and streets, making the city a more pleasant place to be for residents and tourists alike;
- can screen unwanted views, create privacy and give a space a sense of place; and
- are also good for people's psyches. Hospital patients recover faster when they have a view of trees. Big, strong, old trees have a reassuring sense of endurance. Studies have shown that brief encounters with nature can improve people's capacity to concentrate. Another study found that people who saw nature regularly during their workday reported higher job and life satisfaction and less illness (2006c).

Other noted benefits relate to economic development, environmental health and safety (City of Vancouver 2006c). The clear connection that this language makes to mental health, noting that trees are "good for people's psyches," is notable and not seen among other examples described in this information sheet.

The City of Sydney, Australia, uses a Street-tree Master Plan to focus on the integration of nature into the urban environment. Sydney has a particular focus on streetscapes, and it is part of the overall environmental initiative plan to develop "environmental outcome-based objectives and key performance indicators;" it states (City of Sydney 2006, 1): "The City of Sydney's street trees are one of our most important assets. These trees are crucial to maintaining the high quality of our public realm and provide numerous environmental, social, health and financial benefits to the City

and community." The master plan includes: benefits of street trees, key objectives, policy recommendations, tree species selection, street-tree plans for each precinct, and technical guidelines" (City of Sydney 2004). Furthermore, the plan has tree guidelines for three areas of concern: their dense central business district with high-rise buildings, their suburban communities (inner-city residential areas) with narrow sidewalks, and their industrial area that is comprised of large industrial blocks with a "coarse grain network" (City of Sydney 2004). The plan includes provisions intended to reinforce and enhance the special characteristics of the three primary areas, using distinct street-tree planting and to establish green-city corridors by providing high-quality street trees (City of Sydney 2004, 1.3).

Greenways, linear corridors of natural land used for a variety of reasons, are also another way to integrate nature within an urban environment. The City of Asheville, North Carolina, has a Greenway Master Plan that addresses the benefits of greenway, provides an inventory of existing conditions, specifies visions/goals/objectives, system recommendations and design guidelines, as well as details on the cost, funding sources and maintenance issues. It is a three-phrase plan from 1998 to 2008 that is broken down into land protection, corridor master planning, design development, and construction and development in order to combat growth that harmed opportunities for non-motorized travel. The plan targets 14 corridors for the primary greenway system that are located along natural and manmade linear corridors, which generally follow roadways, ridgetops and waterways. While the formal discussion in the plan is primarily focused on non-motorized transportation, social capital and environmental concerns, the plan does include a broader goal to "encourage a cleaner, greener, safer, and healthier community" (City of Ashville 1998, 3).

Final Thoughts

The examples provided above are helpful as communities begin to think about how to improve mental health, a key aspect of health that can be influenced by the built environment. This information sheet highlights a number of opportunities for communities to promote mental health through planning efforts and plan implementation. It is important to recognize that local conditions should be considered in determining plan content and identifying regulatory tools. Each of the examples summarized here can be modified and tailored to the local development pattern, natural environment, climate, community preferences, market, political environment, and other community characteristics.

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