



# **A Policy Review of the Integration of Sustainable Design and Affordable Housing**

Developed with Support from the Center for Urban and Regional Affairs

*“What’s the use of a house if we don’t have a decent planet to put it on?”  
- Henry David Thoreau*

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## Executive Summary

This report discusses the integration of sustainable building design and affordable housing development in terms of national, state, and local public policy. The study included an analysis of twelve policies that affect either sustainable design, affordable housing, or both. The policies are grouped according to their degree of authority and the scope of their intent. Each policy is discussed individually in terms of its opportunities to further the integration of the sustainability and affordable housing. In addition, policies were compared and contrasted to identify larger patterns and considerations. The following general findings and recommendations resulted from the study. (For detailed information on individual policies and the cross-comparison please see the following report, for a broader discussion of policy recommendations see Section 6.0 Recommendations on page 52.)

### General Findings

- ***Few housing policies address sustainability and few sustainability guides address affordable housing.***  
A comparison of policies reveals little or no integration between the concepts of sustainability and affordability in housing.
- ***Few policies offer strong accountability or enforcement methods.***  
Even the regulatory policies examined (as opposed to guidelines or findings) do not provide strong requirements and/or enforcement when building sustainable or affordable housing.
- ***Most housing policies only address individual or isolated aspects of sustainability.***  
Sustainability topics tend to be focused upon as isolated issues or topics (e.g. energy efficiency), rather than as a comprehensive and integrated approach to design that encompasses various issues and scales (e.g. water, energy, waste, materials, systems, etc.).

### General Recommendations

After the analysis of and comparison between existing important policies, recommendations were made that encompass the broader patterns discovered when asking the question: “What policies help and what policies hinder the integration of sustainable building and affordable housing?” Recommendations include the following:

- ***Affordable housing advocates and sustainable development advocates would gain insight and power if they worked together.***  
It is clear after analyzing affordable housing policies, general planning policies, and sustainable design guidelines, that the two goals of providing both affordable and sustainable housing are segregated concepts. Whether the policies reflect the divide in the advocacy world or vice versa, it is important that stakeholders in both areas realize the impact each concept has on the other. Information sharing, consensus building, and financial incentives are strategies for accomplishing this goal.

- ***While State and regional government should provide the guidelines, requirements, and legislation for eco-affordable development practices, local government should incorporate such principles into its development approval process.***

It is important to understand which levels of government would be most effective in which strategies to link sustainable and affordable housing. For the sake of consistency, expertise, and streamlining, it is most appropriate for state and regional governments to regulate sustainability and affordability guidelines, requirements, and legislation. This relieves the burden on individual cities to fund and provide the research needed to establish such policies. However, it is equally important that local governments carry out such policies, and support them on the appropriate level. For example, zoning regulations, comprehensive plans, and other development guidelines should respond to regional policies in a way that maximizes their affect.

- ***Policies and guidelines that address affordability or sustainability should do so at the site and building scale when possible and appropriate.***

The site and building scales were often ignored in the policies. Emphasis was placed on regional planning and development. While regulations or guidelines addressed broader ecological issues, such as water management, preservation of open space, or decreased traffic congestion, decisions that affect sustainability on a smaller scale are often left to the builder, designer, or owner. There is a great opportunity to affect the sustainability and affordability of housing if policies link the two issues on a building and site scale. In contrast, sustainable guidelines rarely addressed larger issues of planning and development. In this case, greater attention to this larger macro-scale would benefit both affordable housing and development in general.

- ***Local land development policies, such as the comprehensive plan and/or zoning code should streamline development practices that integrate affordable housing with sustainable design.***

So many of the policies analyzed in this report comment on the complexity and irregularity of development practices and regulations. Often times this complexity is accompanied by cost increases, whether at the permit, impact fee, or building cost scale. Local governments should do all they can to streamline such development processes, and going further, could provide incentives for eco-affordable development by waiving fees and simplifying requirements for such developments.

- ***Policies and guidelines that address sustainability should also convey the relationship it has with affordability.***

Too many of the policies examined offered little or no connection to the impact sustainability has on affordability. Neither previous nor existing sustainability guidelines offer helpful information on the cost impact of their recommendations, an omission that greatly reduces the impact they might have on affordability.

Furthermore, reflecting the impact of sustainable design techniques on the economics of development would allow stakeholders to organize such techniques so that those that promote affordability could be more widely dispersed, and those that added cost to housing could be examined for less expensive alternatives.

- ***Sustainability guidelines are complex and often cumbersome, which can discourage their use.***

Given the complexity of the topic, sustainable design guidelines are often difficult to use and understand for housing agencies, policy makers, and people who are not designers. As sustainability guidelines increase in use, it is vital that they can be easily navigated and implemented for a broad audience of users. While the techniques and recommendations offered in sustainable design guidelines may be valuable, they are rarely applied to design if they are difficult to navigate, require extensive time or resources, and are too complex. In addition, past and present sustainability guidelines do not offer enough detail about their affect on project budgets and affordability. Decision-making tools and cost comparison tools are badly needed to integrate sustainable design and affordable housing.

### **Concluding Thoughts**

While significant attention has been given to larger sustainability issues for regional and urban planning (evidenced in the policies for Smart Growth, Comprehensive Plans, Mayors' Task Force, etc.), little if any regional attention has been given to the impact of sustainable design at the scale of affordable housing. Energy efficiency is perhaps the only sustainability issue that is commonly considered in affordable housing. Yet, sustainable design goes far beyond energy efficiency to also consider issues of health and well being, daylighting, passive solar strategies and natural ventilation, water conservation, nontoxic and renewable materials and natural resources, site and landscape design, and waste (among other considerations). These sustainability issues impact affordable housing design from the scales of building components to the design of the room, house, site, neighborhood, and city. In addition, sustainable design concerns how we live in community. It concerns how will we care for ourselves and the world in which we live. Public policy in Minnesota can and should positively inform and support the development of a more sustainable future through policies that leverage and support sustainability at all scales of design.

## **1.0 Introduction**

Sustainable design principles have been gaining importance and popularity since the environmental movement of the 1970s. However, as of yet, they remain the exception in building construction, rather than the rule. In the housing market, it requires a motivated owner to seek out designers and contractors that employ sustainable techniques, and there is a strong perception that doing so greatly increases the cost of building or rehabilitating housing. Such a perception often makes sustainability fall to the wayside in affordable housing.

This study considers the public policy implications of integrating sustainable design with affordable housing. The types, scales, and content of existing policies can greatly inhibit or promote the use of sustainable design techniques in building affordable housing, and the importance of doing so has never been greater. Not only are the Twin Cities amidst an affordable housing crisis, but also the world faces impending ecological crises at a scale never before imagined. It is perhaps more important than ever to bring sustainability to affordable design and development.

This study considers how local, state, and national policies help or hinder the integration of sustainable building and affordable housing. To address this issue, local, regional, and state policies were evaluated and compared in terms of their current or potential integration of sustainable design.

### **1.1 Definitions**

Listed below are definitions of relevant terms used in the study:

**Policy:** A policy can be any law, regulation, code, recommendation, or guideline produced with the intent of regulating or changing the course of public action.

**Sustainable Design:** Refers to design and development strategies that support, and even enhance, the environment and ecosystems for users today and into the future.

**Affordable:** This term applies to housing that costs 30% or less of a family's income when that family is below the median household income of the Twin Cities area.

**Eco-affordable:** Design and development strategies that are both sustainable and affordable.

### **1.2 Methodology**

The research included a literature review of reports, principles, and initiatives that addressed sustainable design, affordable housing, or both. Through this literature review a list of policies, were gathered and selected for analysis that either included, or had the potential to include, an impact on sustainable or affordable housing. These policies came from all levels of government, including the federal to the local levels.

The criteria for determining a policy's impact included the author, the distribution, the demonstrated impact (for those that were created before the year 2000), date of development, and the legal implications of the document (e.g. mandatory or voluntary). The author of the document was important because it expressed the level of authority for the policy. A state statute, for example, has more authority than local incentive program, because it is a law rather than an option. This is only one way of measuring a policy's impact, however. The distribution of the document is relevant because the number of organizations it reaches can affect the amount of change a policy sparks. If a policy was created some time ago, it can be determined significant because of a demonstrated impact that has occurred. Finally, the legal implications of the document, including the strength of its compliance language and the enforcement of its requirements, can determine the degree and reach of the policy's impact.

After the list of policies was narrowed down based on its impact, each was examined with respect to how it addressed both affordability and sustainability in housing construction. Some of the findings reveal indirect references, while others are more direct. For example, calling for higher housing densities is not necessarily only a sustainable goal, but it can play a part in more sustainable developments by reducing the amount of disturbed land and encouraging alternate and more environmentally friendly modes of transportation.

After each policy was analyzed with respect to affordability and sustainability, the opportunities to change or improve the policy in a manner that would integrate the concepts more specifically, economically, and realistically. Some of these opportunities would be appropriate in future revisions of the document in question, while others would be more appropriate as amendments to existing policy.

After a comprehensive policy review was complete, it was important to compare the policies with respect to each other to discover the patterns of sustainable and affordable integration. Matrices were created that compare each of the planning policies that address affordability, as well as each of the sustainability guidelines that address sustainable building techniques. The findings of the matrices are then discussed in detail.

Finally, the report attempts to address the problem statement for the study: How can local, state, and national policies help or hinder the integration of sustainable building and affordable housing? This question fueled the recommendations of the report, which look at broader methods and approaches that exist or can be developed to create eco-affordable housing policies.

### **1.3 Policies**

The policies selected for analysis include across section of local, regional, and national policies. Building codes were not considered in this policy review. Although it would be useful to include the building codes, the Minnesota State building codes were in transition during this study. As of January 2003, state codes were switching from the

International Building Code (IBC) to the Uniform Building Code (UBC). This transition made it difficult to evaluate the impact of existing versus new codes. In addition, code officials are still in the process of understanding of the implications of the IBC and its impact on cost and sustainability. A future study of the new state building codes would be useful in terms of sustainable design and affordable housing.

The policies that have been selected for this study are discussed at length in the following sections. They have been grouped in to categories based on their nature and their authority: 1) the Planning Policy section refers to laws or regulations; 2) the Regional Planning Guideline sections refers to local documents that were created to influence or change planning practices as they pertain to affordability or sustainability; and 3) the Sustainable Development Guidelines reflect the region's approach to sustainable design at the building and site scales.

### ***Planning Policies***

Planning policies originate from various levels of government. First, one of the most influential national policies regarding environmental protection, NEPA, is address by the Department of Housing and Urban Development. This shapes the environmental regulations with respect to all public housing, a major source of affordable housing stock. Second, the Land Use Planning Act and the Livable Communities Act are reviewed. Both are state laws that have shaped development in ways that are relevant to this study. On the local level, two St. Paul policies are examined, both of which greatly influence development: The St. Paul Comprehensive Plan and the St. Paul Zoning Code.

### ***Regional Planning Guidelines***

Regional planning guidelines are relevant, although less accountable, policies that attempt to guide development in the region. The Mayors' Task Force on Housing has created two reports in the last two years addressing important concept of affordable housing, especially from the viewpoint of local government. Smart Growth Twin Cities is an initiative for development that attempts to deter urban sprawl, and is endorsed by the Metropolitan Council. The Met Council is directly responsible for Blueprint 2030, which is a regional growth plan for the area, and addresses both environmental and affordable housing themes. Finally, the Housing 5000 plan is a directive from St. Paul Mayor Randy Kelly that aims to create 5000 new units of housing under his administration.

### ***Sustainable Development Guidelines***

Finally, this report examines sustainable development guidelines at the state and local level. The Building Benchmarks and Beyond (B3) Guide (also known as the Minnesota Sustainable Building Guidelines – MSBG) and its predecessor, the Minnesota Sustainable Design Guide are evaluated in terms of their effectiveness, appropriateness, and impact on affordability. Although both guidelines were developed for commercial and institutional buildings, they have aspects that are relevant to housing. The St. Paul Sustainable Decision Guide is a document that addresses environmentally conscious building in all city-owned properties. These three guidelines are available resources for sustainable building that vary in scope, structure, and impact. These, in addition to the previous policies mentioned, are more specifically reviewed in the following sections.

## 2.0 Planning Policies

While all of the policies within this section can be broadly termed “planning policies, they were selected because they also have specific links to affordable housing. The level of government from which they originate varies, but each has some impact on local affordable housing development, as well as a degree of pertinence to sustainable design and construction. Because of their level of accountability, degree of impact, or influential nature they are discussed below in detail.

### 2.1 The Department of Housing and Urban Development and the National Environmental Policy Act

The Department of Housing and Urban Development (HUD) is the entity that oversees affordable housing on a national level. The National Environmental Policy Act (NEPA) is the most visible and comprehensive of federal environmental policies. HUD is obligated to incorporate NEPA into all of its development projects, which are often affordable by nature. Together, they create a national policy that is the most relevant integration of sustainability and affordability in housing.

NEPA mandates national policy, goals, and procedures regarding the protection, restoration, and enhancement of the nation’s environmental quality.<sup>1</sup> The regulations set forth by NEPA apply to all HUD policy actions. HUD’s involvement in affordable housing programs is the largest in the nation, and it oversees homeownership programs, tenant-based rental assistance, and property-based rental assistance. Therefore, all of HUD’s housing policies and programs must satisfy the requirements of NEPA, to the extent that it applies. Title 24 of the Code of Federal Regulations outlines the ways in which NEPA must be addressed through various HUD activities.

The major guidelines of NEPA require Environmental Assessments (EAs) and if necessary, Environmental Impact Statements (EISs) to development projects that have the potential to harm the environment. These environmental reviews are then used to modify, accept, or reject a project proposal. With respect to HUD, these reviews are to be done for any residential development project that falls within certain guidelines.

Title 24, Section 50.3 lists the environmental policies of HUD. These policies include reference to the integration of natural and social sciences and the environmental design arts in making decisions, as well as recommendations for beginning the environmental review process as early on in the project as possible. These policies ensure that HUD’s response to NEPA will address sustainability concerns on the site scale in all of its affordable housing development projects.

#### ***How does HUD’s obligation to NEPA address sustainability?***

In response to NEPA, HUD uses several methods to assess the environmental conditions of a proposed housing project site. HUD will not approve a project until the property is

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<sup>1</sup> Code of Federal Regulations, Title 24, Section 50.1.

free of hazardous materials, contaminations, toxic materials, or radioactive substances.<sup>2</sup> Furthermore, the proximity of the property in question to any locations that may harbor such hazards shall also be reviewed as a part of an EA or an EIS. The policy also requires the use of current techniques and qualified professionals for environmental investigations to meet compliance with NEPA's guidelines.

In Section 50.19 of Title 24, categorical exclusions that are not subject to NEPA's EA and EIS requirements are listed. Such exclusions are defined as activities that do not alter physical conditions sufficiently to require environmental review. Three listed exclusions include: 1) the purchase of insurance, 2) tenant-based rental assistance, and 3) activities to assist homeownership.

There are other types of projects that are excluded from NEPA's requirements. The removal of materials to improve accessibility, the rehabilitation of residential structures that do not increase in unit density by more than 20%, and projects that do not change from residential to non-residential or vice versa. This section of Title 24 does, however, state that projects with the potential to significantly impact the environment due to extraordinary circumstances do require an EA.

***How does HUD's obligation to NEPA address affordability?***

The effect of NEPA on affordable housing is relevant in that it is carried out through HUD, which as a department of the United States provides assistance to local governments that provide affordable housing. Therefore, an environmental review of a HUD project is directly related to all of HUD's affordable housing projects that require an EA. Of course, the affect an EA or an EIS has on a project's affordability is difficult to measure. As an example, HUD's policy states that no project will be approved unless it is free of hazardous materials, contaminations, toxic materials, or radioactive substances; processes that can be costly.

This part of HUD's policy with respect to NEPA is important, as it shows the need for brownfield and pollution clean up before any HUD or HUD-financed projects can be developed. NEPA requires similar processes to be undertaken for private development, which can significantly increase the cost of a land and reduce the desire for a developer of affordable housing to build on sites that require environmental clean-up. While the environmental benefits of HUD policies are significant, the affordability of sites can be reduced. Without financial support and incentives, the cost for brownfield and site reclamation can make development unfeasible. This can result in unused, underutilized, or reduced access to urban sites.

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<sup>2</sup> Code of Federal Regulations, Title 24, Section 50.3.

### *What are the opportunities?*

#### Revisiting exceptions for environmental review would strengthen HUD's response to NEPA.

As mentioned earlier, Section 50.19 lists the project actions that do not require environmental review. Unfortunately, some of the listed actions have great ties to sustainability, and could be utilized to improve both ecologically responsible and affordable housing.

For example, the purchase of insurance is listed as an activity that does not require an environmental review. However, one reason for insurance is to finance unforeseen costs due to robbery, natural disasters, or accidents. The degree to which such problems can be prevented should affect insurance rates. If sustainable design practices were able to reduce the chances of structural damage, fire damage, or robbery, that should be reflected in an insurance rate. HUD has an opportunity to correlate the two.

Another exclusion from the environmental review process is tenant-based assistance, largely consisting of the Section 8 program. This means that HUD subsidizes the cost of rent for families living in privately owned housing units. However, HUD will not subsidize rent for units that have not been inspected and determined to be code compliant. Why should environmental consequences be excluded from the inspection process? While it is true that rejecting units because of a lack of sustainability would be detrimental to the program, landlords with ecologically friendly units might be rewarded with higher rents or other incentives, at no extra cost to the tenant.

Other activities to assist homeownership are excluded from the environmental review process. This includes closing cost and down payment assistance to homebuyers, interest buy-downs and other homeownership subsidies. Again, HUD has an opportunity here to reward purchasers (and thus, developers) who utilize sustainable design practices. Assistance such as these subsidies can be more affective than simply giving financial assistance, they can encourage lower long term energy costs, decreased maintenance, and higher durability and quality materials while also providing assistance to families purchasing "green" housing.

The other section of Title 24 that addresses exclusions from NEPA requirements is also missing some opportunities. For example, the removal of materials to promote accessibility does not require environmental review under NEPA. However, materials could be recycled or re-used to promote sustainability. Residential unit density changes of less than 20% and projects whose land use does not change are also exempt from NEPA requirements. It is unclear why the density of a project or the land use of a project reduces the need for environmental review. Even small rehabilitation projects have the potential to impact the environment, and land use changes can have significant environmental issues.

The extent of HUD’s environmental review process could include the sustainable design of all HUD housing units, in addition to HUD land. HUD could create or endorse sustainable design guidelines for all of its housing construction projects.

There is room in this policy to increase the level of environmental consideration for HUD and HUD-financed projects. Although NEPA is an important policy to ensure that a project site is not hazardous or that a project will not unnecessarily harm the environment, there is no legislation relating to the use of green practices when designing or rehabilitating a structure. A HUD policy, checklist, or at the least, references that addresses sustainable design concerns could significantly impact HUD housing.

## **2.2 Land Use Planning Act**

In 1976, Minnesota passed the Land Use Planning Act (LUPA), which was intended to address, among other things, issues of long-term planning within the Twin Cities Metropolitan Area. Prior to 1976, land use planning was not required of state municipalities, and metropolitan growth was occurring without comprehensive planning goals in place. Unguided growth threatened the quality of the regional area, and LUPA required cities to adopt a comprehensive plan that clearly stated the development goals of a community while addressing specific regional issues relating to growth.

LUPA is overseen and enforced by the Twin Cities’ regional government entity, the Metropolitan Council. Once a municipality adopts a comprehensive plan, it is reviewed and approved by the Metropolitan Council, provided that it accurately addresses the requirements set forth by LUPA. Not only is the approval of the Metropolitan Council needed for a city’s comprehensive plan to be adopted as law, but the Council’s input toward city-allocated federal development grants also encourages cities to draft plans that conform to regional needs.

Changes and additions were made to LUPA after it originally passed. Most recently, in 1996, municipalities were required to produce updated comprehensive plans by 1998, and update the plans every ten years.

### ***How does LUPA address affordability?***

One of the regional issues LUPA requires cities to address in their comprehensive plans is housing. Minnesota Statute 473.859, Subdivision 2 specifically requires cities to address “standards, plans and programs” with respect to the existing and projected housing needs of the region. As an example of a regional housing need, affordability is mentioned, and statute language mandates that cities provide opportunities for development of low- and moderate-income housing.

The act also requires that comprehensive plans address the need of a city to provide the region with its fair share of affordable housing. A significant portion of the act speaks directly to housing needs in the region and how comprehensive plans should address those needs, especially with respect to affordability. The Metropolitan Council, at the time of LUPA’s enactment, had developed formulas to define each regional community’s

fair share of affordable housing. Formulas were based upon projected job and household growth within a community as well as the amount of current affordable housing stock. The amount of affordable or subsidized housing allocated as a community's share was then addressed in that community's original comprehensive plan.<sup>3</sup> The Metropolitan Council was then required to review a municipality's comprehensive plan with such affordable housing goals in mind. The Council provided cities with guidelines on providing affordable housing through zoning and land-use provisions, and made suggestions to comprehensive plans that did not adequately provide for affordable development. The issue of affordable housing was a major component of the Land Use Planning Act, and was specifically required to be a part of any city's comprehensive plan.

Today, much of the Land Use Planning Act is no longer in effect, and a more recent piece of legislation, the Livable Communities Act, addresses regional communities' responsibilities with respect to affordable housing. However, a comprehensive plan is still required of regional municipalities, and the Metropolitan Council still reviews such plans to measure their consistency with the needs of the region. Furthermore, housing needs and affordability are still required elements of any comprehensive plan.

### ***How does LUPA address sustainability?***

There was no specific language in the 1976 Land Use Planning Act that required cities to address ecological issues in housing development. However, subsequent revisions to the act and other Minnesota Statutes relating to regional government and comprehensive planning do exist. Minnesota Statute 473.851 states that "the growth and patterns of urbanization within the area create the need for additional state, metropolitan and local public services and facilities and increase the danger of air and water pollution and water shortages, and that developments in one local governmental unit may affect the provision of regional capital improvements for sewers, transportation, airports, water supply, and regional recreation open space."<sup>4</sup> The statute goes on to say that in order to address the environmental impacts of community development on the region, comprehensive local plans must adhere to the planned development of the metropolitan area. Clearly the environmental impacts of development are to be addressed in comprehensive plans, although at the broader development level.

### ***What are the opportunities?***

#### **LUPA had the opportunity to strengthen the ties between sustainability and affordability in housing.**

The lack of affordable housing has been and continues to be a severe shortcoming of many major metropolitan areas, including the Twin Cities. The number of homeless is on the rise, and the median cost of a single family home is higher than ever.<sup>5</sup> With these

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<sup>3</sup> Chapple, Karen, Goetz, Edward, and Lukermann, Barbara, "Twenty-five Years of Planning for Low and Moderate Income Housing in the Twin Cities: The Legacy of the 1976 Land Use Planning Act," *CURA Reporter* 2002 (32) 3 p.1.

<sup>4</sup> Minnesota Statute 473.851, State of Minnesota.

<sup>5</sup> Star Tribune, "Median Price of \$190,000 Again Sets Record", ([http://nl12.newsbank.com/nl-search/we/Archives?p\\_action=list&p\\_topdoc=61&p\\_maxdocs=260](http://nl12.newsbank.com/nl-search/we/Archives?p_action=list&p_topdoc=61&p_maxdocs=260)), August 13, 2002.

considerations in mind, it is critical to underscore the significance and importance of sustainability in relation to affordable housing. Sustainability is not only as important to the quality of life and the growth of the Twin Cities as affordability, but the relationship between the two is direct and relevant. Sustainable design has broad design and development implications that can apply to topics such as water, energy, resources, materials, and waste as well as impact virtually any scale of design (from components to buildings, sites, neighborhoods, cities, and regions). Despite the relationship between sustainable design and affordable housing, LUPA and its subsequent statutes do not guide the Metropolitan Council to review comprehensive plans from an explicitly ecological perspective. The Metropolitan Council's land-use guidelines for communities include implicit ecological concerns such as size, density, and subsidies; however, they overlook the explicit role of sustainability in the development of comprehensive plans and subsequently affordable housing.

#### LUPA limitations and the Metropolitan Council.

While the potential for LUPA and the concept of the comprehensive plans were to help shape the development of metropolitan growth in thoughtful and responsible ways, the challenges were to develop and implement the plans. Many of the goals of LUPA were not met, nor enforced. For example, when the 1996 amendment to LUPA required cities to update their plans by 1998, few made that deadline. Despite the infraction, the Metropolitan Council had no means by which to penalize a community without a current comprehensive plan. Meanwhile, development and construction continued to occur without appropriate plans and guidelines.

Data concerning city accountability is necessary to enforce LUPA. The formula the Metropolitan Council used to allocate a community's fair share of affordable housing is no longer used, and the legislation created to address this issues, the Livable Communities Act, does not require municipalities to participate. While some housing data is still collected by the Council, environmental data is not currently used in the evaluation of a city's comprehensive plan and its response to regional needs.<sup>6</sup>

### **2.3 Livable Communities Act**

In 1995, the Metropolitan Livable Communities Act (LCA) was passed largely in response to the concentration of the region's affordable housing in the central cities and a few inner-ring suburbs. Not only was the legislation meant to increase the amount of affordable housing throughout the region, but it also aimed to encourage communities that traditionally did not provide affordable housing to build affordable units. The implementation of LCA is under the jurisdiction of the Metropolitan Council.

It is voluntary for metropolitan communities to participate in LCA, however, the Metropolitan Council gives priority to participating communities that apply for certain

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<sup>6</sup> Chapple, Karen, Goetz, Edward, and Lukermann, Barbara, "Twenty-five Years of Planning for Low and Moderate Income Housing in the Twin Cities: The Legacy of the 1976 Land Use Planning Act," *CURA Reporter* 2002 (32) 3 p. 2.

grants. If a community participates, they work with the Metropolitan Council to determine a target percentage of affordable housing to be created through the year 2010. Rather than assigning communities an absolute number of affordable units to create, they are given a percentage of which all new housing units should be affordable. The vast majority of Twin Cities' municipalities are currently participants in the LCA program.

### ***How does the Livable Communities Act address affordability?***

As a result of the Livable Communities Act, up to 55,000 affordable housing units may be built in the Twin Cities by 2010. This shows the direct influence that legislation can have on affordable housing in the Twin Cities. However, the 1999 report *Losing Ground: The Twin Cities Livable Communities Act and Affordable Housing* by Ed Goetz and Lori Murdock identify missed opportunities to create even more affordable units, especially in communities that have historically lagged behind in affordable housing production.<sup>7</sup>

The report argues that LCA's definition of affordability is too limited. LCA defines affordability as a unit that can be rented or purchased by a household with the metropolitan region's median income for a family of four without exceeding 30% of their income. Clearly, many families are below the region's median income, and are especially in need of affordable housing. Furthermore, only a portion of median-income households is actually a family of four. The LCA definition of affordability made it seem as though there was more affordable housing in the region than there actually was, which caused negotiated housing targets to be smaller. Another way the LCA might have increased its effectiveness is to base community benchmarks on need, rather than on a community's past performance in developing affordable housing. Benchmarks were created by the Metropolitan Council to provide a starting point from which negotiations for housing targets could be made. By basing benchmarks on past performance, the communities that had provided the least amount of affordable housing in the past were asked to provide the least amount of affordable housing in the future. Furthermore, most communities negotiated lower affordable housing production goals than their original benchmark. The goal of dispersing affordable units throughout the region was thus compromised. Finally, the report revealed that the relative amount of affordable housing in the region, compared to all housing in the region, would actually decrease under LCA. Because many communities negotiated percentages of affordable housing that were less than their previous percentages, the total percentage of affordable housing for the region would drop.

### ***How does the Livable Communities Act address sustainability?***

The Livable Communities Act does not address sustainability in any explicit way. There are no requirements to ensure a unit's long term affordability, nor is there language to address environmentally responsible methods of development, design, and construction. An indirect way that LCA addresses sustainability is that affordable housing tends to be

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<sup>7</sup> Goetz, Edward G., and Murdock, Lori. *Losing Ground: The Twin Cities Livable Communities Act and Affordable Housing*, 1999.

smaller and denser than market-rate housing, which can reduce environmental impacts on undeveloped and agricultural lands. One of the incentives to encourage communities to participate in LCA includes potential funding for brownfield clean up. However, cities with low-density development that are averse to building affordable housing are often less likely to have brownfield sites, as they are generally younger communities that have been developing after environmental legislation policies were passed. Many other ecological factors could be included in the LCA to promote sustainable development and housing.

### ***What are the opportunities?***

LCA could be amended to include sustainability guidelines to the affordable housing created by participating cities.

LCA has multiple opportunities, not only to more effectively create affordable housing throughout the region, but also to incorporate sustainability into its purpose. Many of the residents in communities that have the least percentage of affordable housing choose their suburban location because of the amount of undeveloped land. There is an opportunity to build upon preferences for open space by including ecological practices and increased density in the development of new housing.

LCA is not as strong as it could be.

As the primary piece of state legislation that directly addresses the construction of affordable housing in the Twin Cities, LCA could have stronger impacts on housing development and sustainable design. Not only should participation be mandatory, but communities not providing their fair share of affordable housing should be required to build a higher percentage of affordable units than historically affordable regions. Finally, more streamlined practices, such as inclusionary zoning, might simplify the process and reduce the workload of the Metropolitan Council, while meeting the goal of a larger, less concentrated affordable housing stock. The LCA should be updated to include baseline sustainable design requirements and guidelines for development and housing.

## **2.4 St. Paul Comprehensive Plan**

All Minnesota cities are required to create and update comprehensive plans to guide growth and provide a city vision. St. Paul's comprehensive plan has been analyzed to consider its potential impacts on affordable and sustainable housing.

The introduction of the St. Paul comprehensive plan is a wide-ranging vision of what the city would like to be. It addresses the desire of the city to have traditional neighborhoods, beautiful natural spaces, and a thriving downtown. St. Paul's comprehensive plan, currently updated for the year 1999, explicitly addresses housing and affordability. The environmental quality of the city is also a general concern.

### ***How does the St. Paul Comprehensive Plan address affordability?***

Affordability of housing is addressed in many ways throughout the St. Paul comprehensive plan. In General Policy 5, a section of the Land Use chapter of the plan, the concept of neighborhoods as urban villages is promoted. The urban village concept suggests that affordable housing should be dispersed evenly, rather than clustered in specific neighborhoods. It directly advocates the need for diverse housing costs within neighborhoods. General Policy 6, which is within the Housing chapter of the plan, states that existing housing stock should be preserved, indirectly supporting affordability by encouraging the utilization of existing housing as opposed to constructing new, and possibly more expensive, units. General Policy 7, also within the Housing chapter, supports market demand, defining townhouses and condominiums as affordable alternatives for young families unable to afford single-family homes. General Policies 5-7 indirectly support affordability. The final section of the Housing chapter of the plan, General Policy 8, highlights St. Paul's relatively large number of affordable housing units, and reiterates the need for preservation of existing housing stock. Specific housing policies of the plan also include new construction of affordable housing, pressuring the region to provide housing options in all Twin Cities' communities, increasing partnerships with non-profit, philanthropic, and governmental organizations to develop funding and programs for affordable housing, and linking social services with housing. These goals explicitly define ways and means to promote affordability within the city.

### ***How does the St. Paul Comprehensive Plan address sustainability?***

The environment is a key concern in St. Paul's comprehensive plan. However, specific policies with respect to sustainable development, design, and construction are lacking. Nevertheless, environmental cues can be taken that can lead to sustainability. For example, General Policy 3 from the Water Resources Policy requires strict stormwater management practices and the enforcement of erosion measures. Both of these requirements can relate to housing construction and development, although this correlation is not explicitly stated within the policy. While the relationship of St. Paul to the Mississippi River and the visual and environmental benefits of natural spaces are eagerly addressed throughout the plan, the level of environmental attention to building and design practices and the affordability of housing are not considered.

### ***What are the opportunities?***

The St. Paul Comprehensive Plan could include the integration of sustainable design and affordable housing as a clear and specific goal of the city.

There are many opportunities for St. Paul's comprehensive plan to create policies that address the intersection of affordable housing and sustainable design. While large-scale programs encourage environmentally responsible growth for the city, the discussion of environmentally responsible building practices within the plan could bring about significant change in the construction industry with a great benefit to the environment. The degree to which St. Paul's comprehensive plan guides the city development is difficult to measure, but the written policies allow the city to be accountable for growth and development choices. If language within the plan explicitly stated the priority of

ecologically responsible development, the impact on the construction, design, and development industries could be significant. The importance of sustainable building practices and their relationship to affordability should not be overlooked in municipal policies. If eco-affordable housing were addressed in St. Paul's comprehensive plan, and if that plan were strictly enforced and adhered to, great improvements could be made that would further support the intelligent, sustainable growth of housing in the city.

## **2.5 St. Paul Zoning Code**

The city of St. Paul, Minnesota, like most United States cities, has a detailed zoning code. While the comprehensive plan is a macro-scale document that states general goals of the city, the zoning code is a collection of specific rules and regulations that occur within various zoning districts as well as the city overall. Within the St. Paul legislative code of ordinances, the zoning code is contained between chapters 60 and 68. However, for the purposes of this study, only chapters and sections of the plan that relate to residential districts, either directly or indirectly, are evaluated. The St. Paul Zoning Code is under the jurisdiction of the city council of St. Paul. All legislation within the code has been approved by the city council and signed into law by the mayor. However, it is a zoning administrator, zoning appeals board and the St. Paul planning commission that oversees the implementation of the code.

The zoning administrator has the power to allow variances to zoning codes as well as certify a project as code compliant. During new construction, for example, various building permits and city licenses must be filed, and the zoning administrator oversees the elements of the project that relate to St. Paul's zoning code. Upon completion of construction, the zoning administrator may deem the project as code compliant. Landowners may also file for a zoning variance with the zoning appeals board. The board also serves as a court for landowners that wish to appeal a decision of the zoning administrator. Finally, the zoning appeals board serves as support for the planning commission, which exists to approve site plans, grant variances, and permit land uses that are contingent on predetermined factors and require approval. Usually, a landowner or developer approaches the St. Paul planning commission with plans for a project prior to construction, to ensure the compliance of a project. However, the planning commission may delegate any project review to the zoning administrator. The zoning administrator generally handles smaller projects, while large, high-impact developments are approved through the planning commission.<sup>8</sup>

### ***How do St. Paul's Zoning Codes address affordability?***

Unlike St. Paul's comprehensive plan, the zoning code does not directly address affordability. The benefits of this strategy include the use of creativity and flexibility in the zoning code when developing affordable properties. In theory, even large lot residential districts (R-LL) could be sites for affordable development, although minimum lot requirements and infrastructure costs would likely inhibit affordability. However,

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<sup>8</sup> Chapters 64.100 through 64.300 of the St. Paul Legislative Code.

there are also downfalls to ignoring affordability within the housing code. Despite strong language supporting affordability in St. Paul's comprehensive plan, there is little in the way of specific guidelines or mandates in the zoning code that require or encourage affordable development. In some Californian cities, for example, inclusionary zoning is a part of the legislative code. This means that most new development must include a certain percentage of affordable housing units.

Affordable housing is indirectly affected by elements of the St. Paul zoning code. Zoning district definitions and explanations, found in chapter 60, and setback requirements, found in chapter 61, both contain language that affects the affordability of housing.<sup>9</sup> Zoning district definitions and explanations are largely oriented around density requirements, which can profoundly affect affordability and sustainability. The least dense residential zoning district allowed in St. Paul is large lot residential, or R-LL. The intent of this district is to provide semi-rural, single-family-housing neighborhoods that use private wells and individual sewage treatment systems, and the minimum lot requirement for R-LL districts is 21,780 square feet. This is extremely low-density development for such a large and urban city, considering that the next lowest density district allowed has minimum lot size of only 9,100 square feet. The cost of land in the central city, in addition to the infrastructure costs related to individual sewage treatment systems is considerable, making R-LL zoned land nearly impossible for affordable development, as well as inconsistent with the goals of the city as stated in the comprehensive plan. Zoning districts R-1 through R-4 are also single-family-housing districts, although at much higher densities than R-LL. Furthermore, they assume water and sewer availability through existing infrastructure, reducing the cost of development. However, the permitted and conditional uses of all of the single-family-home districts have their own impact on affordability.

There are three major uses permitted, or conditionally permitted, in R-LL and R1-R4 that have an impact on affordability. First, home occupations are considered a permitted use within these districts. However, there are multiple restrictions, mainly geared at ensuring the residential character of the home and minimal impact on neighbors. Due to these restrictions, group day care is not permitted in these residential districts, and this home occupation is often the most feasible way to increase the affordability of home ownership, since it requires little equipment and low start-up capital.

While three or more unit buildings are not permitted in R-LL or R-1 through R-4, two-unit dwellings are considered a special condition use. However, there are considerable restrictions. Any two-dwelling unit must be side-by-side. Top and bottom level duplexes are not allowed, which increases the square footage area of a two-dwelling unit. This also increases the minimum lot size and decreases density. Furthermore, a two-dwelling unit must be at least 80 feet wide along the façade. With the addition of side setback requirements, duplexes require wide plots of land, which increase the cost of this housing type. Finally, not allowing top and bottom units also prevents the alteration of some two-

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<sup>9</sup> Chapters 62 and 63 are general in nature and while they were evaluated, they do not affect affordability in any reasonably obvious manner. Chapters 65-68, conversely, are quite specific to their relative issues, and do not address affordability.

story existing large homes into two-family units, which is another way to lower costs for both homeowners and renters.

A final conditional use permitted in single-family-home districts is the use of carriage homes (or accessory units). A carriage home is a secondary dwelling unit on the same site as the primary home, and is often built above a detached garage in older homes. Allowing homeowners to rent out carriage homes as apartments not only adds income to the homeowner, but also provides an inexpensive housing option. Despite the dual benefit, carriage houses are only permitted if they already exist, and were previously used as domestic employee spaces. Two-thirds of all neighbors within 100 feet of the property must approve the use of the carriage house, and off-street parking must be provided. Unfortunately, these restrictions greatly reduce the amount of existing carriage houses that can be used as housing alternatives, and new housing of this type is prohibited. (Recent revisions to zoning codes in Minneapolis now permit accessory units in some areas of the city.)

St. Paul's zoning code also indirectly affects affordability within its multi-family dwelling unit residential zoning districts (RT-1). RT-1 denotes two-family dwelling units, although the conditional uses permitted for R-1 through R-4 districts are allowed on RT-1 land, as well. The intent of the RT-1 district is written in the code as a transition between residential and non-residential land uses, the conversion of older, larger housing into duplexes, and a general zoning code for areas where higher density is appropriate.

The permitted uses of RT-1 are the same as R-1 through R-4, although duplexes face fewer restrictions and group day care is allowed. This increases the potential of development in RT-1 districts to be affordable. RM-1 and RM-2 both increase the potential for affordability within a project through higher density zoning, and the intent of the districts reflects this. RM-1 allow low-rise, low-density apartments to be used as a buffer between "less restrictive" and "more restrictive" districts. Finally, RM-1 is used to maintain the character of a single-family-housing district while permitting attached one-family dwellings. RM-2 is designated for more extensive areas of apartments, and makes reference to the use of transit and "related" facilities in such areas. This can improve affordability, as the availability of mass transit is often crucial to low-income families.

Chapter 61 of the zoning code deals with setbacks and special districts that apply to all residential districts. Many setback guidelines are given, and a number of these have the potential to affect affordability. For example, front setbacks are to be the average of the existing property setbacks existing on that block. There are minimum setbacks that must be met, but otherwise this formula is used. The setbacks of adjacent properties influence the setbacks of new construction. This can impact density and affordability. Large front setbacks can reduce the availability of land usable for other residential requirements, such as off-street parking, accessory units, and in higher-density districts, restrict the number of units that can be built on a plot of land.

Another section of chapter 61 restricts the number of rooms allowed in townhouse districts (RT-1 and RT-2). In limiting the number of rooms, the number of units possible

is also restricted, and lower density developments tend to be more expensive than higher density buildings. Minimum lot sizes have a similar impact, making certain densities unattainable on smaller plots of land (even if they are within a multi-family unit district). Finally, the minimum width of any residential building is 22 feet. In many cases, smaller lots and narrow houses are not allowed without zoning variances.

Zoning codes are necessary and relevant for the intelligent development of any city. Moreover, there are very thoughtful and important reasons why many of the ordinance discussed above have been made into law. However, from a strictly affordable standpoint, many aspects of the code inhibit or limit strategies to lower the cost of new housing. The cost of land is a primary factor in housing and subsequently increased density is a primary strategy to maintain affordability and promote sustainability.

### ***How do St. Paul Zoning Codes address sustainability?***

Within the chapters of the zoning code already mentioned, direct and indirect references to ecologically responsible housing are made. Furthermore, language in chapter 64 concerning variances also relates to sustainability. While the zoning code does not explicitly address sustainability (it relies on federal and local environmental laws), there are still aspects of St. Paul's code that do or can encourage development that respects the environment.

Surprisingly, the zoning district R-LL is the least encouraging of affordable use, yet it is the district that most explicitly addresses the environment. R-LL, or large lot residential, is partially listed with the intent of protecting and enhancing forests, wildlife habitats, topography, and reducing erosion and excessive stormwater runoff. These issues are not addressed by the code in any of the other more dense residential districts. Dense developments do not and should not exclude the inclusion and protection of forests and wildlife habitats and the reduction of erosion and stormwater runoff.

With respect to general setback guidelines, there is a direct relationship between the slope of the lot and the minimum lot size required for development. This is important because erosion and stormwater runoff potential increases as slopes increase. Increasing the lot size can reduce the amount of impervious surface within an area that can potentially impact stormwater, however, other sustainable design strategies can be used on small lots to eliminate erosion and control runoff.

Finally, chapter 64 contains language guiding the allowance of zoning variances. Variances that would reduce an adequate amount of light and air to adjacent properties are not permitted, although adequate is not defined within the ordinance. This chapter also states that the lack of direct sunlight for a solar energy system is considered to inhibit the reasonable use of the land. Variances are also required for smaller lots and house designs that do not meet the minimum setbacks and required widths. Increased density is an important strategy for promoting affordability and sustainable land use.

### *What are the opportunities?*

#### Zoning that inhibits eco-affordable housing should be revised.

There is no better place to enforce eco-affordable housing goals than the city's zoning code. Direct requirements such as inclusionary zoning or requirements and incentives to build "green" would be valuable additions to the current code. Some changes to the existing code might also benefit the prospect of eco-affordable development. For example, minimum setbacks, lot sizes, and building widths might all be reconsidered to allow more design flexibility and smaller, more efficient dwelling units. Language regarding the permitted use of social services throughout all neighborhoods, and at higher densities, might also be addressed. Zoning should be reconsidered that restrict affordable strategies such as rental units (garden apartments), promotion of multi-family units (duplexes and townhouses), and carriage houses (accessory units).

#### Mixed density neighborhoods, rather than density districts, would encourage the integration of low-, moderate-, and high-income housing.

The ability to vary the housing densities within a neighborhood is another strategy to improve the amount of affordable housing stock while optimizing sustainable land use. Higher densities within some low-density neighborhoods would free land for open space or ecological stormwater treatment and drainage. Furthermore, mixed housing density can reduce the secularization of neighborhoods into "rich" areas or "poor" areas, instead creating unity and common interests between families that previously might not have interacted.

#### The zoning code could require empirical proof of a property value decline.

A variance guideline found in Chapter 64 states that a "variance will not unreasonably diminish established property values within the surrounding area."<sup>10</sup> This is an understandable restriction to awarding a variance, but it is important that the possible diminishment of property values is more than just a perception. Also, there is no language that restricts zoning variances that might unreasonable raise the established property values within the surrounding area. Increasing property values can be a positive sign of growth, but they can also render a previously affordable neighborhood into a community of high rents and high home prices.

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<sup>10</sup> Chapter 64, Section 203, Letter b, #4.

### **3.0 Regional Planning Guidelines**

While regional planning guidelines certainly impact local development, they differ from planning policies in that they are not regulatory in nature. Many regional planning guidelines rely on incentives or recommendations to have an impact on local development, including issues of eco-affordable housing. The following regional planning guidelines are some of the most recent, influential, and significant guidelines available in the region.

#### **3.1 Mayors' Task Force on Housing**

In an attempt to address a lack of affordable housing, the Metropolitan Council created in 2000 a task force of mayors from and around the Twin Cities. Specifically, the task force was asked to examine the availability of the region's affordable housing. In November of 2000, the task force published its first report, [Affordable Housing for the Region: Strategies for Building Strong Communities](#).

A new Mayors' Task Force was created in 2002, this time to focus on ways to increase the availability of affordable housing. In October 2002 the group published its second report, [Affordable Housing: Making it a Reality](#). Since the 2002 task force was comprised of different mayors, even different cities in some cases, the findings and goals of the first report were analyzed and integrated into the second report. In both reports, the task force states goals and plans of action that various players in the affordable housing issue should work toward. Both reports include recommendations to government entities on the local, state, and national level. Most directly, however, the findings of each report are used by the Metropolitan Council to develop legislation and shape its own policies and programs.

#### **Report #1: Affordable Housing for the Region: Strategies for Building Strong Communities**

##### *How does the first Mayor's Task Force report address affordability?*

The purpose of this initial report was to analyze the quality and quantity of existing affordable housing stock. Based on the report's findings, the task force made recommendations aimed at increasing the amount and types of affordable housing that were available. Both the report's findings and recommendations address affordability in specific ways.

With respect to increasing the quantity of housing, the task force began by examining the issue through an economic lens. The supply of affordable housing was tied to factors such as fees and regulations, the availability of land, and the existence of developer subsidies. The report states that the strong economy in 2000 impacts the cost of housing. A tight labor market increases construction costs and creates bidding wars for land, making housing more expensive to build and purchase. Demand for affordable housing is related to income and demographics, but the report maintains that these issues are

difficult to address at a local level. Finally, the report addresses no-cost issues related to the perception and concerns some communities have about affordable housing, mainly with respect to NIMBYism.<sup>11</sup>

Increasing the supply of affordable housing means finding ways to build quality housing that is attainable to low-income families. The report argues that this is impossible without allowing higher densities in some areas. Compact development can be more affordable to build because less land needs to be purchased, the per-unit cost of housing is reduced, and less infrastructure is needed. Furthermore, concentrated development spares agricultural and undeveloped lands and promotes sustainable land use.

Another way to increase the supply of affordable housing is to provide incentives to developers. The task force states that reducing the cost of housing development requires financial incentives in order to substantially increase the development of affordable units. In speaking with developers, members of the task force discovered that current incentives for building affordable housing involved complex financing and political opposition. The report also points out that through the federal mortgage interest deduction and/or the property tax structure, almost all homeownership in the state is subsidized. Regardless of the structure, the huge amount of subsidy dollars needed to increase the supply of affordable housing will require help from all sectors of government and the public.

NIMBYism and political opposition to the development of affordable housing also affects the supply side of the equation. The report addresses this issue by calling on all cities within the region to do their share and welcome affordable housing. Furthermore, the report calls on the Met Council and other state agencies to award financial assistance to municipalities based upon their production of affordable housing.

Not only does the report call for partnerships between cities and state government, but it also addresses the need for collaboration with the non-profit sector and applicable industries. The non-profit sector can do much in terms of advocacy and fundraising, and organizations such as land trusts create long-term affordable dwellings. Other industries, such as architecture, landscape architecture, and civil engineering can all contribute expertise that might lead to the improvement or increase of affordable housing. The task force recommends that skill-building and resource streamlining be taken advantage of via a resource center with a “coordinated system of technical assistance.”<sup>12</sup> Model ordinances and guidelines, guidebooks for mixed-income developments, city training in the development process, and the development of model housing rehabilitation programs are all suggested strategies.

The report is careful to define affordable housing, especially with respect to housing quality. Housing quality is defined by the report as features that are long lasting, indistinguishable from market-rate housing, and well maintained. The increasing

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<sup>11</sup> NIMBYism is an acronym for Not-In-My-Back-Yard, a sentiment that refers to market-rate communities' tendency to disapprove of affordable housing development within their neighborhood.

<sup>12</sup> *Affordable Housing for the Region: Strategies for Building Strong Communities*, Mayors' Task Force on Housing. 2000 p.24

popularity of mixed-income developments is cited as one way to create housing with these characteristics. One issue targeted by the report as directly related to quality housing is property management and maintenance. Careful tenant screening, regular maintenance, and the availability of social services are all factors in housing quality. Furthermore, design techniques and sound financial planning increase the likelihood that a development will be well maintained and supported by the community. Both of these strategies can be utilized with the help of city involvement in the development process.

After addressing factors that relate to affordable housing quantity and quality, the task force makes recommendations that aim to increase both issues. One recommendation is to ensure that local planning and zoning enables affordable housing to be built. For many municipalities, this means increasing density. For others, it may mean there are inconsistencies between the zoning code and the comprehensive plan. Some Twin Cities' municipalities cannot meet their comprehensive density goals under the restrictions of their current zoning. The task force further recommends that cities allow for more flexible land use regulations, through adjustable requirements, zoning overlays, and special districts.

Land use restrictions can also be improved at the state level. The task force requested that the State Legislature change laws that hinder the rezoning of land. After the report was published, rezoning legislation was passed, and residential land can now be zoned higher density with only a majority vote of city council members, as opposed to the previously required supermajority.

Another recommendation the task force makes involves property taxes. The report argues that rental property taxes should be at the same percentage as homestead property taxes. In 2000, rental property taxes were more than twice as high as homestead taxes. Today, rental and homestead property taxes are the same, largely because of the Mayor's Task Force on Affordable Housing.

The lack of funding for affordable housing subsidies and financing is listed as a barrier to affordable housing, and the task force makes several suggestions. Cities are asked to continue their level of support, and the state is asked to dedicate 1% of its general fund budget and a portion of the mortgage registry tax to affordable housing. The federal government is noted for reducing funding for affordable housing over the last two decades, and the task force recommends that they increase the limits on private activity bonds and low-income housing tax credits, and index them for inflation. The report also asks that the federal government return to the development business, and create affordable housing once again.

### ***How does the first Mayor's Task Force report address sustainability?***

The focus of the Mayor's Task Force on Housing's 2000 report is to state findings and find strategies for increasing the quantity and quality of affordable housing. Frequently, there is a perception that building "green" adds cost to a building project, discouraging a

trend toward ecological development. As expected, the 2000 report does not directly address sustainable design. Promisingly, however, environmental issues are mentioned.

Early on in the report, the task force establishes reasons why affordable housing is important. One of the major reasons cited is the problem of congestion. The average distance from workplace to the home has increased, as have commute times and traffic jams. Since cars are expensive and the need for them has increased, one key to affordable development is a connection with mass transit. Furthermore, mass transit is one way to reduce harmful effects on the environment that can be spurred by development. Less pollution-producing traffic, and the slowing down of the construction of newer, larger roads can be by-products of sustainable and affordable housing development.

The report also mentions the importance of environmental protection when it argues for higher density zoning. Without providing details, the task force points out that good design can allow for increased density and attractive affordable housing without unnecessarily damaging the environment. Furthermore, the report goes on to say that cities that are not willing to grow more densely are fostering sprawl, which increases pollution and traffic congestion. These outcomes affect the entire region, not just cities that choose not to build compactly.<sup>13</sup>

Finally, the task force argues that funding for environmentally related projects such as pollution clean up and transportation initiatives should be directly related to a cities performance with respect to affordable housing. To some extent, this type of incentive is already offered through the Metropolitan Council's Livable Communities Act.

### ***What are the opportunities?***

More specific links between affordability and sustainability should be added to subsequent Task Force reports.

Reducing congestion is cited as a major reason to increase affordable housing, yet the environmental impacts of this are not mentioned in the report. The report does make the connection between financial incentives for affordable development to cities by way of funding for environmental projects. Additional incentive should be considered to promote affordable housing and environmentally responsible and sustainable development.

Despite the emphasis on partnerships within the report, environmental groups are not listed as potential allies for affordable housing. Strong leadership requires strong partnerships, and political weight can increase when it includes a variety of backers. It would be a great loss to overlook a partnership between affordable advocates and environmental advocates. Finally, there is great attention given to the idea of "long-lasting" affordable housing. Land trusts and rental property tax cuts are suggested. However, the importance of sustainability when discussing long term affordable housing

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<sup>13</sup> *Affordable Housing for the Region: Strategies for Building Strong Communities*, Mayors' Task Force on Housing, 2000 p.10.

is overlooked. Long-lasting affordable housing involves ecological strategies such as durable materials, resource efficiency, and energy. Guidelines supporting energy and resource efficiency and waste reduction (including short and long-term issues related to durability and maintenance) could be promoted by the task force. In addition, long-term issues of building operation versus short-term first costs for systems and materials must be evaluated and assessed to determine how affordability and sustainability impact design and development.

## **Report #2: Affordable Housing: Making it a Reality**

### ***How does the second Mayor's Task Force report address affordability?***

The purpose of this second report, published in October of 2002, was to identify specific ways to increase affordable housing in the region. One way this was done was by highlighting local examples of developments that were successful and affordable. The case studies included developments in Chaska, Minneapolis, and St. Peter.

Chaska's Clover Field Homes feature mixed development of retail and housing. The homes were kept affordable partially by using modular technology. Modular technology allows prefabricated parts to be assembled at the job site, reducing the amount of time and labor needed for construction. Housing can be built in a matter of days.

Chaska is also in the process of creating a land trust that will ensure long term affordable housing. The organization will be non-profit, but will receive initial funding and support from the city.

The Greater Metropolitan Housing Corporation (GMHC) is using a construction model that includes best practices and new technologies. Called an "Integrated Building System," GMHC uses standardized parts, including panelized flooring, foundations, and walls that can be used together in a variety of ways. The result is less expensive construction and design. An experimental house in Minneapolis has been constructed, and future use of the system is anticipated. GMHC is now hoping for state certification to reduce the amount of resistance within the development industry against using new techniques and construction practices.

St. Peter's approach to producing affordable housing stemmed from a political approach, rather than construction techniques. In response to a destructive tornado, the city acted as a developer and allowed the City Council to make decisions that were only later ratified by the Planning Commission. This process was allowed because the importance of building affordable housing was valued more than historic political procedures. The result was that smaller lots, unfinished space, and narrower streets were permitted even though they did not meet the zoning codes.

The arguments made in this report based upon the previous case studies were many and diverse. First, the task force pointed out that each project succeeded in attracting buyers and renters, meaning that smaller homes on smaller lots are in demand. This realization

may encourage profit-driven developers to reconsider building affordable housing and increasing density.

Second, the need for a streamlined regulatory approval process is discussed. It is important that developers interested in building affordable units not be discouraged by development processes and procedures. GMHC's experimental house in Minneapolis was difficult to build, because new design and construction techniques had to be approved by state government and then explained to industry officials. This process slowed down the building of the first GMHC house. As more new technologies and approaches were reviewed and approved, developers will be less hesitant to try them. Furthermore, the task force recommends that regional workshops be held to educate cities in new development and design techniques and strategies, thus improving city officials' ability to work with developers. It also recommends that Livable Communities Grants be weighed upon an applicants streamlining of development approval processes or a statewide process might be approved for all cities.

Even if approved, developers may resist using new strategies, techniques, and technologies that require time to learn and may initially cost more for construction. Currently, The Builders Association of the Twin Cities is working with the Center for Urban and Regional Affairs to explore models and strategies for reducing costs for affordable housing design. However, the task force asks that incentives be considered as well, with the goal of encouraging developers to try new methods of design and construction.

The task force emphasizes that housing must remain affordable over time. Both reports mention that land trusts are considered one way to create long-lasting affordability by reducing the cost of the property. However, the second report also mentions the concept of a second mortgage as a way to maintain a homestead's affordability. Second mortgages are offered by a community development agency or a land trust, and allow a family to supplement a smaller mortgage to be able to buy decent housing. The second mortgage, however, is not repaid until the first mortgage is paid off or the house is sold. The task force lists the multiple benefits of second mortgages. First, the loan can be reinvested to another family once it is paid back. Second, this system does not require the development of new structures, and can be applied immediately to existing property. Third, second mortgages are relatively simple to be administered. Currently, however, there is no standard process for writing these mortgages. A streamlined process would help reduce the time and money needed to administer housing loans.

Three other suggestions are made by the task force to maintain long-term affordability. First, cooperative housing is suggested. By sharing the cost of the land, as well as the cost of maintenance and repair, housing is kept affordable. Second, mortgage foreclosure prevention programs are suggested to prevent families from losing their homes due to economic struggles. Keeping a home that was purchased at an earlier time for an affordable price is then possible. Finally, preservation programs encourage homeowners to buy, and possibly repair, older housing stock, which can be more affordable than new developments. Rehabilitation programs also encourage families to purchase older

housing stock at an affordable price, and then make improvements with financial assistance.

All of the long-term affordability tactics mentioned above address homeownership, but long-term rental affordability is also important. The task force argues that building affordable rental housing is impossible without subsidies, and maintaining rental affordability is even more difficult. The task force encourages preserving existing rental units, which is less expensive than building new units, and argues that incentives should be provided to property owners that do so.

One of the major barriers to building new affordable housing is funding. In addition to city contributions, the task force offers some suggestions in order to increase the amount of government funding for affordable housing initiatives. Tax increases are proposed to the mortgage registry tax and the deed transfer tax to create an affordable housing fund. Counties collect both taxes, with most of the taxes passed on to the state. If the taxes were raised by two cents, an additional \$9 million would be produced that could be used for affordable housing.

The task force makes other suggestions to secure government funding for affordable housing. The report suggests that the state legislature raise levy limits for Housing and Redevelopment Authorities, on the condition that the money is used for affordable housing. Second, the report argues that private activity bonds be allocated according to state priorities, namely, affordable housing. Third, the task force asks that the state maintain its existing levels of funding for affordable housing despite budget shortfalls. Furthermore, they ask the state to bond \$20 million per year for the next five years to concretely address the need for affordable housing.

The report suggests that the federal government increase funding for the Section 8 program, which supports families, rather than housing stock. In terms of housing development, the task force asks that the federal government also support project-based assistance by funding the construction of new affordable housing. The report found that despite financial incentives and assistance with which to build affordable housing, many communities still oppose the affordable developments in their neighborhood. The task force reports that communities are less likely to oppose affordable housing if they are involved in the development process from the beginning.

### ***How does the second Mayor's Task Force report address sustainability?***

Although the first task force mainly addressed sustainability indirectly, there were references to concepts such as land use, density, and transportation that have ecological impacts. In the second report, however, sustainable construction is addressed directly, albeit moderately. In the section of the report that addresses ways to maintain the affordability of housing over time, sustainable construction is mentioned as an option for doing so. The task force acknowledges that up front costs might seem high, but

investment in “good, strong, energy efficient materials prevent the need for rehabilitation and high energy costs in the long-run.”<sup>14</sup>

### ***What are the opportunities?***

Recommendations within the report that address eco-affordable housing would be more usable if they were accompanied by more detail, specific guidelines, or best practices.

One of the recurring suggestions given by the second task force involved developing streamlined resources for all parties involved. Unfortunately, there is no information about sustainability issues in any of the best practice or model creation strategies mentioned in the report. It is important to know the impact that sustainable development and design strategies and techniques have on the environment. “Best practices” should be further defined and include ecologically responsible and affordable design methods. Furthermore, the second report does something the first report doesn’t: it mentioned eco-affordable construction as a part of the solution for affordable housing. However, it does not fully develop or define the concept or strategies. There is a great opportunity and urgency to further develop these issues in future reports.

## **3.2 Smart Growth Twin Cities**

Smart Growth Twin Cities is a project initiated by the Metropolitan Council and funded by the McKnight Foundation to determine community and regional growth needs in order to intelligently plan for future development. The principles of Smart Growth include preserving natural space, taking advantage of transportation networks, and designing human scale communities.<sup>15</sup> At the community level, the Council awarded development grants to specific projects that used such principles to create or revitalize neighborhoods. At the regional level, the Council used public workshops, Smart Growth experts, and government officials to prepare and update the regional document Blueprint 2030, which is discussed in more detail below.

Smart Growth Twin Cities is an initiative modeled after the Smart Growth Network, which is a national Smart Growth coalition spearheaded by the Environmental Protection Agency and several non-profit and government firms. The Smart Growth Network offers this complete list of principles:<sup>16</sup>

- Mix land uses
- Take advantage of compact building design
- Create a range of housing opportunities and choices
- Create walkable neighborhoods
- Foster attractive, distinctive neighborhoods with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environment areas
- Strengthen and direct development towards existing communities

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<sup>14</sup> *Affordable Housing: Making it a Reality*, Mayors’ Task Force on Housing, 2002 p.23

<sup>15</sup> Available at <http://www.metrocouncil.org/sgtc/about.htm>

<sup>16</sup> Available at <http://www.smartgrowth.org/sgn/whatissgn.pdf>

- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost effective
- Encourage community and stakeholder collaboration in development decisions

***How does Smart Growth Twin Cities address affordability?***

While Smart Growth is a comprehensive strategy toward development, affordable housing is clearly a high priority. Many of the principles listed above address affordable housing, both directly and indirectly.

Mixed land uses can encourage affordable housing in a number of ways. First, mixed land uses make it less obvious when some housing is smaller or less elaborate than other buildings, mainly because all building types are not the same. Using design strategies that make the appearance of affordable housing consistent with the architectural vocabulary and detailing of the community increases the chance of successful integration. Second, mixed land uses encourage walking to shops, offices, or jobs, which can allow people to live in the community who walk or use public transportation. Finally, mixed land uses allow the conversion of non-housing structures into housing. Adaptive reuse of existing buildings for housing can save construction costs while minimizing waste. Compact building design also encourages affordable housing. Compact buildings require fewer materials and may take less time to build, offering labor and material cost savings. In addition, directing development toward existing communities can lower housing construction costs by benefiting from existing infrastructure and amenities. Finally, making cost effective development decisions allows contractors to build housing at the lowest possible cost, thus increasing its affordability. One of the examples of a Smart Growth community in the Twin Cities region that addresses affordability is the Heights of Chaska; a project that reserved 30% of its housing as affordable.

***How does Smart Growth Twin Cities address sustainability?***

The environment is another high priority in Smart Growth, and its principles address it on many scales. Compact building design is a strategy that can aid sustainable design and construction. A smaller building footprint creates opportunities for increased density, open space, and sustainable land use. Furthermore, compact buildings, if properly designed, can also increase building efficiency and reduce consumption of natural resources. Preserving open space, farmland, natural beauty, and critical environment areas is a direct, larger scale approach toward sustainable development. Strengthening and directing development towards existing communities, is a more indirect approach toward the same goal: it encourages the preservation of open space by concentrating development where it has already occurred. Finally, providing various transportation choices is another indirect response to sustainable development. The more transportation options a resident has the less likely they are to use automobiles. The Smart Growth Twin Cities community in Brooklyn Center incorporates this principle by including a transit hub within its boundaries.

### *What are the opportunities?*

Smart Growth Twin Cities might offer specific guidelines to integrate affordable and sustainable development techniques.

Smart Growth initiatives are perhaps the most explicit regional guidelines related to affordable and sustainable housing. However, the Smart Growth strategies focus at the larger planning scale. Additional resources, strategies, and guidelines could be developed at the scales of the neighborhood, site, and building to further promote sustainable and affordable housing. Unfortunately, the specific processes needed to create “Smart” development are not included in the initiative. Furthermore, there is no requirement that communities or municipalities develop following Smart Growth principles.

Smart Growth initiatives need legal standing to be implemented.

Smart Growth is an important concept for eco-affordable housing development. These guidelines could make many positive changes if they had a legal standing and stronger local support. Smart Growth advocates should work to gather support, lobby legislators, and combine affordable housing and sustainable design constituents to strengthen their efforts and ensure implementation of the initiatives.

### **3.3 Blueprint 2030**

Blueprint 2030 is a part of the comprehensive development guide that the Metropolitan Council is required to prepare and adopt per Minnesota Statute Section 473.145. Blueprint 2030 was completed and adopted by the Metropolitan Council in 2002, and as mentioned in the previous section, was guided by Smart Growth principles. Blueprint 2030 not only analyzes the current challenges, opportunities, and benefits of planning with respect to transportation, housing, and the environment, but it also consists of policy directions that are to be used to make changes. Implementation strategies are set forth that offer ways and means to achieve the goals of the Blueprint.

The Blueprint has significant power with respect to local land planning. Not only do local governments have to create local comprehensive plans, but those plans must be submitted to Met Council for comments. Furthermore, if the Council finds that a local plan is significantly incompatible with regional plans, the Council can require local governments to revise their land plans.

### *How does Blueprint 2030 address affordability?*

One of the primary goals of Blueprint 2030 is the creation of housing that offers choices in housing types and locations. This specifically includes lifecycle and affordable housing, and the Blueprint calls for 15,000 to 18,000 new units of housing within the region each year. Not only does the Blueprint write policies with such goals in mind, but it also offers strategies, such as technical assistance and financial incentive programs to help such development occur.

Affordable rental housing is also addressed in the Blueprint. The Metropolitan Council administers the local Section 8 program and the Family Affordable Housing Program,

which provide tenant-based and unit-based assistance to renters, respectively. Furthermore, multi-family unit ownership is encouraged. The Blueprint points out that market demand for single-family detached housing peaked in the 1990s. This statistic supports the Blueprint's call for higher density housing units.

The Blueprint also addresses the importance of location with respect to affordable housing units. It promotes the incorporation of affordable housing in attractive market-rate developments. Furthermore, its Inclusionary Housing Incentive Program provides financial support to developers that are incorporating affordable units into their market-rate housing developments.

The desire of the Blueprint to create affordable culminates in Policy 4 of the Blueprint. Policy 4 mandates that the Met Council will support the preservation and production of affordable housing in locations that integrate well with transportation needs. Furthermore, the policy states that the Council will “plan for and monitor a land supply sufficient to foster the development of ... affordable housing.”<sup>17</sup> This implies that the Met Council will extend the Metropolitan Urban Services Area (MUSA) as necessary to provide adequate affordable housing.

### ***How does Blueprint 2030 address sustainability?***

Blueprint 2030 addresses environmental protection and sustainable development throughout the document. However, the strategies focus on larger planning issues through regional and municipal suggestions, policies, and guidelines.

One of the goals of the Blueprint is to conserve and protect the environment throughout the region. The need for natural corridors that connect environmental spaces is included in the goal in order to sustain wildlife and ecosystems. The preservation and improvement of existing corridors, such as the Mississippi River, is also advocated. The Blueprint makes a point to stress the importance of integrating housing development, transportation, and the environment. It shows how high-density housing and mixed-use development not only increase the ability of developers to create affordable housing and the transit options of residents, but allow more land to remain undeveloped natural areas. Furthermore, the Blueprint advocates that 30% of new development occurs on infill sites, rather than greenfields.

In the Policy section of the Blueprint, Policy 2 states that natural areas should shape development. That is, development should not occur if it is detrimental to the environment. The policy states that the Council will promote and support conservation strategies used during land-use planning, and that it will promote affordable housing that avoids environmentally sensitive areas and uses natural features and green space. Policy 7 also addresses the environment, stating it will “conserve natural resources as the region grows.”<sup>18</sup> Council actions in support of this policy are listed as working and encouraging others to work to conserve natural resources, and collaboration with the state's

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<sup>17</sup> Blueprint 2030, 2001 p. 25.

<sup>18</sup> Blueprint 2030, 2001 p. 34.

Department of Natural Resources to create policies, programs, and incentives that preserve the natural environment.

Because water management falls within the jurisdiction of the Metropolitan Council's responsibilities, it is no surprise that Blueprint 2030 offers the most specific sustainability strategies with respect to stormwater and wastewater services. Such strategies include: information and training for proper septic system use, the removal of point and non-point pollution sources that affect ground and surface water, maximizing surface water infiltration, and promoting conservation initiatives.

### ***What are the opportunities?***

Blueprint 2030 could have included more neighborhood, site, and/or building scale recommendations with respect to housing affordability and sustainability.

As a regional policy Blueprint 2030 addresses both affordable housing and sustainable development in comprehensive and integrated ways. The Blueprint includes the strategy of “encouraging and investing in housing that conserves and incorporates natural resources as amenities and attracts private housing investment.”<sup>19</sup> However, there are many opportunities for further development of resources and information at the building and site scales to encourage and support eco-affordable housing.

The Blueprint states: “Development that integrates transportation, housing and natural resources does not hinge on a massive infusion of tax dollars.” This is because of the success of partnerships between government, nonprofits, businesses, and agencies. There is an opportunity to use this type of integration to advocate for eco-affordable housing, especially at the scales of neighborhood planning and site and building design. Adding tools and strategies at the building scale would make the environmental impact of the Blueprint much deeper, while providing an opportunity to integrate issues of the environment and housing through the use of partnerships, funding, and technical assistance.

The environmental impacts of housing have the potential to affect the entire region, especially since ecologically designed and constructed housing is rarely built. Housing affects the water supply, water quality, air quality, energy consumption, natural resources, and waste within the Twin Cities region. The Blueprint shows the importance of regional environmental initiatives, especially due to stormwater runoff, and groundwater levels. These problems can be greatly reduced with site-scale and regional measures. For example, rooftop gardens and landscaping can reduce the amount of phosphorus, oils, and land fertilizers that harm water quality. The expansion of sustainable development goals to relate to the design and construction of housing would be well within the jurisdiction and responsibility of the Metropolitan Council. Blueprint 2030 realizes that public and private assistance are not enough to provide the affordable housing needed without the support of a regional approach.<sup>20</sup> The same could be said for sustainable housing. Additional information, guidelines, and resources at the scale of the

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<sup>19</sup> Blueprint 2030, 2001 pgs. 45, 49,

<sup>20</sup> Blueprint 2030, 2001 p26.

site and housing would only help to promote the broad environmental goals of the Blueprint.

Policy 2 of the Blueprint also focuses on larger planning issues. While it promises to advocate for affordable housing that respects natural conditions and uses natural features, there is no language that reflects similar considerations on the building scale. Advocating for the protection of the environment through ecologically sensitive design and construction techniques would make Policy 2 more complete.

Policy 7 also avoids the potential for green construction to help implement its goals. The goal of Policy 7 is to conserve natural resources despite considerable growth. Material selection, recycling, re-use, and resource efficiency are tangible, specific ways that housing can contribute to this goal. If the Council's goal of 15,000 to 18,000 new units of housing built each year is met, green-building techniques can make a significant impact on the conservation of natural resources.

The Blueprint includes smaller scale policies when it comes to gasoline-powered engines and air pollution. The Blueprint notes that declining air quality in the region is directly related to transportation and automobiles. In response to air quality issues, it promotes clustered development and increased mass transit options. It could also include explicit recommendations for energy consumption and efficiency related to building heating and cooling, which can have direct impacts on air emissions. In addition, lawnmowers, snowblowers, leafblowers, and other yard machines can be significant contributors to local air and noise pollution. Furthermore, the larger the lawn, the longer duration such machines might be used. Smaller lots, native plantings, and manual tools such as shovels and rakes are all more affordable and more environmentally sensitive options. The Blueprint could include policies and examples at the smaller site and building scales.

### **3.4 Housing 5000**

Housing 5000 is a development initiative created by the current mayor of St. Paul, Randy Kelly. The plan is to build 5000 new housing units in St. Paul during his four years as mayor. Mayor Kelly's plan is quite specific, and offers details regarding the financial and development goals of the plan.

The financing of Housing 5000 is imperative, as it requires a \$1 billion budget. In order to jumpstart the funding process, Mayor Kelly and St. Paul's city council agreed to commit \$20 million to the project, in the form of the Mixed-Income Housing Fund. This money, along with money raised through partnerships with other local sources of funding, is only a small part of the budget. Federal funding, such as Community Development Block Grant funds have been or will be sought, and the philanthropic sector will also be approached. Finally, \$90 million is anticipated through the use of Tax Increment Financing (TIF).

There are specific types of development that Mayor Kelly would like the Housing 5000 plan to help create. One target area is downtown St. Paul, where there is ample

opportunity to build vertically and offer the benefits of downtown living. The plan also addresses transit corridors with concentrated development. Finally, senior and affordable housing are included in the development goals of the plan. Housing 5000 is currently on-track to meet its goals. The city maintains a Housing 5000 Projects Scorecard, which keeps track of all preliminary, current, and completed housing construction that is a part of the project.<sup>21</sup> Currently, over 1300 new dwelling units have been built as a part of Housing 5000, with thousands more in development and pre-development phases.

### ***How does Housing 5000 address affordability?***

The most direct way that the Housing 5000 plan addresses affordability is by requiring that 20% of the 5000 units built be affordable. The plan defines affordable as housing that is reasonable for families earning 50% of the median income or less, and it mandates that half of the affordable units developed be at costs that are reasonable for families earning just 30% of the median income or less.

The plan also specifically calls for the preservation of existing housing stock, especially affordable units. The large amount of housing units being built should not serve as replacements for existing housing, but rather, as supplements. Rehabilitation and upkeep remain priorities for the accomplishing this goal. A less direct impact on affordability is mentioned in the form of funding programs and processes. Without providing specific details, the Housing 5000 report states that it will use a funding mechanism that “maximizes production and minimizes needless conflict,” and reduces “red tape.” The plan also mentioned reducing transaction costs and simplifying procedures. The difficulties of financing affordable housing due to the complex and cumbersome process of securing funding was listed as a serious barrier to affordable housing in the Mayor’s Task Force report on affordable housing, *Affordable Housing: Making it a Reality*. Not surprisingly, Mayor Randy Kelly was a co-author of that document. Ultimately, if the process of financing and building housing were streamlined and efficient, housing of all types would be easier to develop.

### ***How does Housing 5000 address sustainability?***

The Housing 5000 Plan does not directly address sustainability. However, some of the aspects of the plan have environmental implications. For example, one of the plan’s goals is to increase housing along transit corridors. This increases the use of alternative modes of transportation that can reduce pollution and dependence on automobiles. Also, the plan lists the “vertical expansion” of downtown as a commitment of the city. High-rise and high density developments support more sustainable land use and can help to decrease the need for further impact on agricultural and undeveloped land.

### ***What are the opportunities?***

There is an opportunity in this plan to incorporate the values of sustainable design. Sustainable housing, if designed to promote durability and lifecycle housing, would benefit the city ecologically and increase the longevity of the new housing. As the plan mentions, the maintenance and rehabilitation of existing housing stock is a priority.

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<sup>21</sup> Available at [www.housing5000.com](http://www.housing5000.com)

Furthermore, creating partnerships with sustainable design advocates could increase the scale, notoriety, and available funding for the project. A greater variety of industries and professions could be stimulated by the plan's growth, and public support would likely increase. Finally, sustainability advocates could serve as additional fundraisers and financiers for housing projects that followed ecologically responsible guidelines.

## 4.0 Sustainable Development Guidelines

The most specific regional guidelines for sustainable buildings are not found in planning documents and policies. Rather, they reside in state and local resources used for the design and construction of new buildings. In contrast to the previously discussed policies, these guidelines focus on architecture and site design. As a result, their emphasis on regional planning is minimal. Three regional sustainable design guides include: 1) The Minnesota Sustainable Design Guide (MSDG); 2) Building Benchmarks and Beyond (B3) Guide (also known as the Minnesota Sustainable Building Guide – MDBG); and 3) the St. Paul Sustainable Decision Guide.

### 4.1 Minnesota Sustainable Design Guide

The Minnesota Sustainable Design Guide (MSDG) was created for Hennepin County by the Center for Sustainable Building Research (Carmody and Guzowski, et al.) at the College of Architecture and Landscape Architecture at the University of Minnesota. The tool was developed to help the county integrate sustainable design in new construction projects. It includes a compilation of strategies, performance indicators, resources, and techniques to integrate sustainability into all stages of a project. The guide was developed in collaboration with many design practitioners, building scientists, researchers, and government agencies. It is available on line at: [www.sustainabledesignguide.umn.edu](http://www.sustainabledesignguide.umn.edu). The MSDG uses a scoring system to evaluate a project in terms of sustainability, allowing a total of 100 points. These points are distributed for six environmental topics: Site, water, energy, interior environmental quality, materials, and waste. The tool can be used at any phase of design to evaluate strategies and to assess the integration of sustainable strategies in a project. It is intended to inform design development and thinking, rather than be used only as evaluation tool on completion of a building. The guide is designed for commercial and institutional buildings; however, many of the strategies can be adapted and applied to housing.

The goal of the MSDG is to “integrate sustainable design into the building design and operation processes for new and renovated facilities.”<sup>22</sup> The guide offers instructions and a checklist to further enable users to build sustainable buildings. Project personnel can also use the resources offered by the MSDG to further investigate specific sustainability topics. The guide includes design strategies, environmental topics, benchmarks, goals, and resources. Finally, evaluation measures are provided so that users of the guide evaluate design decisions.

#### *How does the Minnesota Sustainable Design Guide address sustainability?*

The purpose of the MSDG is to offer clients, building owners, designers, and builders a tool for creating more sustainable buildings. Listed below is an outline of the environmental topics and strategies addressed by the guide. Additional information is provided on how to implement and evaluate the strategy. While the guide focuses on commercial architectural design, almost all of the strategies directly apply to a sustainable approach to affordable housing:

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<sup>22</sup> Minnesota Sustainable Design Guide, Overview, 2000 p.1

### Site

- Direct Development to Environmentally Appropriate Areas
- Maintain and Enhance the Biodiversity and Ecology of the Site
- Use Microclimate and Environmentally Responsive Site Design Strategies
- Use Native Trees, Shrub, and Plants
- Use Resource Efficient Modes of Transportation

### Water

- Manage Site Water
- Use Gray Water Systems
- Use Biological Waste Treatment Systems
- Conserve Building Water Consumption
- Conserve Cooling Tower Water Consumption

### Energy

- Optimize Building Placement and Configuration for Energy Performance
- Optimize Building Envelope Thermal Performance
- Provide Daylighting Integrated with Electric Lighting Controls
- Provide Efficient Electric Lighting Systems and Controls
- Maximize Mechanical Systems Performance
- Use Efficient Equipment and Appliances
- Use Renewable or Other Alternative Energy Sources
- Integrate All Systems and Reduce Total Energy Use

### Interior Environmental Quality

- Provide a Clean and Healthy Environment
- Control Moisture to Prevent Microbial Contamination
- Provide Ample Ventilation for Pollutant Control and Thermal Comfort
- Provide Appropriate Thermal Conditions
- Provide Effective Lighting
- Provide Appropriate Building Acoustical And Vibration Conditions
- Provide Views, Viewspace, and Connection to Natural Environment

### Materials

- Use Materials with Low Environmental Impact During Their Life Cycle
- Use Salvaged and Remanufactured Materials
- Use Recycled Content Products and Materials
- Use Materials from Renewable Sources
- Use Locally Manufactured Materials
- Use Low VOC-emitting Materials
- Use Durable Materials
- Use Materials that are Reusable, Recyclable or Biodegradable

## Waste

- Reuse Existing Buildings
- Design for Less Materials Use
- Design Building for Adaptability
- Design Building for Disassembly
- Salvage and Recycle Demolition Waste
- Recycle Construction Waste
- Reduce and Recycle Packaging Waste
- Reduce and Recycle Waste from Building Users
- Reduce and Properly Dispose of Hazardous Waste

### ***How does the Minnesota Sustainable Design Guide address affordability?***

The MSDG is not intended to address affordability or housing. However, the relationship between affordability and sustainability is indirectly evident in the MSDG, and there are resources and information on short and long-term costs for the design strategies. The guide could be adapted to address housing and more explicitly affordability. Strategies that either directly or indirectly relate to both sustainability and affordability include, but are not limited to the following:

#### Site: Direct Development to Environmentally Appropriate Areas

Projects receive a point if the building site is currently zoned at 60,000 square foot per acre. This is only applicable to multi-family housing, but higher densities do allow for cost reduction per unit due to shared infrastructure, structure, and site.

#### Site: Maintain and Enhance the Biodiversity and Ecology of the Site

One of the contributing factors to the 3 points available in this strategy is to avoid major changes to sensitive topography, and to minimize the amount of impervious surfaces built on the site. The equipment and labor needed to alter topography can be quite expensive, depending on the type and condition of soil. Furthermore, the cost of constructing and laying down impervious surfaces such as roads and driveways can be reduced if such areas are minimized. Finally, if the building's footprint is also minimized, the building's energy efficiency is increased and the cost of roofing is decreased.

#### Site: Use Microclimate and Environmentally Responsive Site Design Strategies

The attainment of the 2 points available with this strategy can include the location of site elements in ways that maximize heating and cooling benefits, reduce erosion, and ensure drainage. Efficient heating and cooling can significantly reduce operation costs for the owner, and erosion reduction and drainage capacity can deter costly water damage.

#### Site: Use Native Trees, Shrub, and Plants

Projects can receive 2 points if they use native vegetations on the site for the purposes of conserving water and reducing the need for pesticides. Water and pesticides are expenses that can be reduced by using this technique.

Site: Use Resource Efficient Modes of Transportation

This strategy promotes locating buildings within a quarter-mile from at least two bus lines or light rail stations, or within a quarter-mile from retail and public services. Proximity to such amenities can make housing more affordable because it reduces or eliminates the need for an automobile.

Water: Manage Site Water

This strategy is dependent on the specification of an irrigation systems and vegetation that reduces water consumption. Similar to the site strategy of using native vegetation, this can reduce water costs to the owner.

Water: Conserve Building Water Consumption

This strategy utilize water efficient plumbing fixtures. There is a long-term cost benefit for the owner if the amount of water used by the occupants can be reduced.

Energy: Optimize Building Placement and Configuration for Energy Performance

This strategy uses building placement on the site to minimize energy use. The techniques specified include daylighting, solar heating, and natural ventilation. Minimizing energy use can have profound long-term savings for building operation.

Energy: Optimize Building Envelope Thermal Performance

This strategy includes guidelines for building design and material selections that improve the thermal performance of a building, which can also save homeowners money by decreasing dependence on mechanical heating systems.

Energy: Provide Daylighting Integrated with Electric Lighting Controls

This strategy focuses on daylighting. It not only suggests using site placement to utilize daylight, but building massing and design, which can provide long-term energy savings.

Energy: Provide Efficient Electric Lighting Systems and Controls

This strategy includes additional methods to maximizes energy efficiency.

Energy: Maximize Mechanical Systems Performance

This strategy also offers points for energy efficiency through heating, ventilating and air conditioning systems, which include strategies to reduce long-term operating costs.

Energy: Use Efficient Equipment and Appliances

This strategy focuses on the selection of efficient equipment and appliances to reduce energy costs.

Materials: Use Salvaged and Remanufactured Materials

Salvaged and remanufactured materials not only reduce waste, but they are can be less expensive than brand new materials. This can be a direct cost savings to the builder and the owner.

Materials: Use Recycled Content Products and Materials

Similar to above, recycled content products may be less expensive than products made of virgin materials.

Materials: Use Locally Manufactured Materials

The cost of transporting materials to the construction site can be reduced if locally manufactured materials are used. If 25% of the total products used at the site are manufactured within 500 miles of the site.

Materials: Use Durable Materials

This strategy encourages the use of durable materials to reduce the cost of replacement and maintenance for the owner.

Waste: Reuse Existing Buildings

Renovating an existing building may cost less than a new building. As adaptive re-use projects are becoming more popular and viable, this is an alternative to new building construction.

Waste: Design for Less Material Use

Minimizing the materials used or the size of the building can save on first costs.

Waste: Design Building for Disassembly

This strategy incorporates previous strategies such as using recyclable or durable materials. Not only do these tactics increase ease in disassembly, but they also can result in resale profits to the owner.

Waste: Salvage and Recycle Demolition Waste

This strategy can offset costs to the developer, and thus the buyer, if demolition waste can be salvaged, reused, or sold.

Waste: Recycle Construction Waste

Similar to the previous strategy, this applies to construction waste.

Waste: Reduce and Recycle Packaging Waste

Manufacturers that spend less on packaging materials can pass those cost savings and reduction of material consumption onto customers.

***What are the opportunities?***

There is great opportunity in the MSDG to provide incentives for its use by including cost information with each strategy.

Many contractors, developers, and designers avoid sustainable construction because of the perceived increase in cost. While this is certainly true in some cases, there is a wealth of sustainable design techniques that can actually reduce construction costs, as well as long-term operational costs. Providing information on cost impacts of various strategies would encourage more people to use and implement some of its strategies. Promoting

the link between sustainability techniques and affordability is critical. The bottom line in the development industry has always been and always will be economic, and the introduction of sustainable design techniques to the construction industry will only succeed if cost and benefit analyses are included.

## **4.2 Building Benchmarks and Beyond (B3) Guide**

The Building Benchmarks and Beyond (B3) Guide (also known as the “Minnesota Sustainable Building Guide – MSBG”) was created by the Center for Sustainable Building Research (Carmody et al.), LHB Architects and Engineers (Carter et al.), and the Weidt Group for the State of Minnesota. The guide aims to improve and expand upon the MSDG by addressing economic outcomes and adding a planning framework to create a framework for using and implementing the guidelines. The B3 Guide is a tool to help clients, designers, and developers determine ways to save first costs, evaluate life-cycle costs, and create performance indicators to measure outcomes and building performance.

Although the format of the B3 Guide is similar to the MSDG, it differs from the latter in several ways. In addition to its emphasis on economic impacts and the sustainable design process, the B3 Guide adds a guideline section on Performance Management Overview, which address the planning framework used to carry out the guidelines; it also reorganizes and integrates environmental topics. Thus, site and water are combined into one topic; energy is combined with a new topic, atmosphere; and materials and waste are combined. Interior environmental quality, however, is still discussed as a separate topic.

### ***How does the B3 Guide address sustainability?***

The purpose of the B3 Guide is to offer a complete process to for creating more sustainable buildings. The document addresses sustainability directly and specifically. Listed below are the environmental topics and the strategies used to measure a project’s success in addressing environmental concerns. Although the guide was developed for institutional and commercial buildings, many of the topics apply directly to affordable housing.

#### Performance Management

- Guideline Management and Commissioning
- Integrated Design and Construction Process
- Planning for Conservation

#### Site and Water

- Avoid Critical Sites
- Erosion and Sedimentation Control
- Stormwater Management
- Reduce Site Disturbance
- Restorative Design
- Reduction of Site Water Use for Plant Materials

- Light Pollution Reduction
- Appropriate Location and Density
- Brownfield Redevelopment
- Encourage Efficient Transportation Alternatives
- Use of Graywater to Reduce Wastewater Treatment Impacts
- Use of Biological Wastewater Treatment System
- Building Water Efficiency
- Outcome Documentation for Site and Water

#### Energy and Atmosphere

- Reduce Energy Use by at least 30%
- Efficient Equipment and Appliances
- Evaluate Renewable and Distributed Energy Generation
- Atmospheric Protection
- Outcome Documentation for Energy and Atmosphere

#### Interior Environmental Quality

- Restrict Environmental Tobacco Smoke
- Indoor Air Quality and Ventilation Framework
- Specify Low-emitting Materials
- Ventilation Based on Anticipated Pollutants
- Ventilation Based on Carbon Dioxide Limits
- Moisture Control
- Thermal Comfort
- Daylight
- Quality Lighting
- View Space and Window Access
- Whole Body Vibration in Buildings
- Effective Acoustics and Positive Soundscapes
- Personal Control of IEQ Conditions and Impacts
- Encourage Healthful Physical Activity
- Outcome Documentation for Indoor Environmental Quality

#### Materials and Waste

- Evaluation of Design for Minimum Resource Use
- Evaluation of Material Properties for Improved Performance
- Waste Reduction and Management
- Outcome Documentation for Materials and Waste

#### ***How does the B3 Guide address affordability?***

The economic analysis tools and strategies in the B3 Guide acknowledge the economic impact sustainable development can have on a building. It is important to note that none of these economic impacts are explicitly defined. It is still the responsibility of the user

of the guideline to determine an accurate cost-benefit analysis. Guidelines that either directly or indirectly relate to both sustainability and affordability include, but are not limited to the following:

Performance Management: Integrated Design and Construction Process

Involving the entire project team from the beginning in the use of the B3 Guide has the potential to reduce lifecycle costs of a building due to a streamlined process and maximized resources. In order to make sure the guidelines are truly effective, the project team must collaborate from beginning to end.

Site and Water: Reduce Site Disturbance

This guideline specifies that Greenfield sites limit soil and land disturbance to 40 feet from the building. Reducing the amount of disturbed site also reduces site and construction costs.

Site and Water: Reduction of Site Water Use for Plant Materials

The efficient use of water or the re-use of rain or site water can both decrease costs.

Site and Water: Appropriate Location and Density

Although not required, this guideline addresses cost-reduction strategies such as using existing infrastructure, locating close to mass transit, and increasing densities.

Site and Water: Encourage Efficient Transportation Alternatives

Locating near existing mass transit and encouraging bicycle use are both inexpensive ways to make housing more affordable for families that may not have personal vehicles. This guideline is also not required.

Site and Water: Use of Graywater to Reduce Wastewater Treatment Impacts

The use of graywater systems can save water costs over time.

Site and Water: Building Water Efficiency

This guideline aims to reduce water use within the building, also improving the affordability of the building over time.

Energy and Atmosphere

The energy and atmosphere guidelines offered in the B3 Guide only apply to buildings greater than 5,000 gross square feet. This excludes most single-family housing. Therefore, none of these guidelines are discussed with respect to affordability, however, it is worth noting that one of the overall goals of this section is to reduce Minnesota's energy costs (which should in turn save the residents of the state money) and one of the objectives is to design buildings that use 30% less energy than is required, which would provide significant energy savings. Furthermore, this guideline could apply to multi-family housing units larger than 5,000 square feet.

#### Indoor Environmental Quality: Moisture Control

Design and construction methods that resist water from penetrating the building can save money used for water damage and/or maintenance.

#### Materials and Waste: Evaluation of Material Properties for Improved Performance

This guideline offers multiple ways to save money when selecting materials. Using recycled materials, locally produced materials, and re-usable materials are a possible ways to reduce costs. The B3 Guide also requires that a percentage of materials be purchased from local sources.

#### Materials and Waste: Waste Reduction and Management

Waste strategies include lowering costs by eliminating the use of unnecessary materials, reducing the need for removal expenses, and promoting management techniques such as salvaging and recycling waste.

#### *What are the opportunities?*

The B3 Guide could include more specific cost-benefit analysis evidence or techniques. While the B3 Guide does incorporate economic impacts into its guidelines, there is still need for more specific explanations and tools to determine how sustainability can impact affordability. Furthermore, the B3 Guide could consider whether there is a potential for currently expensive techniques to become less expensive over time as the construction industry gains skill and knowledge in sustainable practices. An evaluation tool that integrates the guidelines and the short and long-term affordability of design decisions would be an invaluable resource for developers, designers, and owners.

#### The B3 Guide could be modified to include a version for housing.

Another opportunity of the B3 Guide is to differentiate between building types. The guidelines could be adapted to apply to housing. With the large amounts of residential construction occurring in the region, a housing-based sustainable design tool would be a great asset for housing agencies, developers, and designers.

#### Guidelines could be adapted to support building codes.

While it is unlikely that sustainable design guidelines would be mandated for all construction, it would be valuable to work with local building and zoning officials to determine what aspects of the guide could be incorporated into local zoning and building codes.

### **4.3 St. Paul's Sustainable Decision Guide**

The Sustainable Decision Guide for City of St. Paul Facilities is a reference and guide for city-owned development and rehabilitation. While the guide is intended for city structures only, the strategies and suggestions within the resource reflect an approach to sustainability that could easily be modified and translated to non-public projects including residential development.

In March of 1999, the city of St. Paul passed a Sustainability Policy, which is the basis of the Sustainable Decision Guide. The guidelines listed in the Sustainability Policy are to be used in any city-owned building, operation, or city-funded project. The intention of the Sustainability Policy includes using native plants, providing access to alternative forms of transportation, maximize the use or emulation of natural systems, and minimizing the amount of energy consumed.

The Sustainable Decision Guide was initiated by the St. Paul City Council to further explore these intentions. The Council had passed a resolution to determine the feasibility of sustainable development guidelines for city projects. A task force was created consisting of representatives from various city departments. The task force determined that the guidelines would be a compilation of various resources that had already been researched and published.

Once developed, the Guide was placed on the Internet as a public document. The use of the document was ensured by establishing sustainability as a factor in allocating funds for capital expenditures. Specifically, the Guide establishes sustainability as a “balance that exists between the natural and built environments.” This includes the use of products that do not effect the environment negatively, the simulation of natural processes (such as hot air rising, etc), and the adaptation of existing natural systems (such as solar energy). The Guide continues to define sustainability and “green” as well as identify the goals of such principles. One important clarification is that design should be Eco-effective rather than Eco-efficient. This means that design has a positive impact on the environment, rather than a “less bad” or negative impact. Furthermore, the goals of the Guide include the use of materials and products that, among other things, are biodegradable, durable, renewable, made of recycled content, are non-toxic, and directly result in improved environmental conditions.

The Sustainable Decision Guide contains two resources that could be modified to address housing construction. First, the SD Guide includes “10 Simple Things,” which is a document excerpted from Hellmuth, Obata, + Kassabaum’s (HOK) Sustainable Design Guide publication. This document offers “ten simple steps” that, when considered together can improve the overall performance of a structure with respect to the environment. Much of this document applies to large buildings and facilities; however, many of the ideas expressed can be modified to relate to a residential sized structure.

Second, the Guide references the Sustainable Design Checklist, also available through HOK’s Sustainable Design Guide. The checklist is intended as a simple tool to integrate sustainability in a project without dramatically increasing the amount of money or effort needed.

### ***How does the Sustainable Decision Guide address sustainability?***

The SD guide explicitly addresses sustainability in both resources: 10 Simple Things and the Sustainable Design Checklist. The following strategies that explicitly relate to affordability are included in HOK’s 10 Simple Things. HOK suggests that the first step

is to establish an energy budget. This step offers information on the relatively small cost of sustainable energy for large office buildings, but not residential structures. First costs during development can result in long-term affordability, and considering the cost of sustainable energy solutions would be a positive step for any sustainable project.

Step two in HOK's 10 Simple Things is to optimize the building envelope. The document maintains that the impermeability of a building's skin is more important than any other factor in minimizing energy needs. Another way to optimize the building envelope is to take advantage of daylighting as a source of natural light. HOK suggests using daylighting models to ensure this is successful, and encourages going beyond code minimums for energy modeling. Building orientation, exterior landscaping, and other passive solar techniques can all improve energy efficiency without adding significant costs to a project.

Step five cites the Energy Policy Act of 1992, which sets requirements for water efficient plumbing fixtures. This step suggests that composting toilets and the recycling of gray water be used when possible.

Step six states that building materials as well as installation and maintenance techniques be evaluated to minimize the existence of polluted building materials. This item goes a step further, asking the project team to consider the energy used to make, transport, use, and dispose of materials. Products that use the least energy in these situations should be strongly considered.

Storm water is an important consideration for a project of any scale, and step seven requires that storm water systems not increase the pre-project flow of water. Many inexpensive alternatives are suggested, including the use of grassy swales to slow down and absorb storm water and the incorporation of vegetation to naturally recharge ground water. Furthermore, step seven encourages the collection of rainwater on site for non-filtered water uses.

Step eight recommends the use of native vegetation, to reduce the amount of care needed for a species to survive. Step nine argues that if recycling is planned for, it is more likely to occur. This step implies that designing space for recycling is one way to encourage residents to do so. Finally, step ten asks that recycling be a priority for construction and demolition waste. This not only protects the environment, but can actually cost less than simply disposing of used or unneeded materials.

All of the steps offered by HOK's Sustainable Design Guide directly address the potential of a project to follow sustainability principles. Many strategies have a direct impact on costs and affordability. Similarly, a Sustainable Design Checklist is offered by HOK and is published in the Sustainable Decision Guide of St. Paul. The checklist is intended to address sustainability for any city construction projects, while keeping added costs to a minimum. Furthermore, it includes items relating to planning and site work, energy, building materials, indoor air quality, water conservation, and recycling and waste management, each with respect to a specific phase of a project.

The first phase of a project, or pre-design, is covered by the checklist. Generally, the pre-design section of the checklist centers on establishing sustainability goals, allotting budget and personnel to sustainable needs, choosing a project site that will most benefit the environment, and gathering information in order to make sound decisions regarding materials, air quality, and water issues.

The second stage of a project is design and documentation. Here the checklist focuses on many important issues. First, planning and site work items show the need for the site to be designed with pedestrians and alternative transit options in mind. Furthermore, these items address site needs such as erosion control, wastewater treatment, and the maximization of natural systems and sources, such as solar energy and existing ecosystems. The design and documentation section of the checklist also addresses energy, focusing on the use of natural light, tightening the building envelope, and using the most efficient energy systems. Materials and resource efficiency include items such as choosing life cycle materials, locally suppliers, and strategies to minimize waste. Indoor air quality issues relate to reducing indoor air pollution through material choices and design strategies. With respect to water conservation and quality, the checklist includes items that recommend watershed protection, the use of native plants, and the reuse of rain and gray water systems. Finally, recycling and waste management are addressed during the design and documentation section by advocating the use of recycled materials, composting organic waste, and responsibly handling hazardous waste.

During the construction administration phase of a project, the checklist provides items that encourage the proper documentation of the sustainable design process, maintaining sustainability as a priority on the project's agenda, and enforcing sustainable practices used by sub-contractors or employees. Finally, the operations and maintenance phase is covered by the checklist, providing items that assist the owner in fostering sustainable practices through education and building operations and maintenance.

### ***How does the Sustainable Decision Guide address affordability?***

The Sustainable Decision Guide was designed for commercial and institutional projects, so it does not explicitly address construction and design and affordable housing. However, there are many strategies and resources within the Guide that could be adapted to affordable housing.

First, the Guide addresses economic impacts in its definition of “green.” One of the “green” design goals listed is to use resources that “minimize both environmental and economic impact.”<sup>23</sup> Furthermore, other goals listed indirectly imply to reductions in cost, such as using methods that require less energy, less materials, and durable products. Minimizing energy consumed by a project is a goal of the Sustainability Policy of St. Paul, however, no other references to affordability are made directly or indirectly.

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<sup>23</sup>Available at <http://www.stpaul.gov/depts/realestate/sustainable/definition.html>

Within the two major tools of the Guide, affordability is addressed. Step Two of the 10 Simple Things document encourages the optimization of the building envelope. There are many inexpensive ways to do this while reducing the amount of energy needed (and thus, energy expenses) to keep a building comfortable. 10 Simple Things documents such strategies as building orientation and passive solar opportunities to accomplish cost reductions.

Step five, which recommends the use of water efficient plumbing fixtures, also implies indirect cost savings, at least in the long term. While the up front cost of low-flow water fixtures may be more expensive than more traditional fixtures, paying for less water over time would reduce the costs for building operation.

Step six suggests considering materials with a long life cycle from local sources. Both of these suggestions would also reduce costs. Durable low maintenance materials will not need to be replaced as often, and local materials can be brought to the job-site at lower costs than imported materials.

In addition to some of the steps in the 10 Simple Things document, the Sustainable Design Checklist also includes items that affect affordability as well as sustainability. Many of the checklist items repeat concepts discussed above within the 10 Simple Things analysis, and only new ways that the Guide addresses affordability will be discussed.

Within the pre-design phase of the checklist, the owner, architect, and city planner are asked to develop infill locations. This can affect affordability in myriad ways. Infill properties exist near development, infrastructure, and amenities, which can reduce development costs (infrastructure and site development) on the other hand urban locations often have high land values, which can increase land costs. In addition, the higher densities often allowed in developed areas with infill sites might provide more affordable unit costs than new land developments.

Also mentioned in the pre-design phase is planning for public transportation options. This increases the affordability of any project indirectly, allowing residents alternative transportation. References to pedestrian and bike friendly site design are also suggested.

The design and documentation section of the checklist also reveal new ways that sustainability and affordability are related. The checklist suggests the development of compact massing, in order to minimize site disruption. However, compact massing can also lead to a more efficient, simple structure. Reducing the building surface area and complexity can also reduce materials, increase energy-efficiency, and improve affordability.

With respect to energy, the design and documentation section warns against over-sizing heating and cooling equipment. Over-sized equipment not only works less efficiently, but also is likely to cost more. With respect to materials, the checklist asks users to dimension materials carefully, so that waste, and thus cost, is minimized.

***What are the opportunities?***

The St. Paul Sustainable Decision Guide could be modified to address housing.

The greatest opportunities of the Sustainable Decision Guide is its application to all sectors of development within the city. The SD Guide could be adapted to address the Housing 5000 vision by providing sustainable and affordable guidelines for housing in St. Paul and throughout the region.

## 5.0 Policy Comparison

The preceding section discusses the various types of policies that address affordable housing, sustainable development, or both. Each policy was examined individually, with respect to its origin, its impact on affordability and sustainability, and its opportunities for further or stronger integration. It is also important to examine those policies with respect to one another and to consider the comprehensive impact they might have on sustainable affordable housing in the Twin Cities region. Table 1 summarizes key issues across public policies, while Table 2 compares and contrasts sustainable design guidelines.

**Table 1. Planning Policy Comparison Matrix**

	DEVELOPMENT SCOPE					POLICY MODE			AFFORDABILITY ISSUES						SUSTAINABILITY ISSUES					
	Regional	Suburban	Urban	Neighborhood	Lot/Parcel	Law	Code	Guideline	NIMBY	Preservation	New Construction	Fair Share	Incentives	Barriers	Site	Water	Energy	Materials and Natural Resources	Waste and Pollution	Transportation
<b>Blueprint 2030</b>	X						X		X	X		X			X		X			X
<b>Housing 5000</b>			X				X		X	X		X								X
<b>HUD/NEPA</b>					X	X				X									X	
<b>Livable Communities Act</b>		X					X	X			X	X							X	
<b>Land Use Planning Act</b>	X					X			X	X	X									
<b>St. Paul Comprehensive Plan</b>			X				X		X	X					X					
<b>Mayor's Task Force on Housing</b>	X						X	X	X	X				X		X	X	X	X	X
<b>St. Paul Zoning Code</b>				X			X							X	X					

**Table 2. Sustainable Design Policy Comparison Matrix**

	DEVELOPMENT SCOPE					POLICY MODE			AFFORDABILITY ISSUES						SUSTAINABILITY ISSUES					
	Regional	Suburban	Urban	Neighborhood	Lot/Parcel	Law	Code	Guideline	NIMBY	Preservation	New Construction	Fair Share	Incentives	Incentives	Site	Water	Energy	Materials & Resources	Waste and Pollution	Transportation
<b>Minnesota Sustainable Design Guide</b>					X			X		X	X				X	X	X	X	X	X
<b>Building Benchmarks and Beyond Guide</b>					X			X		X	X				X	X	X	X	X	X
<b>St. Paul's Sustainable Decision Guide</b>					X			X			X				X	X	X	X	X	X

**5.1 Explanation of Matrix**

Four issues are considered in the comparison of policies and guidelines: 1) Development Scope; 2) Policy Mode; 3) Sustainability Issues, and 4) Affordability Issues. The following discussion explains related issues and findings.

***Development Scope***

Development Scope refers to the destination of the policy in terms of enforcement and intention. It identifies the implementation scale and geographic location for the policy (e.g. regional, suburban, urban, neighborhood, and lot/parcel). Table 1, which focuses on public policies, illustrates that policies are targeted across scale (ranging from the region to the lot/parcel). It is important to note that the St. Paul Zoning Code is listed as a neighborhood policy, yet the code impacts across scales from the region to the lot/parcel. In Table 2, which focuses on the sustainable design guidelines, the scale of impact is limited to the lot/parcel. The comparison indicates that the policies are currently addressing a broader range of scales and geographic locations. In general, the policies would benefit by the addition of more detailed information and guidelines related to site and building issues while the sustainability guidelines could expand into larger issues of city and regional planning. An integration of the best of the policies and the guidelines would lead to a more comprehensive approach to sustainability and affordability across scales and geographic locations.

### ***Policy Mode***

Policy Mode includes the enforcement characteristic of the policy or guideline, including law, code, or guideline. Law is defined as a state or federally passed bill; code is defined as a collection of laws or regulations; and guidelines are defined as voluntary procedures that are suggested by the policy or guideline in question. Policy Mode specifically addresses the enforcement and intention of the policy, regardless of origin or destination. This is an important characteristic for comparison, as it addresses the potential impact and leverage of each policy. One important caveat of this section is the Livable Communities Act (LCA). LCA is a bill that was passed into law by the state legislature in 1995. State law mandates the program and its implementation. However, participation in the program is strictly voluntary, and participants are able to negotiate the goals of the program. Therefore, in terms of enforcement, it is listed within the matrix as a guideline. Table 1, which compares policies, illustrates that of the eight policies, only two are laws (HUD/NEPA and LUPA). There is one code (St. Paul Zoning Code) and five guidelines (Blueprint 2030, Housing 5000, LCA, St. Paul Comprehensive Plan, and Mayor's Task Force). Few of the policies have regulatory authority to ensure the integration of affordable and sustainable development.

### ***Affordability Issues***

Six issues related to affordability are compared and contrasted: 1) NIMBY; 2) Preservation, 3) New Construction, 4) Fair Share, 5) Incentives, and 6) Barriers. NIMBY is an acronym for Not-In-My-Back-Yard, and it reflects the desire for market-rate neighborhoods to resist affordable housing development nearby, due to the perceived negative impact on property values. NIMBY-ism is widely considered to be a significant barrier to the construction of affordable housing. Preservation is addressed here in response to the transition of affordable units to market-rate, or nonaffordable, units. This can occur when a landlord ceases to accept Section 8 vouchers from public assistance recipients, or when market trends increase the average cost of housing while household incomes stay the same or increase more slowly. Finally, affordable housing can be in need of preservation when time and the elements degrade housing conditions. Affordable housing is less likely to receive physical improvements, and some affordable units are lost due to condemnation or destruction. Perhaps the most obvious source of affordable housing, the creation of new affordable units is also one of the most difficult sources of affordable housing stock. Many of the policies listed address the creation of affordable housing in terms of barriers, assistance, and recommendations. Fair share responds to the spatial make up of affordable housing. The concentration of poverty, especially in inner-city neighborhoods, can result in many negative conditions that support misconceptions about affordable housing. Fair share housing responds to this, finding ways to spread out affordable housing throughout the metropolitan region. As the matrix reveals, this is the purpose behind the Livable Communities Act of 1995. An incentive for the construction of affordable housing is an important strategy to encourage communities to accept affordable housing. It is widely recognized that the development of new affordable housing is financially impossible without subsidy.<sup>24</sup> Many policies address this by providing or suggesting methods of financial subsidy for the creation of new affordable

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<sup>24</sup> *Affordable Housing: Making it a Reality*, Mayors' Task Force on Housing, 2002 p. 6

housing. Finally, understanding barriers to affordable housing is important in order to find solutions to the affordable housing crisis. Many policies investigate and analyze barriers to affordable housing with the purpose of finding solutions to those barriers in mind.

Table 1 illustrates that different policies tend to emphasize a cross-section of affordability issues, usually focusing on one to three primary concerns. For example, the LPA emphasizes preservation, new construction, and fair share housing, while the LCA emphasizes NIMBY, fair share housing, and incentives. In general, affordability tends to be a concern at several levels and within most of the policies. In contrast, the sustainable design guides, compared in Table 2 have a narrower scope in terms of affordability. The sustainable guides tend to emphasize preservation and new construction, with little or no attention paid to other affordability factors such as NIMBY, fair share, incentives and barriers. Both policies and guidelines would benefit by broadening their scopes, where appropriate to further consider affordability issues.

### ***Sustainability Issues***

The sustainability topics include: 1) Site, 2) Water, 3) Energy, 4) Materials and Natural Resources, 5) Waste and Pollution, and 6) Transportation. Site sustainability issues can include land use and development, protection of habitat, erosion, native plantings, and site maintenance. Water could include wetland preservation, stormwater, and water efficient design strategies and technologies. Energy includes strategies to minimize consumption of energy as well as energy efficient design strategies and technologies. Materials and natural resources include resource efficiency, nontoxic and healthy design, waste reduction, durability and maintenance, and adaptability and flexibility. Waste could include strategies to reduce, reuse, and recycle materials for design, construction, and operations. Finally, transportation concerns the building location and proximity to amenities and public transportation.

Table 1, illustrates a much more narrow focus on sustainability in the policies. With the exception of the Mayor's Task Force, which has a comprehensive approach to sustainability at the scale of urban and regional planning, few of the policies address more than one or two sustainability issues. In general, the policies emphasize issues related to waste reduction, transportation, and natural resources. In contrast, the sustainability guidelines all included a comprehensive approach to sustainability at the scales of the site and building. The policies could greatly expand the scope and depth of issues related to sustainable development and design, while the sustainable guidelines could address large scales of consideration such as neighborhood, city, and regional planning.

## **5.2 Evaluation of Matrix**

The comparison illustrates the following opportunities for integrating affordability and sustainability.

- ***Few housing policies address sustainability and few sustainability guides address affordable housing.***  
A comparison of policies reveals little or no integration between the concepts of sustainability and affordability in housing.
- ***Few policies offer strong accountability or enforcement methods.***  
Even the regulatory policies examined (as opposed to guidelines or findings) do not provide strong requirements and/or enforcement when building sustainable or affordable housing.
- ***Most housing policies only address individual or isolated aspects of sustainability.***  
Sustainability topics tend to be focused upon as isolated issues or topics (e.g. energy efficiency), rather than as a comprehensive and integrated approach to design that encompasses various issues and scales (e.g. water, energy, waste, materials, systems, etc.).

The relationship between sustainability and affordability already exists, and in many cases has been studied. However, the utilization of public policies to improve and apply sustainable design to affordable housing has not been fully explored. Consequently, affordable housing continues to be difficult to achieve without public subsidies and sustainable design tends to be underutilized in affordable housing.

## 6.0 Recommendations

Specific policies and guidelines analyzed in Sections 3.0, 4.0, and 5.0 included reference to opportunities that would strengthen sustainability and affordability ties in public policy. However, the process of that analysis and the comparison of each policy in Section 5.0 reveal broader policy implications. Listed below are general recommendations for expanding and/or revising existing policies to further integrate sustainable design and affordable housing.

### ***1. Affordable housing advocates and sustainable development advocates would gain insight and strength if they worked together.***

It is clear after analyzing affordable housing policies, general planning policies, and sustainable design guidelines, that the two goals of providing both affordable and sustainable housing are segregated concepts. Whether the policies reflect the divide in the advocacy world or vice versa, it is important that stakeholders in both areas realize the impact each concept has on the other. At least three changes need to occur in order to expand the political, non-profit, and governmental arenas of interaction with respect to eco-affordable housing: information sharing, consensus building, and creating financial incentives.

#### Information Sharing

The first and most powerful step that organizations can take to expand their knowledge and resources regarding eco-affordable housing is to share information. For example, non-profit affordable housing developers and housing agencies could form partnerships with sustainable design firms, the American Institute of Architecture's Committee on the Environment (COTE) and/or organization such as the Center for Sustainable Building Research at the University of Minnesota's Department of Architecture and Landscape Architecture. Such partnerships could lead to the creation of sustainability requirements for housing projects. Priority should be given to design information and strategies that reduce the amount of subsidy required to build housing at an affordable level.

Information sharing should not be limited to already specialized organizations. The public, and therefore public officials should be targeted to increase awareness about the importance of sustainable housing and the possibilities for sustainable construction to lower the cost of housing. Affordable housing impacts the general public as well as housing agencies, since most affordable housing is subsidized with public funds.

The benefits of information sharing are significant. Information sharing between architects, developers, financiers, manufacturers, construction workers, and advocates would allow the sustainability strategies that were most likely to lower the cost of building or maintaining housing to be drawn out and further explored. With a realistic, specific, and clear set of guidelines that categorized sustainability practices by their impact on affordability and addressed housing explicitly, stakeholders would have an incentive to create eco-affordable housing.

Some possible approaches to information sharing might be as follows:

- Find support to place sustainability on the agendas of local affordability initiatives.  
*Example: create sustainability language in the next Housing Minnesota Homes for All! Convention, to be voted upon by local delegates for lobbying purposes.*
- Link sustainability information to affordability websites, pamphlets, and literature.  
*Example: HUD's local website could have a link to the Minnesota Sustainable Design Guide and the Building Benchmarks and Beyond (B3) Guide where appropriate.*
- Existing or new forums, conventions, or conferences that link sustainability techniques and affordability strategies could be created.  
*Example: Partnership for Advancing Technology in Housing (PATH), HUD, or the American Institute of Architects could sponsor a national conference on the topic of eco-affordable housing.*

### Consensus Building

Successful information sharing will lead to consensus building. Various stakeholders will then have the power to work together to accomplish eco-affordable housing goals in terms of policy, guidelines, and advocacy. Ideally, new organizations would emerge that specifically address eco-affordability, and put pressure on local government to link the two concepts.

An organization that links sustainable design to affordable housing would need support, funding, and political power to achieve its goals. Consensus building is necessary to streamline those goals and enable eco-affordable housing advocates to have a strong presence in the political arena. Outreach to both sustainability advocates and affordability advocates has the potential to create a sizeable network of support, and organizations should work to increase their visibility.

### Financial Incentives

When funding is available, it is important that non-governmental organizations (NGOs) and government entities use incentives to make the best use of a diminishing budget. Financial incentives should be linked to sustainability in all affordability projects, especially when the techniques further reduce the cost of building housing. Below are some examples of how financial incentives can be used to encourage eco-affordable housing:

- The Minnesota Housing Finance Agency could weigh its loans to be for larger amounts or lower interest rates when the property in question fulfills certain sustainability requirements.
- PATH or HUD could send out a Request for Proposal (RFP) for prototypes of sustainable housing that were less expensive to build than traditional home building. The award would encourage talented designers and builders to discover new ways to use sustainable techniques to lower the cost of housing.
- St. Paul's Department of Planning and Economic Development could attach more funding to sustainable housing projects than traditional projects.
- Newly created NGOs could offer free training for construction and design personnel to encourage builders to try new techniques.

- 2. While State and regional government should provide the guidelines, requirements, and legislation for eco-affordable development practices, local government should incorporate such principles into its development approval process.***

It is important to understand which levels of government would be most affective in linking sustainability and affordable housing. For the sake of consistency, expertise, and streamlining, it is most appropriate for state and regional governments to regulate sustainability and affordability guidelines, requirements, and legislation. This relieves the burden on individual cities to fund and provide the research needed to establish such policies.

However, it is equally important that local governments carry out such policies, and support them on the appropriate level. For example, zoning regulations, comprehensive plans, and other development guidelines should respond to regional policies in a way that maximizes their affect. Furthermore, local governments can always use regional sustainability requirements as a benchmark, requiring local development to surpass minimum standards in sustainability and affordability. Or, similarly, sustainability can be an added requirement at a smaller scale than regional policies (e.g. at the site and building scales - see item below).

- 3. Policies and guidelines that address affordability or sustainability should do so at the site and building scale when possible and appropriate.***

Site and building scales were often ignored in many of the policies. Emphasis was placed at the scales of urban and/or regional planning. While regulations or guidelines addressed broader ecological issues, such as water management, preservation of open space, or a decrease in traffic congestion, decisions that affect sustainability on a smaller scale are often left to the builder, designer, or owner. There is a great opportunity to integrate sustainability and affordable housing in policies at the building and site scales.

For example, Blueprint 2030 offers multiple guidelines that will increase density (which can have positive ecological implications), but specific strategies and details at different design and planning scales are not developed. Design, assessment, and implementation tools are needed to understand and further the integration of sustainability and affordability. Regulatory guidelines can significantly impact professionals to make decisions based on ecological and affordable priorities.

If Blueprint were to list one of the region's goals for the year 2030 as increasing the percentage of housing stock that was designed, built, or remodeled in a sustainable manner, local governments, contractors, and NGOs would take notice. Development proposals would need to address sustainability to seek regulatory approval for their projects, just as they currently do for zoning, structural support, and comprehensive plan compliance. Smart Growth initiatives, as another example, refer to the importance of the environment in development. Although larger issues of open space, farmland, scenic beauty, and critical environment areas are considered, little

information is provided to impact or guide real development and construction practices.

Why is sustainable housing not important enough to warrant significant attention and meaningful discussion in such visionary documents? Despite a universal desire to sustain the environment, there is not agreement in the strategies and techniques that can do so. One of the ways to leverage sustainable building and development is to attach it to a financial bottom line. If certain sustainable design and development techniques can be done for less cost than traditional methods, or with greater ease, this will allow builders and developers to benefit the environment while still making a profit. Information on priorities, strategies, and real costs are needed to move sustainability forward in housing.

It is imperative that government policies have the jurisdiction to create policies or guidelines that encompass the building and site scale in order to truly create a building environment that can sustain eco-affordable housing. Once the affordable impact of some sustainability techniques is determined, the market will support sustainable housing construction, but real economic and sustainability information is needed.

**4. *Local land development policies, such as the comprehensive plan and/or zoning code should streamline development practices that integrate affordable housing with sustainable design.***

So many of the policies analyzed in this report comment on the complexity and irregularity of development practices and regulations. Often times this complexity is accompanied by cost increases, whether at the permit, impact fee, or building cost scale. Local governments should do all they can to streamline such development processes, and provide incentives for eco-affordable development by waiving fees and simplifying requirements for such developments.

One of the largest barriers to streamlined development practices is the lack of approval and knowledge of sustainable construction methods. While many sustainable design strategies integrate simple strategies and off-the-shelf technologies, some sustainable projects may be more difficult to develop if they use unusual technologies or building materials. In the later case, additional time and money may be necessary for research and code approvals. Building officials need to be involved in the development of eco-affordable housing standards to ensure public safety and code approval.

For example, state government could provide supporting technological, performance, and affordability information and advice on sustainability for designers, contractors, and developers to allow them to determine requirements, fees, and site information easily and quickly. Such a system, applied to eco-affordability, could greatly encourage sustainable development.

**5. *Policies and guidelines that address sustainability should also convey the relationship it has with affordability.***

Too many of the policies examined offered little or no connection to the impact sustainability has on affordability. Neither previous nor existing sustainability guidelines offer helpful information on the cost impact of their recommendations, an omission that greatly reduces the impact they might have on affordability.

Furthermore, sustainable design techniques should be organized to help stakeholders prioritize and organize issues such as: regulations, design, strategies, implementation, assessment, performance, economics, etc. The cost analysis of sustainability techniques is imperative to encourage for-profit developers and designers to utilize strategies.

Even policies that do not offer specific standards and strategies in terms of sustainable design or construction could do more to integrate the topics of sustainable housing and affordable housing. This would promote the goal of integrating the topics among stakeholders, increasing awareness and advocacy options as are described in Recommendation #1.

**6. *Sustainability guidelines are cumbersome, which can discourage their use.***

Given the complexity of the topic, sustainable design guidelines are often difficult to use and understand for housing agencies, policy makers, and people who are not designers. As sustainability guidelines increase in use, it is vital that they can be easily navigated and implemented for a broad audience of users. While the techniques and recommendations offered in sustainable design guidelines may be valuable, they are rarely applied to design if they are difficult to navigate, require extensive time or resources, and are too complex. In addition, past and present sustainability guidelines do not offer enough detail about their affect on project budgets and affordability. Decision-making tools and cost comparison tools are badly needed to integrate sustainable design and affordable housing.

For example, the Building Benchmark and Beyond (B3) Guide (also known as the MSBG) is a large document. It organizes sustainable practices according to the project stage and the environmental themes. The document reads as two separate concepts that are difficult to integrate. When the environmental guidelines begin, they are succinctly organized based on intent and performance criteria. However, there is nothing to guide a reader to how to accomplish the goal, at what cost, or how exactly to evaluate it. Timelines and resources for each specific goal are not available to guide developers or designers. If these or other guidelines are to be useful for affordable housing, they need to be easily accessible and understandable by housing agencies, developers, and contractors.

## **7.0 Concluding Thoughts**

While significant attention has been given to larger sustainability issues for regional and urban planning (evidenced in the policies for Smart Growth, Comprehensive Plans, Mayor’s Task Force, etc.), little if any regional attention has been given to the impact of sustainable design at the scale of affordable housing. Energy efficiency is perhaps the only sustainability issue that is commonly considered in affordable housing. Yet, sustainable design goes far beyond energy efficiency to also consider issues of health and well being, daylighting, passive solar strategies and natural ventilation, water conservation, nontoxic and renewable materials and natural resources, site and landscape design, and waste (among other considerations). These sustainability issues impact affordable housing design from the scales of building components to the design of the room, house, site, neighborhood, and city. In addition, sustainable design concerns how we live in community. It concerns how will we care for ourselves and the world in which we live. Public policy in Minnesota can and should positively inform and support the development of a more sustainable future through policies that leverage and support sustainability at all scales of design.

## **Bibliography**

### **“Top Ten” Bibliography and Resources**

#### ***Local Affordable Housing - General***

Affordable Housing

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<http://www.sustainable.doe.gov/buildings/affhousing.shtml>

Affordable Housing Through Efficiency

<http://hem.dis.anl.gov/eehem/93/930120.html>

Affordable Sustainability Technical Assistance for HOME

<http://www.homeasta.org/>

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An Exploratory Case Study

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<http://www.hud.gov/offices/cpd/affordablehousing/programs/shop/index.cfm>

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Single Family Housing Programs

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Natural Resources Defense Council  
<http://www.nrdc.org/cities/building>

***Local Financial Sources for Affordable Housing***

Minnesota Housing Partnership  
<http://www.mhponline.org/>

MHFA Website  
<http://www.mhfa.state.mn.us/>

***Energy Issues***

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Environment – Laws

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Oregon

Environmentally Responsible House Requires Thoughtful Choices

<http://www.oikos.com/esb/40/ecohouse.html>

### ***Seminars, Conferences, and Courses***

A course in Sustainable Development

<http://www.hud.gov/local/chi/chienv24.html>

Sustainability Series

<http://www.hud.gov/local/chi/sustain.html>

The National Green Building Conference

<http://www.nahbr.org/conferenceseminarsgreen.asp?CategoryID=1676>