



AFFORDABLE HOUSING'S GREEN FUTURE

**Building a Movement for Durable, Healthier and More Efficient Housing:
Lessons from Minnesota and Beyond**

by Tony Proscio



 **Enterprise**TM

On the cover, Minnesota Green Communities projects, from top left: Minnehaha Avenue Apartments, Collaborative Design Group; Sawtooth Cottages, Wagner Zaun Architecture; Van Cleve Court Apartments East, UrbanWorks Architecture; and Sawtooth Cottages.

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About Green Communities

Green Communities is the first national green building program focused entirely on affordable housing. Launched by Enterprise in fall 2004, Green Communities is designed to help developers, investors, builders and policymakers make the transition to a greener future for affordable housing. A comprehensive offering of Green Grants, loans, tax-credit equity, training and technical assistance gives developers and builders the resources to bring green projects to life. www.greencommunitiesonline.org



About Enterprise

Enterprise is a leading provider of the development capital and expertise it takes to create decent, affordable homes and rebuild communities. For 25 years, Enterprise has pioneered neighborhood solutions through public-private partnerships with financial institutions, governments, community organizations and others that share our vision. Enterprise has raised and invested more than \$7 billion in equity, grants and loans and is currently investing in communities at a rate of \$1 billion a year. www.enterprisecommunity.org or www.enterprisecommunity.com

Foreword

Bart Harvey
Chairman of the Board, Enterprise

Affordable Housing's Green Future by Tony Proscio describes the remarkable efforts of funders, policymakers, researchers and community-based developers in Minnesota to make all affordable housing in the state environmentally sustainable. Minnesota Green Communities has made substantial progress in just two years, putting the initiative's ambitious goal to make all the affordable housing in the state green within cautious reach in the near future.

Minnesota Green Communities is a partner in the national Green Communities initiative to which Enterprise has committed \$555 million to create 8,500 highly sustainable homes for low-income people. Green Communities seeks to make green building and smart development the mainstream among affordable housing developers. After just two years, Green Communities has helped develop 150 sustainable developments, with more than 7,000 homes in 23 states under way or completed. More than 2,700 affordable housing professionals have received training in green planning, design, development and operations. More than 20 state and local housing agencies have adopted policies favorable to sustainable affordable development.

Minnesota's early green affordable housing efforts preceded Green Communities, with local leadership among funders, policymakers and pioneering community developers having set the stage for a bold next step. With resources and expertise, Enterprise's Green Communities helped coalesce the broad and dedicated coalition, while catalyzing a system to accelerate a total transformation of Minnesota's housing system. Minnesota Green Communities' success reflects: strong state and local leadership, an inclusive process that joins a diverse coalition of stakeholders, and a clear, collective vision for sustainable development based on the Green Communities framework – ingredients that can be and are applicable elsewhere.

In fact, Enterprise sees a national model in Minnesota's Green Communities that could help more states to embrace the health, economic and environmental benefits of sustainable development – and take them to scale for the developers and residents of affordable housing. This paper describes the Minnesota effort in detail and distills key lessons in an effort to generate similar systems change in other states.

More work lies ahead, of course, to achieve the ultimate goal of transformation. Enterprise is committed to this journey in Minnesota and around the country – and we congratulate the many partners leading our industry's new sustainable direction.

Introduction

Since late 2004, Enterprise has spearheaded a national effort called Green Communities, demonstrating the benefits of sustainable development of affordable housing. With 150 projects under way by the end of its second full year of operation (a total of more than 7,000 units) Green Communities seems to have tapped a widespread demand among affordable housing developers for financial and technical support in green planning, design and construction. Green Communities projects have sprung up in cities, suburbs and rural areas in 23 states to date. Yet despite wide variety in the kinds of housing and communities involved, every project follows basic guidelines that ensure the conservation of energy and natural resources, healthy surroundings for residents, and a sustainable relationship with the natural environment.

In Minnesota, Green Communities has become the basis for an ambitious effort to make all the affordable housing in the state sustainable. In just a few years, the idea of green development has become increasingly woven into the investment decisions of nearly all the state's major housing funders. Given the leadership behind Minnesota's effort, and the care with which it is being pursued, it may be the precursor to more widespread change in the way affordable housing is conceived and funded nationwide.

Minnesota's swift head start in galvanizing a green housing revolution is partly the result of its unusual leadership structure in affordable housing finance and policy. Two large nonprofit housing funds in Minnesota — one for the Twin Cities of Minneapolis and St. Paul, the other for the balance of the state — channel money, talent and expertise into the affordable housing market on a scale that is rare (and in many ways unmatched) anywhere in the country. The first of these organizations, the Family Housing Fund, started operation in the Twin Cities in 1980. It began as an initiative of the Minneapolis-based McKnight Foundation and the two city governments, an extraordinary public-private effort to place housing securely at the top of the region's priorities and to marshal the necessary resources to expand both the quality and volume of affordable housing production. Over time, the Fund's mission expanded to include the Twin Cities' seven-county metropolitan area, and its key allies came to include the regional planning agency, called the Metropolitan Council, and the state's Housing Finance Agency, commonly known as Minnesota Housing.

After more than a quarter-century of effort, the Family Housing Fund (the Fund) has directly invested \$161 million in affordable housing across the metropolitan area and has leveraged roughly \$2.4 million more from public and private resources. The result, as of 2006, has been the creation of more than 31,000 homes and apartments, both for sale and for rent, for low-income families region-wide.

The Greater Minnesota Housing Fund (GMHF), serving the state's remaining 80 counties, was likewise the result of a McKnight Foundation initiative, this time in partnership with the Blandin Foundation, a philanthropy dedicated to strengthening rural Minnesota. Established

in 1996 and capitalized at \$58.5 million, GMHF has helped create more than 4,000 units of affordable housing across the state and leveraged some \$400 million in public and private capital. Besides their financial services, both Funds also carry out homebuyer education programs; provide technical assistance to housing developers and public agencies; and apply research, program development and public education to improve the way affordable housing meets the needs of the state's broad mix of communities, families and natural environments.

By now, the two Housing Funds have become Minnesota's prime sources of leadership in affordable housing policy. Their influence, and their close working relationship with the state Housing Finance Agency, is evident in a number of housing initiatives in which Minnesota has been among the nation's leaders. These include the development of supportive housing for homeless and other special-needs populations; the promotion of employer-assisted housing; and the increased use of efficient, environmentally sound neighborhood planning. The Funds' ability to recognize new needs and opportunities and to respond with effective programs made them natural model-builders in the early stages of the Green Communities initiative.

Another essential factor in Minnesota's ability to innovate quickly and effectively has been the exceptional degree of coordination among the state's housing funders, both public and private. Instead of requiring affordable housing developers to chase various subsidy sources one-by-one, keeping track of different funding cycles and application procedures, and reconciling incompatible conditions on various sources of money, the funders have created a nearly one-stop application and decision-making process. Applications to the two Housing Funds and to Minnesota Housing, which allocates federal Low-Income Housing Tax Credit and HOME dollars, state deferred-payment financing and other resources, all come in through a single "Super-RFP" or Request for Proposals. They are then evaluated around a single table. In the Twin Cities metro area, city and county funders and the Metropolitan Council also participate in the roundtable funding process to a considerable degree, with applications and criteria that are similar to, if not exactly the same as, those used by the Funds and state underwriters.

Finally, Enterprise has a long history of working in the state, having invested more than \$90 million to create more than 1,800 affordable and market-rate homes. A number of developments are in rural and Native American areas or serve vulnerable populations. Prior to Green Communities, Enterprise had worked extensively throughout the state with community-based partners, including those that had begun to incorporate some green practices into their activities already, such as the Southwest Minnesota Housing Partnership.

Given this array of assets — the leadership and financial resources of the Housing Funds, the coordination among sources of capital and a solid history of policy innovation — it is not surprising that Minnesota was among the first to respond to Enterprise's announcement in 2004 about the national Green Communities initiative. The Greater Minnesota Housing Fund

and the Family Housing Fund began by jointly creating a statewide program, called Minnesota Green Communities, in partnership with Enterprise. The three partners started the program with a total commitment of \$300,000 divided equally among them. Their working plan was to fund four demonstration projects in the first round, each with roughly 25 units, and award \$3,000 per affordable unit.

Both to guide the program and to spread the word among industry leaders statewide, the partners organized a high-level advisory committee. Its members included: nonprofit experts in green development and energy conservation, environmental groups, academic and policy experts, utility companies, urban planning and community development organizations, and private and corporate philanthropy. State government was represented both by the Pollution Control Agency and the Housing Finance Agency. (A complete list of the advisory committee members, along with other information about Minnesota Green Communities and its projects, is at www.greencommunitiesonline.org/minnesota.)

The two Housing Funds then hired a part-time Green Communities coordinator, Janne Flisrand, to help shepherd the program from planning and policy through production and, over time, eventually to building a full-fledged system of green affordable housing. The first round of project selection and funding took place in April 2005. Another round followed a year later, this time in conjunction with the 2006 Super RFP to better align with additional state and local funding streams.

From its earliest steps, the prominence and breadth of Minnesota Green Communities' work placed it in the vanguard of similar efforts now taking shape in other states. This report therefore examines the growth of the national Green Communities initiative primarily by focusing on the Minnesota program, and in particular by describing the development of one of its first investments, the renovation of an apartment complex in rural Worthington, Minn. But that experience should be seen in light of a widening national movement Enterprise is leading, including comparable broad-based programs now under way in at least four other states and the city of San Francisco.

With only minor adjustments, the Minnesota approach could be replicated in almost any other state and in many localities — a prospect that seems increasingly likely as the national Green Communities demonstration enters its third year, far ahead of schedule in both production and aggregate investment.

Flashback: A 30-Year-Old Warning

In 1979, just as the last few residents were moving in to 60 new subsidized apartments at Viking Terrace in rural Worthington, Minn., the world price of crude oil was inching past \$40 a barrel in today's dollars — more than double what had been, until then, the median real price since World War II. It was the year of the Iranian revolution, when supply disruptions and panic buying drove oil prices to then-unprecedented heights and ignited the decade's second fuel crisis. The spike in energy prices lasted roughly two years, before increased production and receding panic gradually returned the oil market closer to historic averages, settling around \$25 a barrel in constant dollars.¹

Though brief, the 1979 crisis was a foretaste of problems to come. Yet in the underlying economics of Viking Terrace, developed under the 1970s-era Section 236 housing subsidy program, the price spike made little fundamental difference. “Affordability,” in late-20th century housing policy, was a calculation almost entirely concerned with keeping capital costs low and supplementing rents. Energy and other operating costs, whether borne by landlords or residents, figured in only indirectly. The great housing programs of the era were either, like Section 236, aimed at reducing landlords' interest payments or, like the more famous Section 8 program, direct subsidies for rent. Virtually all of them put a premium on inexpensive, no-frills construction, even if that led to problems with durability down the road. Viking Terrace met its regulatory obligations as “affordable” housing — and indeed provided decent, low-cost housing for a generation of poor families — primarily because its capital costs and regulated rents remained low. In time, those very economies would put the building in serious economic and structural trouble.

Of course, as some scholars and policy experts pointed out at the time, if the energy crisis of 1979 had lasted or worsened, the affordability of developments like Viking Terrace would have run into trouble much sooner. A prolonged spike in energy prices could have jeopardized hundreds of thousands of government-supported housing units across the country. But because the underlying causes of the 1979-1981 oil crunch were short-lived, the threat to affordable housing remained largely theoretical. At least for a few decades.

During those ensuing decades, more modern affordable housing programs came along, particularly the federal Low-Income Housing Tax Credit enacted in 1987. These eventually eclipsed earlier approaches like Section 236, yet they still took relatively little note of energy costs as a factor in gauging affordability. Like their predecessors, their focus was on mobilizing low-cost capital and holding down construction costs and rents. And so long as energy prices remained comparatively stable and low, that was enough.

Flash forward to 2005, just a few years away from Viking Terrace's 30th birthday. At that point, even the project's elementary, 1970s standard of affordability was about to be called into question. After years of deferred maintenance, leaks and equipment failures were becoming more common. Rising operating costs and continued low rents had wiped out the buildings' cash reserves. The owners were eager to sell the property, and unless it was purchased by a

¹ Oil price data are from James L. Williams, “Oil Price History and Analysis,” *WTRG Economics*, at www.wtrg.com/prices.htm.

nonprofit or government agency committed to affordable housing, its rents would almost certainly rise to market rates. (Though threadbare and markedly inefficient, the apartments could likely have fetched close to \$100 a month more than the current rents.)

Affordable housing is scarce nationwide, but it is particularly precious in rural communities like Worthington, where wages are low, rental apartments are few and private housing is beyond the reach of many families. For Worthington's sizable population of immigrant and low-income workers, who fill many of the town's entry-level industrial jobs, housing costs are all the more critical.

Desperate to save an endangered housing resource, the city of Worthington called on the Southwest Minnesota Housing Partnership, a regional nonprofit developer serving more than 25 rural counties. The nonprofit and the city applied for federal Low-Income Housing Tax Credits through the Minnesota Housing Finance Agency (known, for short, as Minnesota Housing) and assembled a complex mix of other public and philanthropic funding to buy, preserve and renovate Viking Terrace.

In the process, they also became one of the first recipients of grants from what was then the state's newest resource for affordable housing development: Minnesota Green Communities. The new program had set out in 2005 to invest in a few demonstration projects to show that green standards are not only compatible with low cost, but actually a better value for both residents and communities. Together with three other cutting-edge developments around the state, Viking Terrace fit the bill.

With support from Minnesota Green Communities, and the improvements such support would make possible, Viking Terrace would, for the first time, become "affordable" not only in its basic construction costs and regulated rents, but in its economical use of energy and water, its reduced need for repairs and replacements, and its ability to stand up economically to the harsh demands of rural Minnesota's variable climate. How that new approach to affordability became possible, and what it could mean for affordable housing across Minnesota and elsewhere, is the subject of the next several sections of this report. For starters, however, it is worth noting that the new approach to affordability at Viking Terrace was more than timely. By the time the Housing Partnership took title to the apartments and started renovating them, world oil prices were approaching \$70 a barrel.



The Southwest Housing Partnership and the city of Minnesota joined to apply for Low-Income Housing Tax Credits and to assemble a mix of public and philanthropic funds to preserve and renovate Viking Terrace as a healthy, energy-efficient green development.

‘Affordability’ Enters the Green Millennium

The story of how Viking Terrace tackled its new, more demanding affordability challenge — including the soaring cost of oil, natural gas and electricity — begins with the emergence of a fundamentally new approach to affordable housing and community development tracing back at least to the 1990s. In those years, a consensus was beginning to form among policymakers in housing, human services and public health that too many affordable housing developments were not contributing to the health of their residents. In fact, housing too often contributed to ill health — exposing residents to poisoning from lead-based paint and dust, or to respiratory risks from allergens, mold and moisture. Crowding accelerated the spread of disease; worn carpeting and porous building materials attracted pests and germs, and the lack of nearby recreation and medical care lowered residents’ odds of staying healthy.

On a separate track, at about the same time, concern grew about energy efficiency as a factor in housing costs and value. The success of the federal Energy Star program — a rating system introduced in 1992 by the Environmental Protection Agency, initially to certify energy-efficient electronic equipment — was increasingly transforming the way consumers chose all kinds of appliances and equipment. By the mid-1990s, Energy Star labels routinely designated high-efficiency home appliances, heating and cooling systems, office equipment, lighting, computer hardware and more. Applying the merger of efficiency and environmental responsibility more broadly, EPA extended its Energy Star system to building standards in 1995, and later began experimenting with a new set of ratings specifically related to healthy indoor air. The U.S. Green Building Council, a coalition of building-industry leaders, was meanwhile developing a set of standards and a rating system for high-performance, sustainable construction. The council’s various levels of certification soon became well known throughout the construction industry as LEED, short for Leadership in Energy and Environmental Design.

Commercial builders in particular were coming to regard energy efficiency and environment-friendliness as more than a luxury add-on, even before the spike in energy prices that began in the mid-2000s. Green construction of new or converted office buildings were beginning to enter the mainstream of commercial building practices by the end of the ’90s. Several years later, the *Washington Post* traced this trend by noting that “commercial buildings devour more than a third of the nation’s electricity... While industrial use of electricity has flattened over the past decade, consumption by commercial buildings has risen about 4 percent a year, according to the Energy Information Administration. Energy-efficiency experts say that better construction techniques, new energy-saving devices and smarter management can reduce electricity consumption by 20 percent in older commercial buildings and up to 50 percent in new ones, vastly reducing air pollution and utility bills.”

In yet another series of discussions toward the end of the 20th century, city and regional planners increasingly found themselves reckoning with the rising costs — both individual and societal — of metropolitan sprawl and its attendant pollution and waste. A more sustainable approach to development and land use was already urgently needed by the early 1990s, many argued, and would eventually become indispensable. For planners interested in affordable housing, the question of sprawl posed a particular set of countervailing challenges: Clustering such housing in too few places often led to isolation and concentrated poverty, yet dispersing it to remote areas (especially those not well served by public transportation) imposed other burdens on residents and developers alike. Finding the right balance — central locations with adequate density and good transportation but also mixed communities with a variety of housing and income levels — had become one of the central challenges of late-20th-century housing policy.

The development of homes, businesses and communities could be a much greater contributor to the health and well-being of both their occupants and the wider society than they are now, while also conserving increasingly scarce and costly resources. But for that to happen, established practice in a number of professional fields would have to change.

More and more, these several lines of thought were beginning to converge. Explicitly or not, they all had at least one central premise in common: The development of homes, businesses and communities could be a much greater contributor to the health and well-being of both their occupants and the wider society than they are now, while also conserving increasingly scarce and costly resources. But for that to happen, established practice in a number of professional fields would have to change. The fields included architecture and engineering, construction, finance, building regulation, land-use planning and public policy on community development and housing. Bringing about those changes would be slow and difficult work, yet pressure was beginning to mount in most, if not all, of the respective fields. Even so, the most practical efforts at reform still tended to be discrete and parallel — one branch of work in the construction industry, another in public health, and others in various branches of government and civic life.

At a national conference in 2004, sponsored by Enterprise and the National Center for Healthy Housing, participants from housing, public health, the environmental movement and community development all found themselves grappling with a single question, one that was becoming increasingly typical in such forums: Besides encouraging separate reforms in housing design and construction one-by-one — better site planning here, more efficient construction and appliances there, healthier materials and air quality somewhere else — shouldn't the goal be a consolidated standard for healthy and sustainable housing and communities, a standard that was both environmentally responsible and still affordable? In this conversation, and others like it percolating at around the same time, the vision of a green movement in affordable housing began to jell.

Defining ‘Green’

The vision of a green movement was starting to take shape at Enterprise well before the 2004 healthy housing conference. A year earlier, senior managers had begun discussing the idea informally with a circle of experts in sustainable housing design and construction, beginning with Enterprise Trustee Jonathan Rose, an award-winning developer of mixed-use green projects who is also a trustee of the Natural Resources Defense Council (NRDC). Another crucial early participant in these discussions was Gregory H. Kats, among the preeminent authorities on the costs and benefits of green development. As the discussions widened, incorporating experts in environmentally sound planning, community development and public health, one clear consensus was the need for a consolidated set of green affordable-housing guidelines. The idea was to formulate a single set of criteria that, as Enterprise’s Green Communities Senior Director Dana Bourland later put it, “an affordable housing developer could just pick up and put into practice, knowing that it would add only minimally to a project’s cost — and actually save money in the long term — but would address the full range of issues: efficiency, health, environmental responsibility and sustainability.” Soon the informal discussions took on more structure, and with Rose’s encouragement, Enterprise and NRDC formally joined forces in mid-2004 to move the project forward.

As a first step, they brought the various experts together as an interdisciplinary committee, under the newly minted designation of Green Communities, to hammer out a common set of criteria. Besides Enterprise and the NRDC, the group included consultants or staff members associated with the U.S. Green Building Council, the National Center for Healthy Housing, the Center for Maximum Potential Building Systems, the American Planning Association, the American Institute of Architects, Global Green USA and Southface — many of which had themselves already formulated at least some portion of a green development agenda.

The advisory committee therefore had plenty of precedents and models to draw from. By then, the most prominent of these was LEED, which rates buildings according to various sets of criteria tailored for different project types. Though they vary for new construction, existing buildings, commercial interiors and so on, the rating systems generally focus on five basic elements: sustainable sites; water efficiency; energy and atmosphere; materials and resources; and indoor environmental quality. The LEED new construction standard, although designed for office buildings and very large market-rate multifamily dwellings, provided a useful starting point.

A LEED rating system specifically designed for homes, called LEED-H, would also be developed soon after Green Communities was launched. It has since begun pilot testing. Another set of criteria for neighborhood development is also planned, though it is still in development as this report goes to press. As originally conceived, LEED-H would be likely to have the greatest effect on the upper tiers of the housing market — “the 25 percent of new homes that are the top performers in terms of resource efficiency and environmental stewardship,” according to the U.S. Green Building Council. Discussions are therefore under way to determine how LEED-H might be applied to affordable housing. The conclusions of the Green Communities advisory committee and the field-testing of its criteria now provide a valuable body of ideas and experience to help those discussions along.

Other green-construction guidelines were also in use in various places and provided a further basis for the committee’s work. Like LEED, most of these guidelines were meant primarily for market-rate homebuilders, but proved highly

relevant to affordable housing as well. Unlike LEED, they were targeted to specific cities or regions. The Office of Housing for the city of Seattle published a six-category set of green building criteria, called Sea-Green, specifically tailored to the affordable housing market, with particular attention to environmental and energy concerns in the Pacific Northwest. The Office of Sustainable Development in Portland, Ore., had likewise developed a local set of green affordable housing guidelines. Southface, a nonprofit environmental organization based in Atlanta, worked with the Atlanta Home Builders Association on a set of standards for healthy, efficient and sustainable home construction called EarthCraft House.

Drawing from these and other sources over six months of intense effort, from July to November 2004, the group drafted a consensus document setting forth detailed criteria for green affordable housing, organized under eight essential provisions:

An integrated design process, in which sustainable building strategies are considered from the earliest stages of project planning, with a LEED-accredited professional or experienced green-building design specialist participating at every stage.

Locations that conserve resources, take advantage of existing infrastructure and civic amenities, are close to transportation, and contribute to the fabric of healthy, livable communities.

Site improvements that minimize harm to the environment, enhance health, conserve natural resources, improve operational efficiencies, and promote public transportation, cycling and walking.

Water conservation, including water-efficient appliances and fixtures, low-water landscaping and irrigation, and making use of rainwater and graywater where appropriate.

Energy efficiency in every stage and aspect of development, including efficient construction methods, design and insulation of units for efficient heating and cooling, installation of Energy Star appliances, and use of efficient lighting inside and out.

Materials that are beneficial to the environment, including reuse and recycling on the construction site to reduce waste, and use of building products and techniques that contribute to more durable, healthy and resource-efficient buildings.

Creation of a healthy living environment that is easy to maintain and keep clean, relying on safe, biodegradable materials that make for a healthy dwelling, especially for sensitive groups such as children, seniors and residents with respiratory problems or compromised immune systems.

Sustainable operations and maintenance, including plans and policies that maximize efficiencies, and training for employees and residents in how to preserve the property's high quality.

The full criteria, whose details take up fewer than 50 pages, nonetheless outline a complete, integrated approach to green development that covers everything from how a property is sited and designed to how it is built to how the finished building contributes to the health of its residents, its surrounding community and the wider environment.² They apply to single and multi-family developments and can be used for either new construction or rehabilitation. Yet for all their breadth and integration, the criteria also satisfy the committee's strictest mandate: They are designed to add only minimally to the initial cost of development, and to pay back those initial costs with operational savings and reduced maintenance over time.

Less than a year earlier, Greg Kats had published research on 33 recent certified green buildings across the United States, showing that the average "green premium" — the additional cost of earning various levels of LEED certification — was slightly less than 2 percent, or \$3 to \$5 a square foot.³ For affordable housing, that would translate into an addition of \$2,000 to \$5,000 a unit. Even this additional cost, Kats' research suggested, could be reduced with conscientious design and planning, and might well decline further in the next few years, as expertise in green building techniques become more widespread. Kats wrote:

The majority of this [additional] cost is due to the increased architectural and engineering design time, modeling costs, and time necessary to integrate sustainable building practices into projects. Generally, the earlier green building features are incorporated into the design process, the lower the cost. The cost of green design has dropped in the last few years as the number of green buildings has risen.⁴

² Copies of the full criteria, checklist and technical manual can be ordered online at www.greencommunitiesonline.org/getstarted-request.asp.

³ Gregory H. Kats et al., "The Costs and Benefits of Green Buildings: A Report to California's Sustainable Building Task Force," October 2003, available at ww.cap-e.com.

⁴ Gregory H. Kats, "Green Building Costs and Financial Benefits," the Massachusetts Technology Collaborative, 2003, p. 2.

Making Green Communities a Reality

Even as the experts were forging a common definition of “green affordable housing,” several of the participating organizations were simultaneously asking what they could do, as frontline actors and funders in the housing, environment and public policy arenas, to embed this definition in the mainstream of American housing policy and practice. The answer became the Green Communities initiative: a five-year, \$555 million effort by Enterprise to build 8,500 healthy and environmentally sustainable homes for low-income families across the country. Enterprise, the Natural Resources Defense Council, and the program’s roughly 20 other founding partners envisioned an initiative small enough to allow for careful quality control but large enough to send a signal to the wider market.⁵

They reasoned that, by demonstrating the cost-effectiveness of the green standards in many places and on a significant scale, the new program could “raise the bar for affordable housing providers in sustainable development,” as an early statement about Green Communities put it. That demonstration would take some capital investment to offset the initial cost of green development as well as training and technical advice on how to put the new criteria into practice. It would call for a sophisticated effort to measure the true up-front costs, and the eventual savings and other benefits that the criteria entail. Eventually, it would also require an effective communication and advocacy effort to make practitioners and policymakers aware of what the program was demonstrating.

Yet in designing the new initiative, Enterprise and its Green Communities partners set out to do more than just seed a significant number of developments and document the results. The aim was more ambitious: to draw together and expand what was still, in 2004, a small, fragmented and poorly understood field of green housing development. It would probably be feasible (and indeed, it ultimately proved comparatively easy) to find a select number of developers, architects, engineers, builders and funding partners who were willing and able to get some green projects started. It would be necessary to help those early participants find one another and fill the gaps in their expertise, a task that would take considerable time, energy and dollars. But if the long-term goal was to embed green principles in the mainstream of affordable housing practice nationwide, it would not be enough simply to encourage a few enthusiastic pioneers. It would also be necessary to develop — or at least envision — a wholesale change in the complex systems of finance, regulation and professional practice that drive the nation’s affordable housing industry and determine its methods and products.

Those systems have several branches at the federal, state and local level. But in recent years the most influential, and often the most innovative, centers of policymaking have tended to be in state governments. In its search for a fertile state environment — one where the key institutions were versatile and open to exploring the green agenda, and where opportunities for demonstration projects were relatively plentiful — Green Communities found its first great system-building opportunity in Minnesota.

⁵ A complete list of Green Communities partners is on the inside back cover of this publication.

From Projects to Partnership to System

When the Southwest Minnesota Housing Partnership first considered buying and renovating the Viking Terrace apartments, it had a vision for accomplishing something more than preserving the affordable rents and rescuing the building's failing economics and deteriorating structure and systems. The organization wanted to create a model of a more durable, energy-efficient building that would hold down its operating and maintenance costs, stay attractive and sturdy, and not find itself in trouble, once again, in another decade or two. All these were principles the group already considered fundamental to its work, and it had some experience to back up its beliefs.

“Our philosophy,” says Rick Goodemann, executive director of the Housing Partnership, “is that if we’re going to preserve these buildings, we ought to preserve their operating and maintenance costs as much as possible, far into the future. That means putting in more capital up-front, including capital reserves for future operating and maintenance costs, and reducing the later expenses with first-rate efficiencies. I have a 20-year history of trying to rescue failing federal housing projects that weren’t done properly in the first place, where the project was starved from the beginning and owners had no incentive to keep up with maintenance and repairs.”

But when state housing officials first saw the full scope of the Housing Partnership’s proposal for the complex, they balked at the additional up-front cost. Some green elements of the plan weren’t unusually expensive and caused no alarm: on-site recycling of materials, long-lasting cement fiber exterior siding in place of wood, true linoleum flooring rather than vinyl, countertops made of soy-based material. Those got a relatively easy, if still unofficial, green light. But some of the building’s more fundamental problems couldn’t be remedied without adding more substantially to the front-end cost of renovation. Flat roofs held moisture and summer heat and were costly to maintain; insufficient insulation and low-end windows left the apartments vulnerable to Minnesota’s extreme climate range; limited ventilation contributed to unhealthy indoor air and drove up heating and cooling costs; individual air conditioning units struggled inefficiently to cool whole apartments. All these things could be patched up for now, but their basic inadequacies would continue to undermine the building over time.

To fix those longer-term problems, the Housing Partnership had proposed a more-than-normally ambitious plan. It included replacing the flat roofs with gables and steel roofing, which would not only repel moisture and refract heat, but would make room for additional insulation. It also included installing a geo-thermal heating and ventilation system — an especially expensive item, measured in up-front capital costs. Geothermal systems are buried near buildings to draw warmth from the earth’s subsurface for cold-weather heating or, operating in reverse, to extract heat from buildings in warm weather and leave them cool and dry. They require more elaborate ventilation than conventional heating and cooling technology, but this improved ventilation is itself beneficial for the long-term health of the building. On one hand, the geothermal installation alone would add more than half a million dollars to the project’s initial cost. On the other hand, engineers’ sophisticated energy modeling showed that this cost could be completely recaptured within a decade, based on energy cost savings alone.

In Goodemann’s view, the opportunity presented by Viking Terrace would be a shame to miss. Documenting its long-term economies and efficiencies would help strengthen the wider policy argument for breaking the low-investment/expensive-repair cycle in affordable housing. So in the Partnership’s original vision, the project would

not only preserve and strengthen Viking Terrace for the next 50 years, rather than 15, but also help change the course of affordable housing construction. It would be the object of close study and evaluation by the University of Minnesota's architecture school and other experts, who were more than eager to take on the research challenge.

Still, those are not the kinds of calculations on which traditional government housing-subsidy programs are typically based. As state housing officials initially saw it, the additional short-term costs were substantial but the long-term savings were still unproven. The cost of a geothermal system alone would be enough for the state to subsidize as many as a dozen units of housing somewhere else. So the Housing Partnership's staff was disappointed, but not necessarily surprised, when its first approach to state officials for funding the higher-end efficiency improvements was almost instantly rebuffed.

“The first reaction was ‘no way,’ because these weren't standard for a basic renovation. The data on [the effectiveness of] geothermal was still new, and the whole up-front cost just shut down the conversation. The state sent us back to do a basic, pure-vanilla proposal, which is what we ended up submitting. Actually, it wasn't really vanilla; it still had a lot of green elements — durable and recycled materials, linoleum, Energy Star appliances, some better ventilation. But the big stuff was gone.”

The Southwest Minnesota Housing Partnership had almost everything it needed for putting together a standard-setting green development, with one critical exception. It had some experience in green construction (two recent projects, a 20-townhouse development and a single-family home, both had extensive green features). It had a design and development team with much, though not all, of the requisite expertise. It had a team of scholars ready to study and evaluate the project. And it had a complex of inefficient, run-down buildings that seemed to cry out for a green renovation. What it did not have was a system of funding and policymaking that it could rely on for support — that is, institutions and agencies that offered regular sources of financing and expertise, an overarching public policy for evaluating and encouraging sustainable development, and housing officials, both public and private, who were accustomed to underwriting and supporting such developments. In the past, that gap would have been enough to defeat the Partnership's more visionary plans for greening Viking Terrace. But those circumstances were about to change.

It's only fair to point out that it would have been a significant achievement for the project to be funded at all, even in a much lighter shade of green. As in nearly all states, competition for Housing Tax Credits and other housing subsidies is intense in Minnesota, and many worthwhile projects don't make the final cut. Even with a successful “vanilla” application, given a total cost of close to \$4 million, the project was going to need money beyond what could be raised through federal and state programs. The Housing Partnership planned to assume the existing mortgage subsidized under Section 236 and apply for Housing Tax Credits and a federal HOME grant, but even if all those applications were successful, that would still leave a sizable funding gap. And the longer-term question of rising utility bills and lingering high maintenance costs would remain uncertain.

Goodemann had reasonable hope of turning to the Greater Minnesota Housing Fund, the city of Worthington, and possibly other contributors to fill in the missing financial support for the project. He had begun discussions with GMHF with that hope in mind, though at best he envisioned being able to cover the basic plan with some low-cost green features. Given the state's objections to geothermal and other higher-end plans, the “big stuff” was still not on the table. Yet the timing of Goodemann's discussions turned out to be especially fortunate. Just in time for Viking

Terrace — and a handful of other aspiring green projects around the state — the two Housing Funds had launched Minnesota Green Communities and were about to circulate the program’s first Request for Proposals.

By taking that step, the two Housing Funds were not only placing their considerable reputations squarely behind the Green Communities vision, but thanks to their web of working alliances, they were beginning to attract key state and local partners into the effort. The first, and most crucial, of these was the state Housing Finance Agency.

“We were an easy sell,” says Minnesota Housing Commissioner Tim Marx, “because we’ve been working on issues of quality housing for years — efficient land use, healthy housing, supportive housing to end homelessness — lots of concerns that go beyond basic production and address quality, durability and special needs.”

Given the agency’s difficult balancing act between financing more units and allocating extra money for quality enhancements, its embrace of the emerging green demonstration was significant. And if the goal was to establish green development as a significant new direction in affordable housing, the rallying of the state’s key funders around the idea — along with the enthusiastic participation of many local governments — was a signal event. Admittedly, this was to be a demonstration, not an established statewide system of regular, permanent operations. But it would be a demonstration that no affordable housing developer could fail to notice — and one that no single funder could have accomplished on its own.

For an ambitious green developer like the Southwest Minnesota Housing Partnership, long on innovative plans but critically short on sympathetic funders, the stars seemed to be coming into alignment.



With the launch of Minnesota Green Communities came the necessary funding for the greening of Viking Terrace – and a demonstration that no affordable housing developer could fail to notice.

Under Construction

In mid-April 2005, when the partners in Minnesota Green Communities issued their inaugural RFP, they hoped for at least four credible responses. They offered grants up to \$150,000 to help defray the additional front-end cost of greening affordable housing projects, in addition to the low-cost gap financing traditionally offered by the two Housing Funds. The RFP set forth the complete Green Communities criteria and checklist, and announced that projects would be considered only if they met all the mandatory items in the criteria (beyond those, there were extra points for optional items). Although staff members of the Housing Funds had heard informally about a few projects that might apply, including Viking Terrace, they weren't sure how much of a response to expect. Would the criteria be too demanding? Would developers understand them and be drawn to the program, or be put off by a list of new and unfamiliar requirements? If the responses were too few, or of poor quality, what harm might that do to the hope of creating a green bandwagon?

There was no need to worry. By the response deadline, just over a month later, the Minnesota Green Communities partners had received 17 proposals, nearly all of which were strong contenders. Of the four that were eventually chosen, two were from Minneapolis, one from Duluth and the fourth, Viking Terrace, from the rural southwest. Each of the projects not only met all the Green Communities criteria, but exceeded them with creative or ambitious features that showed far more than a fledgling commitment to green development. The following are the program's first four projects, all of which are still in development or under construction as this report is written:

- **New San Marco, Duluth** — A new 70-unit apartment building providing supportive housing for formerly homeless people with long-term disabilities or special needs. All the apartments are either single-room-occupancy units or efficiencies for single adults, and the building offers ongoing supportive services on-site to help them maintain stable housing. Meeting all the basic Green Communities criteria, it also



provides for the reclamation of a Duluth “greyfield” — an unsightly, economically obsolescent property that stunts the neighborhood’s redevelopment prospects and wastes land. In this case, the site had housed abandoned, dilapidated apartment and commercial buildings that were both an eyesore and a hazard. New San Marco demonstrates that, far from being a luxury add-on for high-end developments, green planning and development can

serve the interests of a community’s poorest and most vulnerable residents — some of the very residents for whom a healthy, clean and durable home is most essential. The project is using its \$150,000 Green Communities grant to pay for, among other things, a green-building consultant, additional architecture and engineering costs associated with green construction, environmental reviews and site testing. *Developer: Center City Housing Corp., a nonprofit community development organization. Architect: LHB.*

- Ripley Gardens, North Minneapolis** — A long-vacant historic maternity hospital that is being converted into 52 apartments and eight townhouses. Thirty of the units are affordable for low-income residents. The complex will contain three renovated historic buildings and three new ones, with dwellings that range from four supportive-housing units for formerly homeless adults to eight townhomes for sale to first-time homebuyers. The historic reclamation not only satisfies the Green Communities criteria for central location, close to transit and amenities, but it returns a formerly derelict site to productive and attractive use, eliminating a source of blight and a waste of usable land. By placing all parking under ground, the project reserves its above-ground space for higher-density construction while still leaving ample room for significant green space, walking paths, a community room and a play area. Most of its \$90,000 Green Communities grant is being used to defray the additional cost of green construction and materials. *Developer: Central Community Housing Trust, a 20-year-old nonprofit developer of affordable housing across the Minneapolis-St. Paul metro area. Architect: LHB.*



- Wellstone Apartments, South Minneapolis** — Forty-nine new rental units, 37 of which are affordable for low-income residents, in a mixed-use building with commercial space on the ground level. The building is part of the much larger 300-unit Franklin-Portland Gateway development, a mixed-income project encompassing four buildings surrounding the intersection of two major thoroughfares. Beyond satisfying the essential Green Communities criteria, the Wellstone building will reclaim a greyfield (now a parking lot with an abandoned gas station/convenience store) just 10 blocks from the Minneapolis downtown business district. As at Ripley Gardens, underground parking provides the most efficient use

of above-ground space for apartments, retail and other amenities, including a play space located safely behind the building. Among the project’s green innovations will be a solar domestic hot water system, designed with technical support from the Minneapolis-based Green Institute, and a heat-recovery system to make efficient use of heat generated in the underground garage. Most of the \$87,000 Green Communities grant will go toward offsetting some of these additional costs, with a small amount providing for a “Green Home Guide,” and other orientation and



training efforts to help residents make the most of their building’s green features. *Developers: A joint venture of Hope Community, Inc., a nearly 30-year-old South Minneapolis community development organization, and Central Community Housing Trust, which is also developing Ripley Gardens. Architects: Cunningham Group and Urban Works Architecture.*

- **Viking Terrace, Worthington** — The substantial rehabilitation of 60 apartments in three occupied buildings. As each building is renovated, residents are being temporarily relocated while their apartments are thoroughly rebuilt and re-equipped. The two-acre site is also being re-landscaped with water-efficient plants, new walkways, a refurbished playground and a bank of trees to act as a snow barrier. Two hundred feet below the new landscaping, 64 new wells form the heart of the new high-efficiency heating and cooling system. The project includes all the basic Green Communities requirements plus the geothermal system, the new metal gable roofs and added insulation, and other extras that Goodemann once thought would have to be jettisoned for lack of funds. Multiyear studies of the building's performance — structurally, environmentally and economically — will be undertaken by the University of Minnesota and the National Center for Healthy Housing. In particular, the National Center for Healthy Housing will conduct a first-ever longitudinal evaluation of the effects of green construction on residents' health and well-being. By interviewing residents and documenting the physical condition of the apartments over time, the Center hopes to clarify the complex connections among health, buildings and communities that underlie the Green Communities demonstration. When the renovation is completed, the Center will also offer multilingual training for residents in ways to get the maximum benefit from the buildings' new green features.

Although the Green Communities grant of \$150,000 was far from enough to provide for all the additional green features, the Minnesota Housing Finance Agency also agreed to increase its support to the project in order to meet more of the cost. Further, Minnesota Green Communities and the Greater Minnesota Housing Fund loaned the project an additional \$100,000 in the form of an innovative “energy-efficient mortgage,” repayable largely from savings on fuel bills. The mortgage is the first of its kind in Minnesota, and constitutes a pilot test for what could become a new, widely applicable financial product. The Southwest Minnesota Housing Partnership also arranged additional contributions from other sources. *Developer: Southwest Minnesota Housing Partnership, a 15-year-old community development organization serving over 25 rural counties in southwestern Minnesota. Architect: I&S Architects & Engineers.*

Far from having to fear a dearth of proposals, or a shortage of enthusiasm for the green criteria, the response to Minnesota Green Communities' first RFP unearthed what Angie Skildum, research and policy director at the Family Housing Fund, called “a deep untapped demand.” “The challenge wasn't persuading them that green was desirable,” Skildum concluded. “The challenge was keeping their plans in line with what could realistically be funded — to make room for innovation and stretching the limits a bit, but not going for so many bells and whistles that the price would set off alarms.”

Still, the outpouring of interest in the first round⁶ came mostly from a leading edge of affordable housing developers with longstanding interest in green development. The great majority of the field still would need some help in understanding and using the criteria — and especially in assembling a development team of professionals certified and experienced in green technology. To start meeting this longer-term need for training, promotion, and relationship

⁶ A second RFP, issued in the spring of 2006, drew a similarly big response: 19 proposals from around the state, including eight from outside the Twin Cities metro area. Recently selected projects include: Cherry Ridge Apartments, Mankato; Sawtooth Cottages, Grand Marais and Infill Scattered Site, Duluth; LSS Park Avenue Apartments, Minneapolis; and Van Cleve Court Apartments East, Minneapolis. www.greencommunitiesonline.org/minnesota.

building, the Minnesota Green Communities partners held their first statewide conference in April 2006, just after the second RFP had been issued. The event drew more than 200 participants, representing a sizable portion of the state's urban development organizations, and a smaller share of rural developers. (The event was held in the Twin Cities metropolitan area, which required a long drive for some outstate organizations.) Evidently, participants were impressed enough with the results of the two-day event that it actually drew more enrollees on the second day, and spurred great interest in future events and trainings. In order to reach a more rural audience, Minnesota Green Communities offered three one-day conferences in November 2006 in northern, central and southern Minnesota, with nearly 100 participants at each event. A second annual statewide conference in May 2007 also achieved the partners' goals for good participation from all regions of the state.

Building interest and participation among rural developers is a goal that presents both opportunities and obstacles. Residents outside metropolitan areas sometimes have a more firsthand grasp of environmental issues: loss of natural environment, consequences of pollution and (especially where fuel comes in periodic deliveries of oil and liquid propane) the volatility of energy costs. On the other hand, conservation, sustainability and other environmental concerns are sometimes portrayed in public debates as urban preoccupations, reactions to smokestack industries and crumbling infrastructure, rather than general concerns that extend equally to all kinds of communities.

That perception briefly surfaced, for example, in the run-up to the redevelopment of Viking Terrace. As the city of Worthington was considering its role in endorsing and funding the project, Brad Chapulis, the city's director of community and economic development, was sometimes asked why such a small town needed to invest so heavily in state-of-the-art conservation methods like geothermal heating and cooling or in extensive design features like the project's roof replacement. "It wasn't really an objection," Chapulis explains, "but it was a question. Does this really apply to us? Do we need to go this far?"

Jorge Lopez, the senior project manager on Viking Terrace, says that he and Chapulis found the question relatively easy to answer. "Moisture and mold build up in small towns the same as in big cities. Heating bills are high here the same as they are everywhere else, and it gets hot and humid in the summer just the same. Poor ventilation and leaky windows cost money and make a place uncomfortable whether the population is 11,000 or 100,000. And 20 years from now, you'll be fixing up an inefficient building, spending a lot of money to do it, no matter what size city you're in." Those answers resonated with public officials and residents, Chapulis says, and support for the project ran high throughout the course of the project.

Still, many rural communities have not yet had that discussion, and the policy questions remain wide open in many places. "So far," says Warren Hanson, president and CEO of the Greater Minnesota Housing Fund, "the 'green excitement' has been mostly metro-centric. A lot of it has been about sprawl, congestion, creating green subdivisions or office buildings. Lately, though, we're beginning to see sustainable development interpreted in ways that appeal to small communities — more livable environments, conserving natural resources, controlling costs, and building homes that last longer and hold their value. Those ideas are taking hold, little by little, and the [Green Communities] demonstration projects help showcase them."

Beyond Minnesota: Building a National Movement

Although Minnesota Green Communities is the best example, thus far, of a statewide system beginning to organize and coalesce, the partnership for green affordable housing has had a similarly enthusiastic reception — and faster-than-expected production — among housing developers all over the country. As this report goes to press, the national Green Communities initiative is two-and-a-half years old, and in its second year had 150 developments under way in 23 states, for a total of 7,000 apartments and houses. That is more than four times as much production as initially forecast for the first two years, with aggregate investment 61 percent higher than the target. The program has trained more than 2,700 housing professionals in green techniques through regional workshops, online training and other technical support.

The reason for the rapid progress, says national Green Communities Director Dana Bourland, is that “there is a real hunger for this kind of development out there, and lots of developers have been thinking about it, trying to get it funded, imagining what they’d do if they had the money, talking to one another about it. So they’re ready.

“But they haven’t had a lot of the things they would have needed to get started — not just money, though that’s obviously a big issue. They don’t necessarily have access to the architects and engineers, the general contractors, the technical specialists who can get the work done efficiently without a lot of trial-and-error. Or they may know about some green ideas that they’d like to try, but not necessarily have a clear idea of integrated design — about how all the elements should fit together in an economical, well-planned, efficient way. It’s one thing to say you’d like to pursue a green project — and maybe you might even have a willing funder who’d help you do some parts of it. But without a development team that knows the opportunities and the pitfalls, that has experience with successful projects, and that can fit the pieces together for a high-quality, durable, efficient overall result, you could end up spending too much, or not getting what you hoped for, or both.”

Assembling those resources — technical, financial and professional — takes time and individual attention. But it becomes somewhat easier, and the resources become far more likely to expand, when supportive public policy and cooperation among funders begin to solidify into a green housing system, as is happening in Minnesota. Important pieces of that same formula have also come together in other Green Communities sites around the country, with statewide efforts taking shape in Florida, Massachusetts, Michigan and Ohio. A notable effort at the municipal level is in San Francisco, where in August 2005 Mayor Gavin Newsome announced that the city would apply “environmentally sustainable development principles to all new affordable housing developments” in his city.

He made that commitment at the groundbreaking of one of the earliest projects built to the standards of the Green Communities criteria: the 106-unit Plaza Apartments, a supportive residence for very low-income San Franciscans, many of whom were formerly homeless. Mayor Newsome returned to the project, and reiterated his commitment, for the grand opening seven months later, by which time five more green affordable housing developments were under way in San Francisco. Together, these projects will produce 600 healthy, sustainable apartments for low-income and homeless residents.

Pressure to go green, whether from funders or public authorities or both, will succeed only if affordable housing developers gradually acquire the knowledge and experience in green techniques that can make these practices truly mainstream. Much of the challenge extends beyond adopting and funding green standards, to supporting training and professional development among the many actors who make up an effective green development team.

The mayor's commitment to green affordable housing as a uniform, citywide standard is thus far unique. But in Minnesota, the two Housing Funds have embraced something similar as a goal to be achieved by 2010. There, they have set themselves the challenge of making all affordable housing projects green statewide — not necessarily through formal regulation, but by gradually incorporating the green criteria into normal practice throughout the field and by embedding them into the standards by which projects are selected for funding.

Weaving green criteria into funding decisions for affordable housing is, in many communities, a logical first step toward making it a mainstream practice throughout the industry. “Affordable housing is a highly delineated, closed system,” says Tom Fulton, president of the Family Housing Fund. “It’s an environment where a very few people and organizations control the lion’s share of the resources. If they have the will to make it a requirement, it’s a requirement. And in time, by example and by spreading technical knowledge, it can affect the entire residential housing construction system, even beyond affordable housing.” Following that reasoning, funder collaboratives have become an important part of the Green Communities strategy as the program unfolds nationwide.

In Oregon, Washington, Montana, Idaho and Alaska, for example, the Meyer Memorial Trust and the Paul G. Allen Family Foundation have joined with Enterprise to form a \$125 million program called Northwest Green Communities, aiming to build at least 1,500 affordable homes that conform to the Green Communities standards. Though the funding partnership doesn’t yet represent, by itself, the “lion’s share of the resources” for green development, in the way Tom Fulton envisioned for Minnesota, it nonetheless starts with two large and highly influential funders in close collaboration with Portland’s Office of Sustainable Development and Seattle’s Sea-Green program. Together, these local actors, working with Enterprise and NRDC, constitute an important signal to the larger affordable housing system that could well grow, in time, into a broader consensus among funders and policymakers across the field.

Still, pressure to go green, whether from funders or public authorities or both, will succeed only if affordable housing developers gradually acquire the knowledge and experience in green techniques that can make these practices truly mainstream. Much of the challenge therefore extends beyond adopting and funding green standards, to supporting

training and professional development among the many actors who need to make up an effective green development team. Some of this can be done wholesale, in Web conferences or at workshops and symposia. Often, though, the most effective training is hands-on, especially in the course of selecting, planning and developing particular projects. “Green development consultants” are a common line item in the budgets of Green Communities grants. That represents an additional up-front cost of sustainable development, but it’s one that will become less common over time, as more and more developers become acquainted with the relevant technologies and contractors begin to adopt green techniques as part of their routine practice.

For example, as part of its support from Green Communities, Atlanta’s University Community Development Corporation got technical help on its first green development from Southface, an Atlanta nonprofit with expertise in green construction. Acting as a consultant from the earliest stages of the process, Southface worked with the development group to ensure that the Green Communities criteria were properly included in the specifications circulated to potential contractors, and that the contractors took realistic account of the criteria in submitting their bids. Thereafter, Southface appeared periodically at the construction site to see that the green elements were being implemented fully and efficiently, and tested the final houses for air-tightness and other requirements.

As a result, according to Pete Hayley, executive director of University CDC, “we now know, on our own, how to implement the criteria from a construction standpoint, though there are still aspects of the job where we’re going to need help, like the final testing. But with Southface acting as a consultant, we’ve learned throughout the construction process a lot of what needs to be done, what to look for, and we’re at the point where we can work through a lot of the stages on our own.

And now that we’ve built six or seven houses [using the Green Communities criteria], we’ve also gotten a handle on the additional cost, and we’ve been able to reduce it in the projects we’re doing now. When we first got started, we had a hard time finding the right plumbing and electrical fixtures, even some appliances that met the criteria. Now that we’ve found suppliers and manufacturers that supply the right materials, we’ve gotten more of a handle on the cost, and they give us a lower price because we’re buying in more volume.”

Principles, Challenges, Opportunities

After less than three years' experience, it would be premature to claim to draw definitive lessons or conclusions from the Green Communities endeavor. That will have to wait for the results of at least a few years of effort. It is, though, worthwhile to review the essential principles on which the initiative has been built, and to envision what it would take, over the next decade or so, to turn these first steps into a far-reaching change in the way affordable housing is planned, built and valued.

The first of these principles is modest initial cost. The essential insight behind Green Communities is that building green doesn't require a profound change in the economics of affordable housing — or at least not of affordable housing development. If the research of recent years is right (and dozens of Green Communities projects are so far bearing it out), the initial cost difference is marginal: 2 percent to 3 percent on average, or about \$3,000 to \$5,000 a unit. The real economic change associated with green development is in the way “affordability” is conceived and calculated over time. When the lifetime cost of a housing development — both to its owners and its residents — is taken into account, green housing turns out to be more affordable, not less. Its efficiency, durability and environmental effects seem likely to make economic sense much farther into the future than most developments do today.

True, it's possible to approach green development on a much more ambitious, and initially more costly, scale. Some expensive new technologies may even promise greater long-term economies and health benefits, but their “sticker shock” potential could be a liability at this stage. “We need to be careful not to end up being defined by all the futuristic, exciting, big-ticket innovations,” says Warren Hanson of the Greater Minnesota Housing Fund. “That will work against us in bringing change to scale. At this stage, while we're mainly working with people who aren't familiar with the basic ideas or their benefits, the demonstration needs to be kept in bounds, proving the fundamentals and building a base of experience and credibility.” Once the early successes have changed the way long-term costs are reckoned in gauging affordability, Hanson and others argue, it will be easier to justify the larger initial costs of bigger innovations. In fact, some believe, there will then be a swelling market demand for technologies that seem challengingly “futuristic” today.

The second principle is clear standards. It is important to start with a common, complete understanding of “green affordability” around which coalitions can form. Two considerations make a standard set of criteria valuable. First, given the wide variety of individual ideas and products that qualify as “green” in one way or another, it is necessary to identify those that are essential, reasonably priced, and yet complete enough to make a fundamental, lasting difference in the quality of the building and its environment. Second, individual features aren't enough; it's equally important to ensure that methods, products and technologies fit together to make for a healthy, durable, affordable and environmentally responsible development. The Green Communities criteria are based on the principle of “integrated design,” meaning that developers, planners, architects, engineers and building contractors all approach the project as a sustainable, efficient whole, and pursue their various roles from the beginning with that goal in mind. For example, the choice of a site not only determines whether residents will have easy access to transportation, jobs and amenities; it may also affect considerations about natural light, drainage and water-efficiency. The choice of materials affects not only the durability of the building but residents' health and ease

of maintenance. The point is that in Green Communities, the criteria are deliberately interrelated, and rely on a development process that treats them as a single, coherent product.

“Formulating those criteria,” says Tom Fulton of the Family Housing Fund, “was a breakthrough in the first line of resistance to green development, which is: ‘What the heck is it?’ How can we encourage it, much less require it, if everybody has a different idea of what green housing is?’ Creating a single, professional consensus set of criteria was a huge step. It not only set a standard, it gave developers the confidence to try ideas they might have thought of as controversial, now knowing that there is a definition they could fit into, and that other people are also aspiring to.”

The third principle is wider expertise and experience. Useful as it is to create any well-designed and well-built green project, the long-range success of Green Communities won't be measured in the number of projects it supports, but in the way practitioners end up pursuing their ongoing work in affordable housing. That means continually enlisting more and more professionals — whether through direct participation in projects, through advocacy and training, or by demonstrating the human and economic benefits of green development — and encouraging them to learn more and more about the available technology. It also means continually deepening the expertise of those already enlisted, because what eventually becomes professional orthodoxy in any given field frequently originates as word-of-mouth: a good idea passed from practitioner to practitioner, tested in a few initial projects, observed and imitated by others, and so on. “When we talk about ‘capacity,’ ” says Dana Bourland, Enterprise's Green Communities director, “we're really talking about developing skills, creating new standards of practice, and helping every new green developer turn into an advocate and a trainer and a leader in the industry.”

The fourth is coalitions of funding and policy. There is almost no way to change the normal practice of affordable housing development without also changing the way such development is financed, subsidized and regulated. Few states have as close-knit a group of decision-makers in affordable housing as Minnesota has, but virtually all of them have a comparatively small number of private and public authorities who in effect decide which proposals will be funded and built. The more closely these funders and policymakers work together, the more likely they will be to learn about green development (as well as other innovations), share insights and information with one another and incorporate what they learn into supportive decisions. Those outside this core decision-making circle — smaller funders, developers, experts and advocacy groups — can encourage such collaboratives to form and can introduce them to the possibilities of more deliberate support for green development. That is a core mission of the Green Communities initiative, to which a growing roster of partners and supporters has signed on.

Fifth is a stronger evidence base. After decades of growth in the environmental and conservation movements, the science of green development — technical means of estimating efficiency and durability, reducing costs, and projecting savings and other benefits — is considerably advanced. Much of that knowledge, however, is still confined to technical publications, research institutes and circles of expert practitioners in such fields as architecture and engineering. Presenting this information convincingly to a wider audience, especially to policymakers and funders, is crucial for advancing the green agenda. One advantage of demonstration projects like those in the Green Communities initiative is that they play the role of reality-testing technical forecasts of long-term affordability, durability and efficiency specifically in the field of affordable housing. That is one reason why Rick Goodemann considered it so important that Viking Terrace be the subject of careful, independent research, so that future developers “won't have to struggle with the same concern from funders that we heard: that the savings

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we’re projecting are just speculative, that the up-front investment is a huge gamble, that the formal models don’t necessarily apply to this setting or that kind of building.” With research on the operating and maintenance costs at the renovated Viking Terrace, plus the National Center for Healthy Housing’s research on health benefits to its residents, the cost-benefit calculation for a future generation of projects will become clearer. It will be based not on data from commercial buildings or higher-end housing, but on a real affordable housing development serving a mixture of low- and moderate-income people in a real Minnesota community.

Opportunities for Funders: A Concluding Word

“I sometimes get the complaint from other funders,” the Family Housing Fund’s Tom Fulton said, “that the problem of sustainability and affordable housing is just too large, too complicated, too expensive. What can a small funder do? My answer to that is: You don’t have to solve the whole problem. Fund the green premium — a few thousand dollars a unit — for as many units as you can afford. You can make a tremendous impact on some number of families, at a minimum. And more and more, you’ll find yourself part of a larger case being made.”

The “larger case” is a combination of practical demonstration, wider discussion and advocacy, and a growing body of evidence, all of it showing how green development leads to superior housing at manageable cost. Making that case depends on all five of the basic tenets listed in the preceding section. Supporting individual housing developments, or policy roundtables, or programs of training and technical assistance, or research, or any combination of these would provide a funder an influential opportunity to draw housing, health, land-use planning and the environment into a more effective alliance.

All of the funders interviewed for this report pointed out that their particular field of interest — whether housing or health, conserving natural resources or combating poverty — benefited from being linked with the other fields. Supporting coalitions that make such connections real is, as one national Green Communities funder put it, “a way of building our constituency beyond our own particular sector, of showing that our work benefits more than just our own grantees and the people they serve, but a wider social purpose, something that everyone, in every field, is becoming more and more concerned about. Each new ally strengthens the coalition; each new funder joins a stronger movement.”

Building green is not just a personal and organizational responsibility; it's an enormous opportunity to do what we do better, more responsibly, with greater effect. And as every year passes, we're going to wish we had done more of it, sooner."

And in any case, as Tom Fulton points out, "beyond all the other justifications for investing in green affordable housing, there's the argument for expanding the appeal of the issue to more people. The total resources available for housing are a function of the number of people, the number of funders, interested in it. By making it green, durable, efficient — by making it a net contributor to community health, the environment, economic development — you broaden the base of appeal, and that increases resources."

When he talks about the increasing persuasiveness of green development, Fulton is not speaking theoretically. "Two years ago," he acknowledges, "I would have said that affordable housing is hard enough without adding more to it. Today, I'm a believer, partly because of what I've learned and experienced in working on green development firsthand, but partly by just coming to terms with the limits and the demands that all of us are facing, and are going to face in the coming years. Building green is not just a personal and organizational responsibility; it's an enormous opportunity to do what we do better, more responsibly, with greater effect. And as every year passes, we're going to wish we had done more of it, sooner."

For Enterprise, Green Communities will continue to evolve to achieve its goal of making sustainable development the mainstream approach among affordable housing developers. "As Green Communities developments go through construction and come on line, we are learning a great deal about developer experience and building performance," according to Enterprise's Bourland. "We will share those lessons with our partners and use them to refine and expand our resources to support green projects."

"We haven't perfected the approach by any means, but our experience after two years shows that community-based developers can build healthy, environmentally responsible projects on a cost-effective basis," Bourland adds. "So, for Enterprise there really can't be any turning back. Sustainable development simply has to be how we approach creating homes and communities, for everyone."

Appendix: Beyond Minnesota



Environmental Protection and Cost Savings in Oregon

Oleson Woods Apartments in Tigard Ore., near Portland, is a Green Communities development with 32 newly constructed cottage-style homes that integrates green building and environmentally sensitive site planning. The development features a “whole house” ventilation system, natural and fluorescent lighting, energy-efficient systems and appliances, and healthy building materials.

The developer, Community Partners for Affordable Housing, made special efforts to incorporate green principles into the site development as well. Oleson Woods preserved and maintains significant natural resources on-site, protecting a wetland on the property, safeguarding a wildlife habitat, providing natural storm-water runoff filtration and preserving more than a dozen trees over two feet in diameter. CPAH also has developed environmental programs

for the residents based on the green elements of the project.

According to CPAH Executive Director Sheila Greenlaw Fink, Oleson Woods’ environmental features were critical in securing the support of the surrounding community, which had expressed initial concerns about an affordable housing development on the site.

“This is the first time we’ve ever developed on a site that had such rich environmental resources,” said Greenlaw Fink. “This is a good model for smart growth. It’s a step toward greenerism.”



Mass Transit Access and Energy Efficiency in Massachusetts

Trolley Square in Cambridge, Mass., features 32 rental apartments and eight home-ownership townhouses, along with street level retail space, in a state-of-the-art green infill development. Located on the site of the former trolley barns for Cambridge's early public transportation system, Trolley Square offers walkable access to mass transit.

Homes open directly onto the Cambridge Linear Park, a bicycle and pedestrian path, and are sited around a central courtyard with ample gardens and seating. The property incorporates a wide range of energy-conserving features, generating an overall Energy Star rating of 90, indicating a very high level of efficiency. Trolley Square is also notable for its heavy use of durable and

resource-efficient materials for exterior siding, cabinets, doors, hardware and flooring.

Homeowner's Rehab, Inc., the developer, is also working closely with residents to realize the benefits of their sustainable homes, producing a guide to green living (required for all Green Communities developments) and assisting residents in capturing the pocketbook savings of a more efficient home.

"Our mission is not only to produce quality affordable housing for our residents," said Jane Jones, HRI's senior project manager. "We also want to create energy-efficient homes that do not negatively impact the environment and at the same time help reduce monthly bills and operating costs."

Supportive Services and Cutting-Edge Green Building in Chicago

A YMCA single-room occupancy building now offers greener, healthier living for 63 formerly homeless individuals, thanks to a conversion that included on-site recycling of demolition and construction materials.

The developer, East Lake Management and Development Corp., incorporated cutting-edge green building technologies that make **Washington Park** 60 percent more efficient than a conventional building. Green features include a geothermal heating and cooling system, a solar thermal hot water system, a partial green roof, and super insulation around the walls and windows. The savings from these elements will pay back initial higher costs in six years – and generate economic and other benefits well beyond that time. The green features, and the development’s proximity to transit and services, also make the building more comfortable for residents who are transitioning to a promising new lifestyle with additional support from on-site case managers.



Support from Green Communities proved crucial to the project’s green goals, according to Wyllys Mann, development consultant on Washington Park. “That money let us build green on a project where the margins were so small that we wouldn’t otherwise have had the funds,” said Mann. “I guess what I’m saying is that the Green Communities initiative really did exactly what it was supposed to do: it enabled our project to go forward green.”

Healthier, Pedestrian-Friendly Design in Seattle

One of the busiest corners in Seattle’s Capitol Hill neighborhood now boasts a striking new building. But you have to look inside the new affordable apartment complex – and below it – to fully appreciate **Broadway Crossing**’s ground-breaking value.



Broadway Crossing includes the first Walgreens in the country built as a mixed-use development. Above the 11,000-square-foot drugstore and two levels of underground parking are four floors with 44 apartments affordable to residents earning up to 60 percent of the area median income. Nine apartments are designated for formerly homeless families.

With support from a Green Communities grant, the developer, Capitol Hill Housing, incorporated more than 50 environmentally friendly and healthy features, such as Energy Star appliances and lighting fixtures, and low-volatile organic compound paints, primers, sealants and adhesives. But for all its pioneering attributes and aesthetic appeal, Broadway Crossing remains a model of what’s possible – and, indeed, what’s to come. State officials chose Green Communities as the sustainable development standard for Washington’s

Affordable Housing Trust Fund. So, beginning July 1, 2008, all developments receiving trust fund support must meet the same criteria that informed Broadway Crossing’s development.

A Blue-Chip Team of Green Partners

The success of Green Communities is driven by the support of an outstanding team of partners. Led by Enterprise and the Natural Resources Defense Council, the Green Communities partners include corporate, financial and philanthropic organizations, with strong support from the U.S. Green Building Council. We are pleased to acknowledge them here.

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The American Institute of Architects
The American Planning Association
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The Bullitt Foundation
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