THE BUILT ENVIRONMENT AND HEALTH

11 Profiles of Neighborhood Transformation

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Prevention Institute is a nonprofit, national center dedicated to improving community health and well-being by building momentum for effective primary prevention. Primary prevention means taking action to build resilience and to prevent problems before they occur. The Institute's work is characterized by a strong commitment to community participation and promotion of equitable health outcomes among all social and economic groups. Since its founding in 1997, the organization has focused on injury and violence prevention, traffic safety, health disparities, nutrition and physical activity, and youth development. This, and other Prevention Institute documents, are available at no cost on our website.

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Foreword

In recent years the public health community has become increasingly aware that the design of the built environment can have a major impact on the health of the public. For example, one may expect more physical activity and healthier diets among persons in communities with convenient, safe walking paths and accessible sources of fresh fruits and vegetables. On the other hand, poorer health indicators may be expected among residents of communities with high crime rates, few parks or walking paths, numerous alcohol and tobacco outlets, and little access to fresh food.

In this monograph, the Prevention Institute has profiled eleven projects in predominantly low-income communities where local residents mobilized public and private resources to make changes in their physical environments to improve the health and quality of life for their citizens. Such changes included building a jogging path around a cemetery, transforming vacant lots into community gardens, reducing the prevalence of nuisance liquor stores, and creating attractive murals on walls where graffiti once reigned.

These case studies will help concerned citizens, urban planners, and public officials examine possibilities for local environmental changes that would improve the health of the residents of their communities.

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Introduction

This is the last town in the world...
Before this came to be, there were all the possibilities in the world.
There were all the opportunities for starting with small things to create a sweet new history and future.
If only we had seen them.

BEN OKRI, A PRAYER FOR THE LIVING

here is growing recognition that the built environment—the physical structures and infrastructure of communities—plays a significant role in shaping our health. To a great extent, the connection between environment and health has centered on the results of human exposure to contaminated air, water, and soil. Decisions about land use, zoning, and community design influence the degree of human exposure to toxins, but also have implications for neighborhood access to healthy foods, and the level of safety and attractiveness of neighborhoods for activities such as walking and biking. The designated use, layout, and design of a community's physical structures including its housing,

businesses, transportation systems, and recreational resources affect patterns of living (behaviors) that, in turn, influence health.

With support from the Centers for Disease Control and Prevention's National Center for Environmental Health, Prevention Institute crafted 11 profiles about communities across the country The designated use, layout, and design of a community's physical structures including its housing, businesses, transportation systems, and recreational resources affect patterns of living (behaviors) that, in turn, influence health.

that reveal how the built environment can positively influence the health of community residents. These profiles were written to:

- Describe the important connections between the built environment and health for practitioners in public health, city and regional planning, community economic development, and other related fields;
- 2. Support public health practitioners in looking beyond the traditional bounds of the healthcare system to address social and environmental determinants of health;
- 3. Suggest potential expanded roles for practitioners from diverse fields to promote health-enhancing improvements to the built environment;
- 4. Highlight a range of opportunities to create community-level change to the built environment through multi-sector partnerships with community residents, businesses, community organizations, and local government; and,
- Provide concrete examples that demonstrate the importance of the built environment in promoting health.

Environmental factors contribute to disproportionately high incidences of negative health outcomes (cancer, asthma, injuries) in low-income communities which are often also beset with structural and institutional inequities. Disenfranchised communities are more likely than wealthy communities to be the sites of hazards and,

BUILT ENVIRONMENT AND HEALTH: OVERVIEW OF PROFILES

The program profiles include: 1) a description of the geographic area and changes that were made; 2) the process required to implement the changes, including leadership and organizational collaboration; 3) any documented impacts, positive and negative; 4) lessons learned, framed as "wisdom from experience;" 5) supporting research that documents the connection between the built environment and health; and 6) next steps for action.

The program profiles tell the following stories:

- 1. Evergreen Cemetery Jogging Path: In the predominantly Latino, urban area of Boyle Heights, California in East Los Angeles, the Latino Urban Forum and neighborhood residents rally community-wide support to create a safe, 1.5 mile walking/jogging path. Community members previously had no access to parks or open space, but can now get physically active, in their own neighborhood.
- **2. Partners Through Food:** In the Upper Falls community of Rochester, New York, a dynamic collaborative of community members increases access to healthy food by organizing for over five years to bring a full-service supermarket into a community which lacked a single grocery store.
- **3. Boston Lead-Safe Yard Project:** An innovative partnership focusing on Roxbury and Dorchester in Boston, Massachusetts uses affordable techniques to minimize exposure to lead in inner-city yards—a contemporary environmental hazard linked to developmental disabilities and learning delays, particularly among children under six, living in older, urban homes.
- **4.** Gardens for Growing Healthy Communities: A community/academic partnership transforms vacant lots into community gardens in urban neighborhoods throughout Denver, Colorado, creating and documenting new opportunities for physical activity, healthy eating and social connections among community residents, survivors of abuse and homeless people.
- **5. South Los Angeles Liquor Store Closures:** Working to reduce violence and crime in South Los Angeles, California, this community-driven, grassroots effort organizes community residents to close neighborhood liquor stores that negatively impact community health and safety.
- **6. The Paterno Trivium:** Community residents work collaboratively with city government to transform an unsafe traffic intersection into a neighborhood gathering spot and to improve the pedestrian environment on adjacent streets in Hudson Heights, New York City—an ethnically diverse, urban community.
- **7. The Fenway Alliance:** A powerful coalition of 20 well-respected arts, culture and academic institutions revitalizes a cultural district by improving walkability through major infrastructure projects in Boston, Massachusetts. Although focused in a commercial district, their efforts demonstrate innovative roles for large-scale institutions in improving the built environment. Their work is focused on attracting African American and Latino pedestrians from nearby schools and communities.
- **8.** Westside Project: With an eye toward improving the built environment, a collaborative of local government agencies, including the public health department, work to build community support and trust before building pedestrian amenities for residents in Stamford, Connecticut who had become wary after a history of displacement and gentrification.
- **9.** The Seattle Department of Transportation: This citywide department pays special attention to achieving equity across geographic and economic boundaries while working to create an integrated network of pedestrian and bicycle infrastructure that promotes safe physical activity for residents throughout Seattle, Washington.
- 10. The Wray Health Initiative: In the rural town of Wray, Colorado a coalition builds a neighborhood walking path, basketball court and other features to make fitness fun for people of all ages by soliciting community buy-in and creating social support for activity.
- 11. Philadelphia Mural Arts Program: Utilizing a grassroots model, this effort engages community members, including ex-gang members, in the creation and painting of murals that improve aesthetics and transform neighborhoods in urban, economically disenfranchised communities throughout Philadelphia, Pennsylvania.

at the same time, often lack the infrastructure to support physical activity and healthy eating. Too many residents live in community environments that promote disease and injury and do not support healthy behaviors that can help them avoid major chronic diseases that result from sedentary lifestyles and poor nutrition (e.g., heart disease and stroke). Many people live in neighborhoods that are over-saturated with alcohol outlets and advertisements, lack grocery stores,

have sidewalks in disrepair, have little access to open space, and have dangerously high traffic speeds.

Further, compared to residents of middle-class communities, residents of low-income neighbor-hoods—struggling with the presence of environmental hazards, crumbling infrastructure, and a lack of economic resources—face even more barriers to overcoming them. They often need to implement change in the face of inadequate transportation, fewer businesses in the neighborhood to support them, institutional barriers to neighborhood investment, and lack of influence within the local government. In addition, people's previous experiences of housing cost increases and gentrification may create a realistic concern that enhancing the neighborhood could result in unintended strain and disruption to the community.

However, the physical environment can promote health directly through access to clean air and water and can influence people's behavior by facilitating health-promoting activities, such as walking, biking, and healthy eating. Changes to the built environment can have a positive impact on many health-related issues, from diabetes and asthma to traffic safety and community violence. In many cases, a change to the built environment will simultaneously impact multiple health conditions. To date, most published examples of improvements to the built environment have occurred in middle- and upper-class communities of predominantly White residents.

A good solution solves multiple problems: Changes to the built environment can have a positive impact on many health-related issues, from diabetes and asthma, to traffic safety and community violence. In many cases, a change to the built environment will simultaneously impact multiple health conditions.

In choosing these 11 profiles, we focus primarily on improvements in communities where the mean resident income is low and where concentrations of African American and Latino residents are high. We highlight how improvements to the built environment can enhance the health and well-being of members of these communities. The examples illustrate how changes to the built environment can be particularly meaningful in communities that have his-

torically lacked important features such as well-maintained pedestrian infrastructure, services and institutions, or public art. Taken more broadly, the profiles demonstrate how improvements to the built environment have the potential to reduce health disparities.

In compiling these profiles, several themes emerged about how communities are able to overcome challenges and succeed.

- Broad, diverse participation is necessary to mobilize the resources and build the will to make community improvements.
- Efforts to create health-promoting environments provide opportunities to build community resilience and marshal community assets, rather than the more typical focus on risk factors.
- Persistence and innovation are common qualities of the organizers and organizing efforts that successfully brought about improvements to the built environment.
- Engaging communities to focus on changing the policies and practices of local organizations and institutions is part of an effective strategy for improving health and leaving behind lasting changes in neighborhoods.
- Focusing on the built environment fits well with other public health approaches that a) recognize that changing individual behavior involves changing social norms and environmental determinants of health and b) concentrate on the community as the unit of analysis and action.

While making built environment changes may be necessary, they are not sufficient. As the profiles of the Wray Health Initiative in Wray, Colorado and the Westside Project in Stamford, Connecticut illustrate, improvements to the physical environment are significant components of a multifaceted strategy for promoting health that includes community education, increasing social capital and enhancing social support.

Over the past decade, more and more communities have emphasized the importance of making design decisions in the context of the overall community. The term "smart growth" refers to a land development strategy aimed at managing the growth of a community, minimizing automobile transportation dependence, and improving the efficiency of infrastructure investments. While "smart growth" initiatives have brought attention to the need to manage new growth and development effectively, Built Environment and Health: 11 Profiles, calls attention to the value of neighborhood-level changes within existing structures. Many low-income urban environments suffering from disinvestments and decay already have the skeleton of a walkable community and possess great potential. Practices as simple and routine as road repavement are opportunities for neighborhood enhancement. One road at a time, more space can be created for bicycles and pedestrians, and routes can be narrowed and altered to promote "traffic calming," (i.e., decreasing vehicular speed, and increasing safety). These profiles demonstrate that small and incremental changes are opportunities to design solutions that suit unique neighborhood environments and are significant contributions toward improving health and quality of life

locally. These changes offer substantial enhancements for the affected residents, and build momentum for further improvements.

In identifying profiles, a key goal was to highlight initiatives that clearly demonstrate linkages between environmental changes and changes in health behaviors The powerful influence of the built environment on health suggests that public health practitioners should be involved in planning and policy decisions related to land use, zoning and community design.

and outcomes. However, such projects are few and our selected efforts are not thoroughly evaluated. Documenting the health impact of environmental change efforts remains a challenge for a host of reasons. Communities generally are not collecting the quality and quantity of data needed to demonstrate impact. Some built environment initiatives are not explicitly designed with health outcomes in mind, and therefore healthrelated information may not be collected. Furthermore, multi-year surveillance of changes in population health status is often beyond the scale or resource capacity of localities. Therefore, to improve the evaluation of future initiatives it may be appropriate for local evaluation to focus on documenting changes in behavior. For example, a community can assess changes in rates of walking among residents in a manner that can be coordinated with national efforts examining changes in the rate of health conditions such as obesity and heart disease.

In cases where documenting behavior change is beyond an initiative's scope or capacity, evaluation can focus on documenting the environmental change that occurred. With nationally supported evidence demonstrating that a specific environmental change at the community level yields a positive health outcome, communities can focus on implementing and documenting the particular environmental change, rather than attempt to document the expected behavior change. Toward this end, further investment in thorough case studies to evaluate the impact of some interventions, like those profiled in this report, may be warranted.

The powerful influence of the built environment on health suggests that public health practitioners should be involved in planning and policy decisions

related to land use, zoning and community design. Health practitioners can serve an essential role in collaborating with other professionals and working alongside neighborhood residents to create and promote healthy communities. Their participation becomes imperative as the conviction grows that addressing the social and

physical environment is an essential element of a strategy to encourage healthy behaviors. Thus, a new role for public health leadership is emerging. emerging role, practitioners need to engage in three principal areas of action. The first is to assess the health impact of land use and community design options before decisions are made as well as after improvements are implemented. The second is to catalyze and facilitate inclusive partnerships with membership that stretches far beyond traditional health fields to plan new structures and redesign existing ones. Third, public health practitioners need to participate in policymaking on issues related to the built environment to ensure protection from toxins, access to healthy food outlets, places to walk and recreate, and other healthpromoting environments.

While Prevention Institute was successful at documenting compelling profiles, we also found critical needs and unfulfilled opportunities in communities throughout the country where health and quality of life could be improved through changes to the built environment. Our hope is that the profiles that follow will stimulate and inspire practitioners from multiple fields and sectors to partner with community residents, design solutions, and take action to improve the built environment for the health and well-being of all.

WRAY, COLORADO

The Wray Health Initiative builds exercise facilities and makes fitness fun for people of all ages

n the rural town of Wray, Colorado a group of concerned citizens and health care providers called the Wray Health Initiative (WHI) became motivated to support resident participation in physical activity. Building a state-of-the-art recreation facility was necessary, but it also needed an infusion of participants. A decade after they had collaborated to build a 24,000 square foot fitness and rehabilitation center, facility use was not what had been expected, so the group kicked into gear and launched a multi-pronged community health outreach program that would create outdoor facilities and help residents find the fun in fitness. With a special emphasis on heart health, WHI built recreation facilities, sponsored contests and hosted public events that would encourage regular exercise in a community context. Three years later, WHI reports significant community health improvements, including three



A COMMUNITY EVENT PROMOTES ACTIVITY IN THE COURTYARD OF THE WRAY REHABILITATION AND ACTIVITY CENTER.

times as many people participating in communitybased walking programs and regular use of newly built indoor and outdoor fitness and recreation facilities.

THE PLACE

Wray, Colorado, 170 miles from Denver, sits in a scenic valley beside the banks of the North Fork of the Republican River just 13 miles from the point where Colorado, Kansas and Nebraska meet. A long range of grassy sandhills stretches north of the city. Wray is 90 miles away from any large towns and at least 2.5 hours away from a large medical facility. It is a hilly, rural town with no formal walking paths which makes it difficult for residents to find safe, convenient areas to walk outdoors. The population of 2,187 is predominantly White, with about 5% to 10% Latinos comprising the remainder, according to the 2000 US Census. Average income for residents is under \$25,000.

THE PROJECT

In the early 1990's, through donations and foundation grants, community-minded citizens built a 24,000 square foot, state-of-the-art rehabilitation center. The Wray Rehabilitation and Activity Center (WRAC) boasted a walking track, an indoor swimming pool, nautilus equipment and free weights, a racquetball court, physical therapy equipment, and a hot tub and steam room. "It was really something," says Jennifer Kramer, WHI chairperson. "The citizens of Wray thought it nearly impossible to build a facility of this caliber in our little town."

The multi-purpose facility was open both to recovering cardiac patients and local residents through memberships. The goal of the WRAC was to provide a facility that all community members could afford to use. Memberships costs were intended to be low so that all residents could use it for exercise or physical therapy. But over time it became clear that the WRAC was

The facility use was not what had been expected, so the group kicked into gear and launched a multi-pronged community health outreach program that would help residents find the fun in fitness.

underutilized. Patients were not following up with rehabilitation instructions from their medical care providers. WHI hoped that by increasing community involvement they could promote health and increase use of WRAC facilities. The group launched a new mission: to improve health in the community by increasing activity levels, conducting health assessments, and encouraging individual physical activity.

After submitting proposals in 1999, WHI received funding of \$330,000 over three years from the Rural Health Outreach Project and \$140,000 over two years from the Robert Wood Johnson Foundation. Their first step was to hire a coordinator to support patients' physical activity efforts and continue rehabilitation. Then, the WHI partners conducted an assessment around town to determine need. Through a series of focus groups that included health care providers, community groups, teens, local clubs, and senior citizens, WHI learned straight from residents what the community members wanted to see in their town. Special priority was placed on giving voice to Latino residents, who had historically been underrepresented in community decision-making. With straight-from-thesource information in hand, WHI better understood the community's perceived barriers to exercise and activity, began to identify specific community needs and used this information to implement communityidentified solutions.

To increase opportunities for outdoor activity, WHI built a basketball court, updated playground equipment, enhanced a local walking path, and assisted with financing amenities at the new swimming facility in Wray. All of these physical changes were complement—

ed by efforts to build community awareness, increase social support for physical activity, and make exercise fun. Early on, WHI held a community-wide contest to involve residents in naming the project: "The idea was to begin engaging the community in what we were doing so they'd feel like a part of it right from the beginning," says Kramer. The WHI pro-

vided one-on-one health assessments with over 500 residents. The assessments gave personalized "recipes for success," including tailored dietary and exercise programs and let participants know how they compared to the national averages for flexibility, strength, weight, and osteoporosis. WHI coordinated walking clubs, 5K and 10K runs, a holiday marathon held between Thanksgiving and Christmas, moonlight golf, and a family fitness day to encourage intergenerational activity. The WRAC serves as a community gathering place during the Wray Health Fair, when about 400 to 500 residents visit booths, participate in screenings and learn more about health resources in the community.

Perhaps most popular and successful of all, WHI held a community event in which participants received a free pedometer and were encouraged to log their miles to "walk around the world" as a community. The participants achieved their goal so quickly that they changed the event's title to WRAY Walks the World, to the Moon and Beyond. Signs were posted around town showing collective progress. This program also engaged over 500 residents by giving them social support, pedometers, and other prizes as they publicly tracked the community's progress in walking "toward the moon."

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Medical providers, city government, and local residents joined together and formed the Wray Health Initiative (WHI). A combination of federal funding from a Rural Health Outreach grant and support from

the Robert Wood Johnson Foundation helped to maintain the effort. The City of Wray, the WRAY Community District Hospital and the Wray Rehabilitation and Activity Center (WRAC) were the three key organizations involved in the initiative.

Jennifer Kramer, a cardiac re-habilitation nurse and assistant director of nurses serves as chairperson for WHI. Revae Parker, currently community services director for the City of Wray, was director of WRAC and served on the committee when the initiative began. A doctor committed to physical activity and nutrition and a senior citizen representing the community were also instrumental. The entire process from writing the grant to implementation was a collaborative effort. To get residents excited and involved in the effort, WHI sought community input from the beginning. From the outset, people knew what role they would play and shared a common vision for achieving their goals.

THE RESULTS

Healthy Change in Local Environments

Three years since the WHI launched its efforts to improve community health by increasing activity levels, the group reports significant improvements. Three times as many people now participate in communitybased walking programs. Regular use of both indoor and outdoor fitness and recreation facilities has remained steady. The group has documented change with individual health assessments and rehabilitation success stories—including a diabetic man who lost 30 pounds and got his diabetes under control within six months. WHI also reports cultural changes in the community that support health. One example is the fact that two local restaurants became non-smoking facilities through WHI advocacy efforts. And now the local grocery store features the WHI logo, a symbol that has become synonymous with health, on hearthealthy items. In addition, a local business gives employees an extra 15 minutes during their breaks if they use the time to exercise and a large employer, the Oil & Gas Exploration Company, created a policy allowing employees to use work time to work out. Meanwhile, the local trust, the Kitzmiller-Bales Trust, donated \$10,000 for pedometers for community members.

Data illustrating that physical activity improves cardiovascular health is robust. The Wray results are in line with available research strongly suggesting that improving access to exercise facilities and encouraging activity through community-wide campaigns can increase activity levels and promote fitness among community residents. A review of the published literature conducted by Humpel et al. in 2002 concluded that "the availability of, and access to, cycleways, footpaths, health clubs, and swimming pools were found to be associated with physical activity." Linenger et al. (despite noted limitations in the study design) found improvements in fitness among military personnel when new equipment was added to a gym, a women's fitness center was opened and when policies allowed for release time for physical activity.² Based on a systematic review of published evidence, the Task Force on Community Preventive Services finds support for strongly recommending the "creation of, or enhanced access to, places for physical activity combined with informational outreach activities" to increase physical activity.3 The Task Force indicates that successful interventions include "creating walking trails, building exercise facilities, or providing access to nearby facilities"



SIGNS CHEER ON WRAY RESIDENTS AS THEY "WALK THE WORLD, TO THE MOON AND BEYOND" FOR A COMMUNITY-WIDE WALKING EVENT.

and that "many of these programs...offer health behavior education, risk factor screening, referrals to physicians...and support or buddy systems."

WISDOM FROM EXPERIENCE

Kramer strongly advises others to "start out with a collaborative group to get buy-in from a broader part of the community. Pick out stakeholders from the beginning so that you know what problems people face." She also adds that "this program had a professional evaluator, who helped guide the activities by gathering data through surveys and focus groups, and the information taught partners a lot about what was working and what wasn't. Don't duplicate existing efforts: we tried hard to improve existing things, and if we identified things that weren't there, then we worked to create and sustain those." And most of all, says Kramer, "make activity fun!"

LOOKING AHEAD

Although initial efforts were well funded and quite successful, WHI has found, not surprisingly, that grant funding comes and goes. Without continued funding, it became impossible to pay the coordinator who was instrumental in conducting individual health assessments, identifying community members at high risk of heart attacks and providing cardiac patients with appropriate referrals and support to continue rehabilitation. Community members find it difficult to pay for the services provided by the WRAC, so the WHI continues to explore reimbursement options that will allow for the provision of preventive services and make such services affordable to the community.

Despite these challenges, the multifaceted efforts WHI launched have resulted in a changed culture among Wray residents and new norms among local employers and businesses. Furthermore, their work lays an important foundation for future collaboration between major community-serving organizations. With momentum from the WHI and matching funds from Colorado's Department of Transportation and the City of Wray, a core group of residents and stake-

holders from the initial WHI are now working to build a new walking trail through Wray.

The new structures are also enduring assets to the community. The infrastructure changes, including the playground, basketball court, swimming pool, and updated walking path are all tangible results that continue to serve the community and provide support for physical activity among all Wray residents.

PROGRAM CONTACT

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ENDNOTES

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This is one in a series of 11 profiles that reveal how improvements to the built environment can positively influence the health of community residents. The examples illustrate how changes to the built environment can be particularly meaningful in communities that have historically lacked important features such as pedestrian infrastructure, services and institutions, or public art. Taken more broadly, the profiles demonstrate how improvements to the built environment have the potential to reduce health disparities.

The profiles were written and produced by Prevention Institute. Funding and guidance were provided by the Centers for Disease Control and Prevention's National Center for Environmental Health. It is our hope that these profiles will stimulate and inspire partnerships between community residents and practitioners from multiple fields and sectors to design solutions and take action to improve the built environment for the health and well-being of all.