

Integration of Environmental Stewardship and Local Economic Development to Enhance Community Health

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Environmental groups working to preserve natural ecosystems and groups working to enhance local economic development often find themselves on philosophically opposite sides of the negotiation table. Case histories of cooperative engagement are provided that serve as examples of how environmental stewardship is compatible with local economic development and community health.

Environmental and Community Health

Natural environments are complex ecosystems defined by the interrelationships of their physical, chemical, and biological components. Components such as topography, climate, biochemical processes in soils and streams, and the availability of cover habitat for wildlife are determinants of the diversity, abundance, density, and health of the organisms that inhabit a specific environment. These components are connected and interwoven but are continually changing [1]. A change in one component affects another and can alter the health of the ecosystem and the health of the populations in residence. The built environment, whether rural, suburban, or urban, is similarly connected to the health and the well-being of its residents [2]. The choice of residence is a determinant of lifestyle. Residents of suburban communities who work in cities may have more access than urban residents to the natural environment. However, because of extended travel times, they may be getting less exercise than urban dwellers who walk to work [3]. Affluence enhances the opportunity for a person to select where they live; however, for those in poverty, there is often little choice. The built environment and the collective social environment often have individual, family, and community health consequences. Exposure to indoor environments in impoverished communities may increase the risk of lead exposure, childhood asthma, and other health problems [4]. Safety concerns and the absence of outdoor parks and other green space, or the absence of continuous connected sidewalks, may contribute to inactivity and a lack of physical exercise, which has been associated with obesity [5]. The health-related effects are often further compounded by disparities in access to affordable health care and high-quality schools. The built environment is tied to community health

[4], and community health is generally linked with the economic viability of local economies.

Poverty, Obesity, Cardiovascular Health, and Exercise

The economic recession of the past few years has resulted in the greatest proportion of Americans living in poverty since 1994 [6]. In 2009, an estimated 43.9 million Americans were reported by the US Census Bureau to have incomes below the federal poverty level, including 20% of children. More than 14% of the US population is apparently struggling each day to put food on the table, to clothe their kids, and to keep a roof over their heads. In many communities, there is a food-availability paradox: people living in poverty have diminished food-purchasing power but are more likely to be obese. In neighborhoods with limited food-shopping alternatives, the local convenience store may be the primary venue for household food purchases [7]. Fresh produce and other healthy food products may not be readily available, and the grocery products selected may contribute to obesity. When "healthy" foods, locally grown produce, fruits, and locally prepared breads are more available, they are often more expensive and beyond the purchasing power of those living in poverty. More than 25% of the US population is estimated to have a body mass index above 30.0 and considered to be obese [8], and the percentage of obese adolescents has tripled during the past 25 years [9]. Obesity was estimated to have contributed to \$147 billion in increased medical costs and 10% of US deaths in 2008 [10].

Cardiovascular disease is the leading cause of death and reduced life expectancy in the United States. Although specific dietary recommendations seem to change frequently, obesity is a well-recognized risk factor for cardiovascular disease. Obesity is also a risk factor for diabetes, a disease that affects approximately 17.5 million people in the

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United States and may have an annual cost of more than \$170 billion [11]. Regular exercise can help with both weight maintenance and cardiovascular fitness. It builds strength, improves coordination, lowers blood pressure, helps reduce or maintain body mass index and weight, and has been associated with enhanced cognitive function and longevity [12]. When a person decides to exercise, the type of exercise and the place used for exercise is a personal choice. However, affluence again provides alternatives that may not be available to families living in poverty. Health clubs providing access to equipment for cardiovascular workouts are generally not available to economically disadvantaged families. When public natural environments (ie, green spaces) are integrated with the built environment, they are generally accessible without cost and are available to all as a community exercise resource.

Local Economic Development and Natural Environments

Jobs are needed to reduce poverty and to minimize the related disparities in education, personal lifestyles, and health. Employment opportunities are driven by local economic development and related job creation. Local economic development, however, requires construction of roads, railways, and airports, which facilitate the movement of people and goods.

Each development effort affects both the already built environment and the natural environment. Decisions made in the planning and design processes affect energy use or have a physically altering effect on natural ecosystems. The initial effects, during construction, that alter the physical environment and displace resident wildlife are usually quite visible. However, secondary cumulative effects of construction may be more systemically consequential. The effects of storm events may be heightened by the loss of impervious surfaces, as new driveways, parking lots, and the roofs of residential and commercial buildings are constructed [13]. The related loss of permeable surface area reduces the potential to mitigate nutrient input and storm-water volume and often results in soil erosion, disruption of natural riparian buffers, and increased sedimentation. Consequent changes in stream hydrologic characteristics and sediment deposition alter stream habitat, reduce the availability of spawning sites for stream fauna, and drive changes in species presence and diversity.

The natural environment, our heritage, fortunately has advocates whose advocacy moderates the actions of developers and works to minimize the impact of expansion of the built environment on the natural environment. Unfortunately, these core beliefs often place developers and environmentalists on distinctly different sides of the table. The clashing objectives of community groups that drive economic development and environmentalists often divide communities. Do we support the creation of jobs that can help reduce poverty, or do we protect fish, freshwater mus-

sels, foxes, snakes, and other wildlife? At times, construction efforts may disproportionately affect a group that might not have the resources needed to choose where they live, to influence whether construction will take place, or to guide the design of the project. The groups that realize the least benefit from the project may be those who are affected the most by it. Labels often define these opposing sides (eg, “developers” and “tree-huggers”). The arguments become rhetorical, heels are dug in, and groups supporting local economic development and those supporting environmental sustainability sometimes knock each other to apparent senselessness.

For the development-oriented community, the intransigence creates project delays, elevates costs, and slows progress. For the environmental community, it creates a sense of frustration and often hopelessness that the impact on natural communities is inevitable. But these groups can work together. When environmental stewardship is an inherent philosophy helping to guide project design, it can benefit community health by providing open-space alternatives for exercise and recreation. In this manner, mutual common interest in preserving natural habitat, on the part of environmentalists and developers, can serve a broader societal function and support public health. Sustaining natural environments and creating greenways, bike paths, and parks for recreation aid the overall effort to promote exercise and contribute to efforts focused on reducing the incidence of obesity and its related health care costs. Enhancing the quality of life in a community can also benefit local economic development. Although this type of common interest and cooperation is not universal within communities, there are numerous examples where environmental stewardship has been recognized to be compatible with local economic development, as well as with environmental preservation and community health.

Integration of Environmental Stewardship and Local Economic Development to Enhance Community Health

In the late 1960s, the degraded waters of the Cuyahoga River, which passes through Cleveland, Ohio, burned [14]. It was not the first time this happened—indeed, flames had been seen sporadically on the river since the 1860s—but it spurred community action. Public concern motivated civic response, and community groups and businesses accepted the challenge of cleaning up the river. Continued efforts to improve water quality in the river spawned efforts such as the Mill Creek Watershed Partnership, which has been working to improve conditions in the Mill Creek Watershed, a heavily urbanized area within Cuyahoga County that supports more than 85,000 people [15]. The partnership’s efforts embody the collective realization that environmental stewardship is compatible with economic development and community health. The initiative has been guided by the partnership’s stated goals, which include efforts to minimize flooding,

reduce soil erosion and contamination, enhance public education to improve the well-being of residents, stimulate local economic development, and improve the overall quality of life of area residents [15].

In Jacksonville, North Carolina, community and municipal recognition of the moral responsibility to restore Wilson Bay, a degraded cove in the New River, spawned the Wilson Bay Water Quality Initiative. The initiative and a related civic university and community partnership embraced the concept that environmental stewardship is compatible with local economic development. The partnership has worked to effectively improve water quality, restore wetlands, and reduce storm water input into the bay. The effort led to the development of Sturgeon City and a municipal nonprofit that guided the reclamation of a yard waste and road construction landfill into a recreational green space. The partnership has been working toward the conversion of the site of a decommissioned wastewater treatment facility into an environmental education center, Riverworks at Sturgeon City [16]. Boardwalks and pathways have been established to facilitate walks through the wetlands and park and to provide a walking connection to a local elementary school. The Sturgeon City Summer Institutes and related programs have engaged local youth in outdoor hands-on environmental learning programs, and civic volunteer activities and clubs (eg, Wilson Bay Keepers) have focused on sustaining water quality in the bay and the river.

In Wake County, North Carolina, in 2003 and 2004, local residents living within the Falls Lake Watershed expressed concern that the size of new homes being constructed, as well as the related impervious surfaces on those properties, was adversely affecting water quality in Falls Lake. Direct movement of water off of roofs and driveways was argued to be a well-recognized source of nutrient input and could lead to the eventual eutrophication of the lake and its loss as a water supply and a recreational resource. Concurrently, the county was already beginning to address the results of a study that indicated that 63% of its watersheds had already been negatively affected or degraded [17], as well as to respond to new total maximum daily load requirements set by the Environmental Protection Agency, which reflected regulatory compliance with the Clean Water Act. The county assembled a stakeholder committee, composed of 4 representatives of the environmental community and concerned county residents and 4 members representing land developers and builders. After 19 sometimes contentious meetings, the committee crafted a new residential development ordinance that embraced a commitment to sound environmental stewardship and the anticipated continued growth in residential construction needed to sustain economic development in the county. By working together, the committee created an ordinance that made a 180-degree conceptual change in how the county approached handling the design of storm water controls for new developments [18]. A traditional focus on peak flow during storm events and on

impervious surfaces was de-emphasized during the discussion, and the committee focused on reducing the volume of water discharged from development sites. The requirements accommodated low-impact design principles and focused on dispersing the water over protected natural areas, to support water infiltration and transpiration rather than concentrating it and directing it into drainage culverts and pipes. The new ordinance encouraged developers to leave portions of development property undisturbed, preserving natural environments, wildlife habitat, and opportunities for outdoor recreation.

Preserving our natural heritage is a societal responsibility and should be a priority as the built environment continues to expand and, at times, is redefined and redesigned. Jobs support economic solvency and are the main buffer helping to minimize the social injustices and unfortunate lifestyle consequences of poverty. Local economic development is needed to sustain job growth. However, in this postindustrial age, we need to continue to redefine the built environment in a manner that enhances social equity and supports the improvements in lifestyles needed to reduce obesity and the other diseases associated with poverty, as well as to support overall community health. Our collective community health benefits when environmental stewardship is considered a societal responsibility and is effectively integrated with plans for local economic development. NCMJ

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Eat Smart, Move More Health Tip



Choose to Move More Every Day

Physical activity is essential for all of us. Children, adults and seniors can benefit from moderate activity every day. Take a walk with a friend, take the stairs instead of the elevator, or work in your yard. Dancing works too and is great fun! Thirty minutes or more of motion for adults and 60 minutes for children on most days can help keep you in shape and feeling good. Can't find a 30 minute chunk of time? Break it up throughout the day.

For more tips on how to move more every day where you live, learn, earn, play and pray, visit

www.EatSmartMoveMoreNC.com

