Economic Benefits of Open Space

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OVERALL POINT (make sure to highlight in design): **Green infrastructure enhances economic vitality.**

Local governments of every size and in every geographic area share a common need: to increase the tax base to support important government services and programs. Because most local governments depend on property taxes for a majority of their revenues, every development proposal is scrutinized for its impact on the bottom line.

Proposals to "develop" land as open space are scrutinized just as are proposals to build subdivisions and shopping centers. Increasingly, proponents of preserving open space have successfully persuaded local officials that the benefits of *not* developing the land for homes and businesses are greater than converting the land to developed uses.

This chapter describes five of the ways in which our communities benefit economically from green infrastructure, and provides open space advocates with the information they need to marshal successful arguments for creating and protecting public open space.

1. **Green infrastructure increases property values.**

Many studies have demonstrated that the closer a residential property is to parks and open space, the higher the real estate market value. The increase in property value generates a private benefit to the owners that is recouped when they sell their property. In addition, because local governments collect taxes based on the value of property, increased property values generate increased local government revenue.

Most research on the impact of parks and open space on property values uses an approach that considers the increased value of homes in proximity to parks that results from the existence of that open space, much as other factors such as structural and environmental considerations and neighborhood characteristics affect a home's value.

A review of research on the effect of open space on neighboring home values showed that that proximity to a park or open space increased property values.[i] In general in these studies, the closer a home was to an open space, the higher the property value. The studies also found that the impact extended at least a quarter mile from a park. The magnitude of the impact varied across studies, depending on the characteristics of the open space (city parks, recreational trails, naturalized open space, etc.) and the characteristics of the neighborhoods surrounding these public spaces. Parks with major recreation activities (baseball, swimming, league soccer, etc.) generally had smaller incremental increases in value than did parks with passive uses (walking, picnicking, etc.). Although the magnitude of the increase varied, the review's author suggested a 20 percent increase in property values for homes abutting or facing a passive park as a reasonable rule of thumb.

Here in Wisconsin, a 2002 study analyzed the relationship between total assessed value of residential properties and proximity to parks for two parks, one in the Village of Jackson supporting "active" recreation, and the other in Germantown supporting primarily "passive" recreation (e.g., hiking, bird watching, picnicking).[ii] The study found that, for both types of parks, the impact of the park on property values was positive and increased the closer the property was to the park. The total aggregate assessed value for all residential properties within

1000 feet of the active recreation park was $1.5 million higher than it would have been without the park, generating approximately $30,000 in property tax revenue for the municipality because of the park. For the "passive" recreation park, this amount was $879,000, yielding $18,000 in tax revenue annually.

Two additional indicators of the impact of parks and open space on property values are the opinions of property owners and of real estate professionals. Studies confirm that property owners believe the value of their homes increases because of proximity to parks and open space.[iii] Evidence from real estate professionals, including realtors, developers, and appraisers, also indicates the positive impacts of parks on residential real estate. In a 1987 study in Washington state, real estate agents estimated that properties near but not adjacent to the Burke-Gilman trail would sell for an average 6 percent more than other properties. In Minnesota, appraisers and real estate agents "claimed that trails were a positive selling point for suburban residential property, hobby farms, farmland proposed for development, and some types of small town commercial property."[iv] Real estate agents near the Brush Creek Trail in Santa Rosa, California, believed that being near the trail would positively affect how quickly and for how much a home would sell. [v] About 19 percent said that homes on the trail would sell for slightly more; 61 percent said they use proximity to the trail as a selling point for the homes.

In Wisconsin, real estate agents who have listed properties along or near the Fox River Trail, which opened in 2001, have stated that the trail is a unique amenity that improves salability of homes and adds to property value. Most of the advertisements for these properties identify the Fox River Trail as an amenity. One agent suggested that the trail adds at least $5,000 to the property value. [vi]

With few exceptions, the findings of studies exploring the relationship between property values and open space lead to the conclusion that open space increases property values from 5 to 20 percent. Open space contributes to value by improving the quality of a home's view and improving the residents' access to outdoor recreation and nature. This property value increase benefits both homeowners, who benefit from public investment in open space through increases the value of their homes, and local government, which benefits because higher home values procure larger property tax revenues.

2. **Green infrastructure is cheaper to service than is residential development.**

A common strategy for municipalities looking to increase revenues is to spur development. More than two decades of research on the costs of community services demonstrate that residential development usually does not generate enough tax revenue to cover the costs associated with serving an increased number of residents. The cost of schools tops the list, but police and fire services, parks, libraries, and other community facilities also required added staff and space as the local population increases.

In more than 70 studies, American Farmland Trust (AFT) has found that the cost of residential development exceeds the revenues raised from the increased tax base. For every dollar of tax revenue generated from residential development in the 70 communities studied, service costs were $1.16. A "cost of community services" study conducted by AFT in Dunn Township, Wisconsin found the cost of services to residential development in that township to be $1.06 for every dollar of revenue generated from residential development. In Perry, Wisconsin, this amount was $1.20 per dollar of revenue, and in Westport, Wisconsin, it was $1.11 per dollar of revenue.[vii] Another study found that, for a group of Wisconsin cities, residential development cost $1.01 for every dollar of revenue.[viii]

In contrast to the costs associated with residential development, AFT found that "raw" (e.g. undeveloped) open space costs only about thirty-five cents to service for every dollar of revenue generated from such land. The caveat to these data, however is that they may be less accurate in the urban context. First, urban open space is typically owned either by a government unit or by a non-profit organization, rather than by private individuals, as may more often be the case in rural areas. As a result, in urban areas, open space may generate no direct tax revenue (only the indirect revenue discussed in the last section), whereas privately held open space in rural areas may generate tax revenue (albeit at a lower rate than if the open space were developed). Second, urban open space may be more costly to serve, requiring more intensive maintenance and security than rural open space. Even so, urban open space will often entail less cost that residential land. In the typical case described by AFT studies:

$1 revenue - $1.16 in service costs = $0.16 in costs to the local government

For green infrastructure land, the comparison is:

$0 revenue – *X* in service costs = *X* in costs to local government.

As long as *X* < $0.16 per dollar of revenue for residential development that otherwise would have occurred on the site, the green infrastructure costs less than residential development. To complete the analysis, the costs (*X*) also need to be compared to other benefits of open space preservation, such as water quality, wildlife habitat, flooding control, etc., *as well as* other secondary economic benefits that may be derived by the city as a result of green infrastructure (see points 3, 4, and 5, below).

In sum, the fiscal impacts of diverting land from being developed for homes and preserving open space likely to yield a net benefit *except for* (1) communities with excess capacity to provide community services and (2) specialized parks, such as zoos and botanical gardens that entail substantial development of facilities and/or maintenance costs.

3. **Green infrastructure provides cost effective alternatives to costly "gray infrastructure" approaches to stormwater, flooding, and water and air quality problems.**

> [SIDEBAR]: "Open space possesses natural system value when it provides direct benefits to human society through such processes as ground water storage, climate moderation, flood control, storm damage prevention, and air and water pollution abatement. It is possible to assign a monetary value to such benefits by calculating the cost of the damages that would result if the benefits were not provided, or if public expenditures were required to build infrastructure to replace the functions of natural systems." – Fausold and Lillieholm (get full citation from TPL Economic benefits paper)

Stormwater and *flooding* are among the most prevalent environmental challenges of urban communities. According to the US Army Corps of Engineers, the cost of flood damage averages $4.3 billion each year. Development has resulted in increased amounts of impervious surfaces, including roads, parking lots, and rooftops, that are unable to absorb water. As a result, we've developed engineered "gray infrastructure" systems to direct runoff into storage facilities, and ultimately into lakes, rivers, and streams. These engineered solutions are costly to design, build, and maintain, and typically cannot keep up with increasing demand.

Protected uplands are better able to retain precipitation, resulting in reduced flash flooding in nearby streams. Protected floodplains and wetlands act as natural "safety valves" for flooding, absorbing plugs of water and reducing the impacts of precipitation events on developed areas

further downstream. By not building on these areas critical to water retention, we can minimize property damage costs from flooding.

The Milwaukee Metropolitan Sewerage District (MMSD) is implementing the Conservation Plan to purchase land in the watersheds in which MMSD has the responsibility to control flooding. MMSD has proposed or implemented flood control projects costing $300 million. Antonio Riley, head of the Commission governing MMSD until 2003, explained the Conservation Plan as an effort to protect the district's investment in flood control projects. "If we don't do anything to preserve the natural areas along the waterways, we will be back to having residents' homes flooded in 20 years and will have wasted the money that is being spent today on important flood management projects."[ix] MMSD has budgeted $15 million to acquire land to soak up and hold rains before they reach waterways and, with the assistance of The Conservation Fund, has identified 7,065 acres that could provide 4.7 billion gallons of flood storage.

Water quality is another problem facing urban communities for which engineered "gray infrastructure" solutions are costly. Lakes, rivers, and streams are polluted by so called "non point source pollution," runoff that contains myriad pollutants from our lawns, roads, and parking lots. They also can be polluted more directly as a result of both current and historic dumping of contaminants. Today, 36 million Americans drink water from sources that violate EPA contaminant standards. The agency has estimated that $140 billion would be needed over the next 20 years to make drinking water safe.

New York City has elected to reduce avoid being forced to build a new filtration plant costs by instead purchasing lands to protecting its upstate watershed, and they have researched and demonstrated the cost-effectiveness of this decision. The city is protecting 80,000 upland acres in the watershed that provides the city's drinking water, spending $1.5 billion for the acquisition. This is compared to the $8 billion they would have spent building the filtration plant that would have been required had the watershed been developed, and the additional $300 million per year in operating costs to run the plant.[x]

Air quality. Air pollution in urban areas is a serious and growing problem. The burning of fossil fuels has introduced a steady flow of deadly pollutants into our atmosphere. Today, few urban areas meet national clean air standards. Green infrastructure—which includes urban forests—presents an opportunity to improve urban air quality while providing aesthetic and other benefits at the same time. Urban forests remove nitrogen dioxide, sulfur dioxide, ozone, carbon monoxide, and small particulate matter.

The tree canopy in Mecklenburg County, North Carolina, where the city of Charlotte is located, comprises 53% of the county's land area. This urban forest removes 17.5 million pounds of pollutants from the air each year, a benefit American Forests estimates is worth $43.8 million each year. Unfortunately, Mecklenburg County lost more than 22% of its tree cover between 1984 and 2001, a trend that is seen across the nation.[xi]

4. **Green infrastructure attracts business and increases sales.**

Today's businesses, no longer tied to traditional industrial centers, are free to shop for a location that provides their employees with a high quality of life, a factor that is becoming a primary reason a company will choose a location to site its business. Communities that want to attract new businesses and retain existing businesses need to invest in well-maintained green

infrastructure—including parks, trails, and open space—to maintain economic vitality. Economic development offices and local chambers of commerce need to consider the role of green infrastructure in creating the quality-of-life factors that will draw new businesses and employees and market these amenities. Although the affect of open space on business development and sales has not been quantified as carefully as the impact on residential property values, we know the impact is real and significant.

Today's businesses also look for locations with a pool of knowledgeable and talented workers. These workers want to live in places with a high quality of life, "places with a diverse range of outdoor recreational activities, from walking trails to rock climbing." "A survey of 1,200 high technology workers in 1998 by KPMG found that quality of life in a community increases the attractiveness of a job by 33 percent."[xii]

In the metropolitan Green Bay, the Fox River Trail has had a substantial positive effect on businesses.[xiii] Surveys of 33 businesses found that 12 business owners believed the trail had a positive or very positive effect on their business. Restaurants and convenience stores were more likely than other kinds of businesses to benefit, "but managers of an antiques shop and a sporting goods store also believed their businesses benefited from the trail." Since the study was completed in November 2001, two bicycle stores have opened along the trail and many more businesses are mentioning the trail in their advertisements to increase sales to trail users.

Tourism associated with green infrastructure can also improve a community's economy. Quality parks and open spaces contribute to the attractiveness of cities as magnets for tourism, although the magnitude of this impact needs to be quantified.

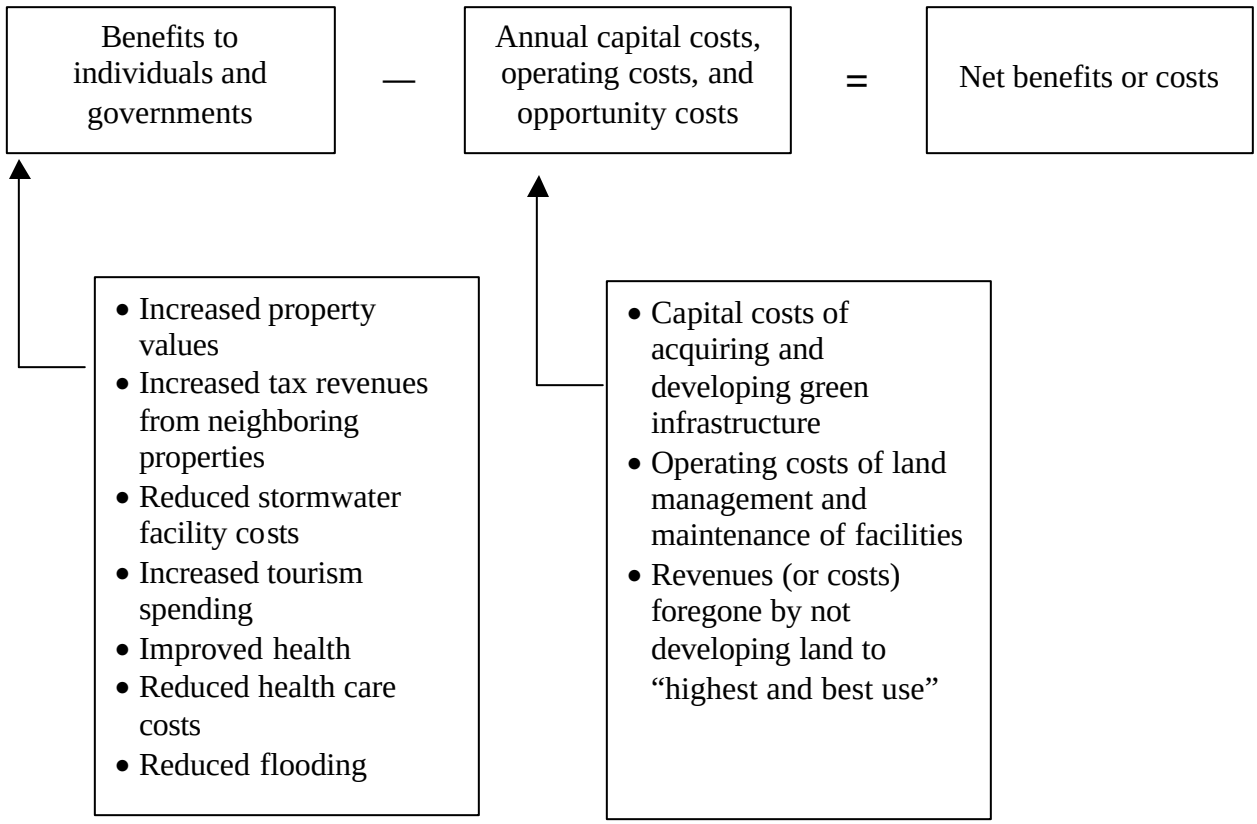
5. **Green infrastructure improves human health, which in turn improves the economic bottom line.**

Communities spend millions on health care each year for people with diseases and illnesses that could be remedied by increased physical exercise and improved air and water quality. Green infrastructure can provide trails and parks in which residents can engage in physical activity for recreation or their daily commute. Improvements in air quality accomplished through green infrastructure can improve cardiovascular health, reducing the incidence of asthma and other respiratory health problems. In addition, healthy people are better able to work and contribute to a healthy economy.

"Chronic diseases account for 7 of every 10 U.S. deaths and for more than 60% of medical care expenditures. In addition, the prolonged illness and disability associated with many chronic diseases decrease the quality of life for millions of Americans…. The estimated annual cost of obesity and overweight in the United States is about $117 billion."[xiv]

Green infrastructure enhances economic vitality. It increases property values, saves municipalities money relative to servicing residential development, provides cost effective environmental services, and reduces costs associated with environmentally-related chronic illnesses.

[full-page or large-ish SIDEBAR]: Calculating the net cost/benefit of green infrastructure



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