



Trees and Green Space Make Economic Sense

TREE CITY USA®
BULLETIN

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Of the many benefits provided by trees, their economic contributions to individual homeowners and entire communities are increasingly important.

More than ever, home and business owners, as well as civic officials, must be conscious of every dollar. In this bulletin, trees and the open spaces where they can grow are looked at through an economic lens. What we find has led to the title of this issue. Trees and the smart use of land in our communities do make economic sense — both in good times and challenging times.

“How do I love thee? Let me count the ways.” Perhaps the English poet Elizabeth Barrett Browning would not mind lending these words to our feelings for trees. The reasons that most of us value trees range from providing a home for birds to reducing the air pollutants that are believed to be leading to major climate changes. We love trees for sentimental reasons,

aesthetic reasons, and even spiritual reasons. But in these challenging times, it is important to also look at trees in the harsh light of economic analysis. As can be seen in the section about red fields, hard times may even provide unprecedented opportunity to make sound investments for more open space and landscaping that enhance property values and elevate the quality of life.

The pages that follow touch on some of the many practical contributions provided by trees. We include trees in our yards and businesses, along streets, and in parks and open spaces. Together, these special places and their vegetation make our communities better places to live — and they can be the catalyst for saving money and stimulating economic growth.



Arbor Day Foundation
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Preponderance of the Evidence

Few facets of urban forestry have been studied as much as the economic contribution of trees in a community. Even when weighed against the costs of planting and maintenance, trees make good sense as an investment. Here are just a few research-based findings about the economic value of trees.

Trees at Home and in the Community

While values will vary depending on climate and local conditions, the contribution of trees will still be significant. Here are some examples.



Summer Cooling Costs

Four strategically placed trees at a home in Sacramento, California ...

save up to 30 percent on energy costs each year after the trees gain some size.

If 1 million more trees were planted in Sacramento, \$10 million would be saved annually. In Houston, Texas, \$126 million in direct energy benefits are realized from its trees.

One well-placed tree ...

can reduce air conditioning costs alone up to 50 percent.

Reduced energy demand means reduced need for power plants, which can result in less air pollution.

Winter Savings

Trees used as windbreaks ...

can save 20 to 50 percent in energy used for heating.

Windbreaks can also control blowing snow, saving on plowing costs.

Property Values

Yard trees in good condition ...

may add 10 to 20 percent to the resale value of your home.

In Portland, Oregon, street trees in front of or near a home added an average \$8,870 to sale prices — and reduced time on the market.

Shaded Streets

Street trees by your home ...

beautify the neighborhood, provide safety from traffic, and add summer comfort — as well as contribute to resale value.

Shade protects asphalt surfaces, with the potential of reducing repaving costs by as much as 58 percent over a 30-year period.

TREES INCLUDED IN STREET CONSTRUCTION COSTS

Here is an example of a community that values its trees enough to include them and urban forestry personnel in every street construction project. In this way, trees are not overlooked or left to chance after completion of the work.

The City of Milwaukee, Wisconsin, employs two full-time urban forestry technicians to review construction plans and establish and enforce tree protection provisions on street and utility construction projects. All costs for required tree

replacement, preconstruction pruning, or special tree protection provisions are included in the construction budget. Additionally, if any public trees are damaged, contractors are assessed damages following Council of Tree & Landscape Appraiser guidelines. Milwaukee's commitment to tree preservation and replacement enables it to consistently maintain a 98 percent forested stocking goal (200,000 street trees) along 1,400 miles of paved streets.

Trees in the Business District

Considerable research on trees in business districts has been done by Dr. Kathleen Wolf at the University of Washington. She concludes, "Trees are a positive atmospheric for business districts. They create a retail mood that appeals to shoppers and visitors. Trees greet shoppers with a message of welcome even before entering a merchant's door." Her studies have found that when trees are present:

- Customers perceive merchants in a much more positive light. Trees send a message of care and service commitment.
- Customers tend to stay longer and visit more frequently.
- Shoppers say they are willing to pay higher prices — as much as 12 percent more.
- Visitors rate pedestrian-oriented pocket parks highly and prefer trees that are large with enclosing canopies.



Trees are good for business. Trees in a shopping district:

\$ Attract customers

\$ Lower utility costs

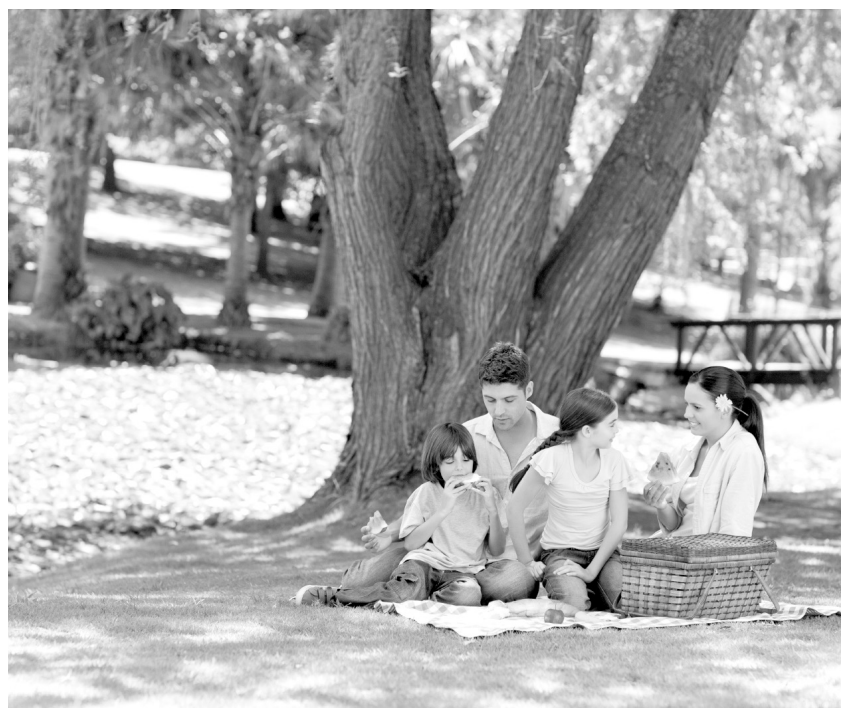
\$ Cool parking spaces

\$ Increase resale value

\$ Stimulate economic development

\$ Increase tourism

\$ Ease stress



Parks and Open Space

Americans value their parks and open spaces, most of which are enhanced with trees and other vegetation. Studies have shown that homebuyers prefer to be near such spaces and are often willing to pay 8 to 20 percent more for the privilege.

Other Values

In addition to the cash values described, trees provide other tangible environmental and social benefits. They save communities millions of dollars in stormwater interception and retention, clean polluted air, reduce stress and domestic violence, improve health, contribute to child development, and provide many other very real benefits. Many of these have been included in the Tree City USA Bulletins listed on page 8.

Red Fields to Green Fields

Times of economic recession may well be the best times to invest in open space and trees. During these times in the long-term cycles of our nation's economy, property values drop and the need for jobs goes up. Intervention to bring a return to better times is a daunting political challenge, but in the case of community improvement, the old saying is never truer — opportunity knocks.

What is a Red Field?

The term “red field” may be new to some in urban forestry. A more common concept is the “brownfield.” Both are a kind of property, but a brownfield is a piece of land that is difficult or impossible to expand, redevelop, or reuse because of the presence or potential presence of a hazardous substance, pollutant, or contaminant. In 1995, a program was initiated by the Environmental Protection Agency to address the issue of brownfields and assist communities in cleaning them up and converting them to higher uses.

Red fields sometimes include brownfields, but go beyond contaminated land. A red field is abandoned and underutilized property. Sometimes these areas are referred to as distressed real estate. Examples

include vacant strip malls or big box stores, blighted commercial corridors, vacant housing developments, and similar parcels.

“Through smart development, bad assets can be turned over, property values can climb, and a sufficient return on investment is generated to ensure a safe, vibrant recreation site.”

—Kevin Caravati
Senior Research Scientist at
Georgia Tech Research Institute



A goal of transforming red fields is job creation and a more vibrant economy, as well as additional trees and green space. Income from a partial sale after transformation can be used to endow support for green space maintenance.

A Transformation is Proposed

Red fields, especially in times of recession, offer opportunities that make good economic sense. A leader in the concept of converting red fields to green fields is Kevin Caravati, a senior research scientist at Georgia Tech Research Institute. He says, "Red field properties have negative value civically, environmentally, and economically." He proposes that cities take advantage

of low market prices and transform the land partially to green space but with some held for sale and appropriate development when economic times improve. Mickey Fearn of the National Park Service has said this "could be America's best idea." The concept has also been supported by a wide range of city officials and business leaders. At an Arbor Day Foundation Partners in Community Forestry Conference, Kevin presented this example of what is possible:



An example of existing distressed property

100-acre stressed real estate (mall site)	
Depressed real estate price (\$300,000/acre)	\$30 million
Secure the site, deconstruct, redesign	\$5 million
Convert 55 acres to green space with trees	\$15 million
Total Investment	\$50 million
"Warehouse" 45 acres until market improves	
Sell 45 acres (\$1.4 million/acre at 5-year historical price)	\$63 million
Total Profit	\$13 million



After the first phase of transformation



In the final phase of a red fields project, a portion of the property is sold for mixed-use development.



Green space and commercial development cannot only be compatible but complimentary. Red field projects can help bring these benefits to America's communities.

More Examples of Red Field Action

In communities throughout the country there are large blocks of financially plagued land and commercial buildings in foreclosure. Civic leaders search for ways to rescue the properties and eliminate blight. Jobs, too, are always at the top of the agenda. In looking for a solution, Georgia Institute of Technology has been a leader. Georgia Tech researchers have used financial models provided by the U.S. Department of the Interior and data reported by the Federal Reserve to quantify the economic, health, social, policy, and engineering impacts of transforming red fields into green space. They have collaborated with numerous cities to assess the supply of distressed commercial real estate and determine the best approaches for turning some of it into green space and greater prosperity.

Here are some examples of recommendations resulting from Georgia Tech and its collaborators:

MIAMI



A shortage of parks and the need for better transit systems are problems that could be solved using the red fields concept and public-private partnerships. Recommendations of Georgia Tech researchers suggest that more than 14,000 jobs could be created in Miami-Dade County, \$58 million added to the property tax base per year, and 1,625 acres of new parkland provided, including recreationally and ecologically important greenways.

DENVER

Each area of distressed property offers unique challenges and opportunities. In Denver, for example, the city's master plan defines a vision for five drainages of the popular Gulch Park area. Dozens of small parks and pathway systems have already developed and the plan calls for additional land acquisition. Some of this land is in the heart of Denver's most distressed residential property. Approximately one in every four homes within a quarter mile of the system has experienced some form of foreclosure in the recent past. Crisis or opportunity? According to the Georgia Tech researchers, red field transformation can make it possible for the master plan to be implemented to its fullest potential. Additional recreation and eco-benefits can be provided and adjacent land values will be elevated.



According to one case study, a \$2.5 billion investment in Denver created:

- ✔ 6,650 acres of new parkland
- ✔ 30,000 jobs over 6 years
- ✔ \$5.1 billion in economic impacts

From blight to parkland: Red field investments can contribute to making livable cities like Denver even greater places for residents and businesses, providing social, environmental, and economic benefits.

Smart Growth Can Save Dollars

When communities allow green space for trees and people, quality of life is elevated, and in some cases, costs to taxpayers can be reduced.

EPA's Smart Growth

The Environmental Protection Agency (EPA) in partnership with federal housing and transportation agencies and local governments has demonstrated the multiple benefits of planning for green space. In promoting its Smart Growth program of grants and other assistance, the EPA states that it “helps communities grow in ways that expand economic opportunity, protect public health and the environment, and create and enhance the places that people love.”



Atlantic Station

Atlantic Station in the heart of Atlanta, Georgia, is a model of smart growth. Transformation of this 138-acre brownfield almost did not happen. Its redevelopment required a bridge to link it with transit opportunities, and Atlanta had not met Clean Air Act standards. Therefore, the bridge would have been prohibited under EPA regulations. However, further study found that redevelopment would actually reduce air pollution as well as provide other environmental benefits. The bridge was permitted, and today, Atlantic Station is a thriving, mixed-use community near the heart of the city. Instead of long-distance commuting, residents can walk, bicycle, or take mass transit to work or other features of downtown Atlanta. The site is pleasantly landscaped with trees, open space, a small lake, and even a dog park.



Once the site of a vacated steel mill, Atlantic Station eliminates long commutes, reduces air pollution, and provides pleasant urban living.

Historic Fourth Ward Park

The English have an apt phrase for the moribund and abandoned spaces that often mar urban neighborhoods: waste ground. These rips in the urban fabric — which around here inevitably become homeless encampments, kudzu thickets, and/or illegal dumps — are dispiriting even in a district experiencing healthy and certain resurgence, such as Atlanta's Old Fourth Ward, where I have lived since 1992. They stand as reminders of blight's tenacity. They're like skipped beats interrupting an otherwise vigorous rhythm. But the construction of Historic Fourth Ward Park ... shows how waste ground can be transformed into a zone of connection.

— Jonathan Lerner,
writing at ArtsCriticATL.com

The transformation of Historic Fourth Ward Park from blight to 17 acres with a lake, walkways, playgrounds, and open space not only improved quality of life and a place for trees and urban wildlife, it also helps prevent flooding — and it saved a bundle of money. The lake is the centerpiece of this new park and helps the city meet federal requirements. Originally, to prevent flooding in the City Hall East section of the city, a stormwater relief tunnel was planned. Instead, an innovative park was designed, private and public organizations along with neighborhood residents partnered up for land acquisition, and the project cost \$15 million less than the traditional pipe method of flood control.



Atlanta's Historic Fourth Ward Park was dedicated in 2011 and stands as a monument to what cooperation and innovation can do in providing green space and saving money.

HOAs and Other Opportunities

Tree boards and other friends of urban forestry can have significant impact by highlighting the economic benefits of trees in the community. Churches, schools, and other institutions maintain thousands of acres of urban land, often with little or no guidance about the importance and care of trees.

Homeowners Associations (HOAs), for example, have been estimated to cover approximately 20 percent of the entire residential area of Chicago. These organizations are growing in popularity, especially in new developments. Their purposes include public safety and ensuring that standards are met that keep property values high. They often also provide actual landscape management services. The rules and recommendations of an HOA have enormous potential for providing and caring for green spaces such as rights-of-way between sidewalks and streets, small parks, and well-landscaped private lots.

The opportunity for tree boards, urban foresters, and others with an interest in trees is to help provide technical expertise and guidance. Too often, the number and kinds of trees, as well as tree health, take lower priority than general appearance, including flower beds, turf areas, and water features. The best of tree management practices should be brought to the attention of neighborhood HOA officers as well as landscaping and legal firms that are often hired to carry out management functions. If all were more aware of the economic benefits of trees, it would make a major contribution to overall urban forestry. For examples of two educational efforts being directed toward HOAs, be sure to visit arborday.org/bulletins.



Homeowners associations are growing in popularity and have huge potential if residents and managers are made aware of the economic importance of trees and proper tree care.

FOR MORE INFORMATION ...

Visit arborday.org/bulletins and click on Bulletin No. 61 for links and other additional information related to this issue.

PHOTOS COURTESY OF: Dan Burden, Glattling, Jackson, Kercher, and Anglin (page 3); Miami-Dade County Red Fields to Green Fields Project, Miami-Dade Parks, Recreation, and Open Spaces Department (page 5); Miami-Dade Parks, Recreation, and Open Spaces Department (page 6, top); Red Fields to Green Fields Case Study: Denver (page 6, bottom); U.S. EPA Smart Growth (page 7, top left); John Grimsley (page 7, bottom left); Van Hall Creative Services (page 7, right).

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