

Appendix

(1) Making the Economic Case for Greenways in New Haven, Lisa Fernandez, Consulting



Making the Economic Case for Greenways in New Haven

Greenways—corridors of protected open space managed for conservation and recreation--can be financial engines for any city and significant levers for private financing. From other cities' experience embracing greenways, it can be shown that for every public dollar spent on protecting open space and establishing and maintaining trails, more can be produced in private support and city taxes. Greenways generate economic activity that can be a boon to cities seeking ways to revitalize. Users generate local spending on food, equipment and lodging. Building and maintaining trails bring jobs in construction and maintenance. Trails and greenways help boost the perceived quality of life in places they run through, helping to attract new businesses, residents and tourists.

Greenways are a form of open space, and New Haven is well blessed in this regard. The city has 2,309 acres of officially designated open space in the form of parks, fields and trails. This is a large amount relative to other major (over 100,000 population) cities in the state. New Haven has the least density of people for the amount of open space in the city—about 54 people per open space acre, compared to 57 for Waterbury, 85 for Stamford, 100 for Hartford and 162 for Bridgeport. New Haven also boasts the largest percentage of open space of *any* CT city, regardless of size (17%), and 70% more open space than any other major city in the state. Bridgeport, the only city in CT bigger than New Haven in population, has less than half New Haven's proportion of open space (8%).ⁱ

Of paramount concern in New Haven is not then the endowment of open space itself, but access to it and its utility to the city's residents. The challenge in New Haven is to ensure that the city's already generous amount of open space is used to improve the local quality of life and optimize economic returns. One goal is to strategically link New Haven's open space so as to form greenways. The City is already rebuilding the former Farmington Canal and Railway as a linear park. Many other greenways exist in patches and connecting them is a vision of many New Haven citizens. These include the Harbor Trail, the Quinnipiac River Trail, and the West River Trail, among others. What can be learned from other cities' experience building greenways that may be relevant for the "Elm City?"

There are many dimensions to the economic benefits of greenways, and many ways of measuring them (see Box on measuring techniques). This report does not directly measure potential or actual economic benefits for New Haven. Rather, it summarizes the conclusions of studies conducted in other places that are relevant here. For greenways in cities, the financially-quantifiable benefits can be broken down into five categories. Briefly, these are that greenways:

- *Increase property values.* Usually, residential property values are higher close to greenways, relative to prices for similar homes further away.
- *Improve human and environmental health.* Recent studies show that access to greenways can help improve the health of residents who use them. Studies also show that air and noise pollution will diminish as car trips are replaced with bike or walking trips.
- *Stimulate commerce.* Greenways can attract commercial investment, often in the form of retail stores catering to the needs of the people using the trail or open space. This process can aid urban revitalization.
- *Attract corporations.* Corporations are increasingly citing greenway access as a factor in company relocation decisions.
- *Improve the quality of life.* Lastly, though less quantifiable, studies have demonstrated that greenways are commonly sensed to improve the overall quality of life in neighborhoods through which they run.

The remainder of this report provides an overview of the literature documenting each type of benefit.

1. Property Values

Although property owners bordering or near a proposed trail often fear lowered real-estate values and increased crime, usually the opposite is true.

In Pinellas, Florida a rail-trail passing through several struggling urban areas helped improve the retail climate adjacent to the trail. Residential and commercial property next to the trail became more marketable. Proximity to the trail has now become a selling point. Higher prices for property lead to higher tax receipts. The trail, built largely with federal transportation funds matched locally, has leveraged private investment, both in direct support of the amenities for the trail and indirectly in improvements or location of establishments on or near the trail.ⁱⁱ

In a study measuring property values adjacent to the Monon Rail-Trail, the City of Indianapolis' Department of Parks and Recreation found that 64-66 percent of property owners living near the trail felt that it increased the resale value of their property and made it easier to sell. Only 5-10 percent of owners felt the opposite.ⁱⁱⁱ

In a 2002 survey of recent home buyers sponsored by the National Association of Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices.^{iv}

Realizing the selling power of greenways, developers of the Shepherd's Vineyard housing development in Apex, North Carolina added \$5,000 to the price of 40 homes adjacent to the regional greenway. Those homes were still the first to sell.^v

This trend is now being demonstrated in New Haven. Monterey Homes is a relatively new affordable-housing complex adjacent to the only finished section of the former Farmington Canal Rail-Trail in the city. The developer has decided to extend the complex further along the trail. The new units will be for sale, instead of rental only, because of strong interest among prospective buyers.^{vi} A few miles north, another developer is proposing a condominium complex adjacent to the finished Rail-Trail in northern Hamden. Capitalizing on the proximity of the trail is quite explicit. The proposed name of the development is "Trailside Condominiums."^{vii}

A study conducted in Denver, Colorado found that the proximity of trails close to homes is an aid, rather than a detriment in selling real estate. In a survey of local real estate agents, all felt that proximity to trails would either increase the value of a home or have no effect.^{viii} A similar study conducted in Maryland regarding the impacts of the Northern Central Rail Trail corroborated the Denver findings. A nearby trail is a selling point for a home—it helps owners sell their property faster.^{ix}

Two studies in cities quantify the oft-documented perception that real estate values increase near greenways. In Seattle, property near the trail sold for six percent more, though lots directly adjacent sold for only a one percent premium over the average in the area.^x In Oakland, California the greenbelt around the lake at the city's core was found to add \$41 million to nearby property.^{xi}

Another facet of real-estate value is perceived risk of crime. Often property owners perceive that a trail or greenway will increase crime rates. However, according to the RTC, crime rates are at least three orders of magnitude *smaller* on urban-rail trails than in the general population.^{xii} Undesirable activity is more likely to occur on abandoned and overgrown railroad corridors than on well-maintained, actively-used corridors with clear rules.^{xiii}

2. Human Health and Environmental Quality

Urban open space that creates opportunities for physical fitness such as walking, biking and sports can reduce health costs from sedentary syndromes such as obesity and diabetes.^{xiv} In New Haven, linear parks

and trail systems such as the Farmington Canal and Railway, the proposed Harbor Trail and the Vision Trail encourage safe, pedestrian means of doing errands, getting to work and going to school. Such utilitarian exercise which is incidental to daily life derives from dense-development design principles that the ‘smart growth’ anti-sprawl, pedestrian-friendly movement is trying to promote. Older cities like New Haven have since their inception contained mixed-use residential neighborhoods where shopping, schools and residents’ workplaces are all within close proximity. Such cities are in the perfect position to be leaders of the ‘smart growth’ trend.^{xv} Over the next 25 years, real estate values in places with good walkability are expected to increase more than in traditional suburban car-oriented developments.^{xvi} (see also the box on Walkable Communities).

The National Center for Disease Control (CDC) now explicitly recommends creating access to trails and promoting their use to increase the level of physical activity in a community to increase health. The CDC cites scientific evidence demonstrating a connection between the provision of access to places for physical activity in a community and the level of physical activity by its residents.^{xvii} The State of Connecticut also encourages trail usage in its Cardiovascular Health Strategic Plan.^{xviii}

Greenways and trails can indirectly improve human health by encouraging people to avoid making car trips. There are measurable improvements in air quality and quality of life from trips diverted from a car to a bicycle. One study calculated that a 2.5-mile trip taken on a bike rather than in a car through an urban area during rush hour has a value of \$3.58. Costs avoided include air and noise pollution as well as road, parking and gas. It is estimated that an urban trail may garner savings of up to \$450,000 a year from single-occupancy vehicle trips avoided.^{xix}

How to evaluate the economic impact of greenways

To measure the economic effects of environmental projects like greenways, two types of analyses are available, both of which seek to ascertain users’ willingness to pay (WTP) for the project, based on the recreational or other value users expect to derive from it.

1. Benefit-cost analysis (BCA) helps to evaluate whether a project is worth doing. Do the benefits exceed the costs?
2. Economic Impact Assessment (EIA) measures the overall effects of a project on income and employment, investment and spending in the economy. EIA is a tool primarily of specialists equipped with input-output models with multipliers for estimating levels of use and spending and will not be further detailed here.

BCA techniques include:

- *Travel-cost method (TCM)*. Premised on the idea that the value of recreation is at least equal to the costs incurred in traveling to and using the greenway. WTP is imputed from data on distances traveled and expenses incurred by users of a site. TCM does a good job of estimating “use value” of a project, but it does not capture the value people may place on it who never expect to take advantage of it.
- *Hedonic pricing method*. uses observed prices paid for property next to environmental amenities to estimate their total market value. The technique assumes that real estate prices capture the value of environmental assets and the buyer’s willingness-to-pay for each feature of the property. Data sets including price, details of the property and environmental features are rare and usually must be custom-gathered, making this an expensive approach.
- *Contingent valuation (CV)*. Surveys are conducted querying a statistically-robust sample of the target population about its WTP for the project. An estimate of the value of the project is derived from the survey, and generalized to the relevant total population. The technique is controversial because people are often observed to state a higher WTP than is observed. In other words, survey respondents over-estimate actual WTP.
- *Unit day value method (UDV)*. This technique is cheaper and thus more popular than any of the above. EDV assigns dollar values to the type of experiences provided by a project, projects the number of users, and multiplies the users times the dollar value of each experience to obtain total project value. The dollar values assigned may be derived from TCM and CV studies, but because they are not directly obtained from potential users of the site in question, the values are considered more suspect. The values assigned can also be quite subjective, depending on how a particular experience is rated by the analyst inputting values. Like TCM, UDV only measures use value. The approach is most robust when applied to recreational projects.

From "Economic Considerations in Planning Urban Greenways: A Brief Review." Center for Urban Policy and the Environment, School of Public and Environmental Affairs, Indianapolis, IN. June 1998.

3. Commercial growth, urban revitalization

There is a growing body of evidence that trails and greenways help improve local economies. The most obvious form of dollars flowing into a locality from a greenway include recreational equipment sales and rentals as well as food, entertainment and lodging receipts from increased urban tourism. But greenways can also be "the impetus for kick-starting a stagnating economy" in less obvious ways, including job creation.^{xx}

In Maryland, the 1993 budget to provide the Northern Central Rail Trail was less than \$200,000. The Rails-to-Trails Conservancy (RTC) estimates that the added tax revenue to state coffers directly from the trail exceeded \$300,000 that same year, and that the trail provided 264 jobs to the state. Moreover, RTC estimates that the value of goods purchased because of the trail exceeded \$3 million.^{xxi}

Near the Maryland trail, the Heritage Trail in York County, PA, has also been good for business. At least six new businesses opened along the trail once construction began. Existing businesses reported increased sales. Economic growth is expected to continue.^{xxii}

Other examples of trails providing documented financial revenue streams:

- A rail-trail near Dallas, Texas attracts approximately 300,000 people annually and generates local revenues of \$2 million.
- Visitors to Ohio's Little Miami Scenic Trail spend an average of \$13.54 per visit just on food, beverages and transportation to the trail. In addition, they spend an estimated \$277 each year on clothing, equipment and accessories to use during these trail trips. Multiply these figures by the estimated 150,000 trail users per year.
- The Mispillion River Greenway in Milford, Delaware, is credited with inspiring downtown reinvestment and a net gain in new businesses, with more than 250 people now working in a downtown that was nearly vacant ten years ago.^{xxiii}

A widely cited study conducted for the National Park Service estimates that the economic activity derived from user expenditures on an urban trail was \$3.97 (1992 dollars) per user. Overall for the urban trail, combined with two rural trails, the economic activity was calculated at \$1.2 million a year.^{xxiv}

The impact of trails in cities can be inspiring. Pittsburgh Mayor Tom Murphy cites the rise of rail-trails in his city as a significant factor in the revitalization of the city's waterfront area that had been an area of industrial blight. He testified to Congress that the rail-trails stimulated small business creation, improved residential neighborhoods, and enhanced the quality of life in the city. The corridors created by the rail-trails also provided needed secure rights-of-way for power lines.^{xxv}

Providence, RI is a city similar to New Haven in many ways, with a strong industrial history located on waterfront, followed by a bust in the manufacturing sector and subsequent urban blight. Like New Haven as well, Providence is also home to several colleges and universities. The city has embraced canal-rail-trails as a centerpiece of its successful renaissance. Providence was chosen as the host city for the Rails-to-Trails International conference on trails and greenways in June 2003.

4. Corporate location decisions

Quality of life factors are among the most important in corporate relocation decisions. Greenways can contribute significantly to community quality of life.

The Calvert Group in Bethesda, Maryland is located near the Capital Crescent Trail. The company encourages their employees to commute along it by offering to buy them running shoes or a bike.^{xxvi}

In November, 2001, Ruby Tuesday Inc. moved its national headquarters from Mobile, Alabama to a site near Knoxville primarily due to its proximity to a Greenbelt and trail system. Ruby Tuesday's uses the community greenway as an amenity for new employees coming to Maryville for training. These new employees are provided a bicycle when they arrive and can travel between the corporate offices, lodging, restaurants, and training facilities along the trail.^{xxvii} The presence of greenways were also decisive in Caterpillar Inc.'s decision to relocate to Morgantown, NC and the Reichold Chemical Company's transfer of 500 jobs to Raleigh-Durham NC.^{xxviii}

A developer in Indianapolis demanded, as a condition of building a new complex containing a trail network, that the city guarantee linkage to the larger trail system it is building.^{xxix}

5. Community quality of life

As seen above, the two most tangible economic impacts of greenways are in business activity and residential real estate values. The increased value of trails to both these categories has been quantified in several studies. In addition, emerging research on the connection between trail accessibility, physical activity levels and health demonstrates another benefit of recreational greenways.

There are many other intuitive benefits that have not to date been quantified in economic terms. These include the intrinsic environmental and recreational value of conserving open space for animal habitat and for the conservation of nature and human recreation. One example of an environmental benefit that is quantifiable but has not yet been documented precisely is the cooling effect of a greenway's foliage canopy. Through urban areas, greenways can reduce the heat island effect of pavement, which significantly raises surrounding temperatures.^{xxx}

The social capital associated with greenways and open space, which encourage more human contact among residents who are out of their cars, can help solidify a positive sense of community. Providing quality open space in low-income, inner city neighborhoods increases residential vitality, which can then lead to greater economic vigor in the area.^{xxxi}

The Benefits of Walkable Communities

Pedestrian-friendly infrastructure is a good investment, according to real estate research showing that walkable neighborhoods will experience the fastest increase in real estate values over the next quarter-century.

Property values increase when traffic noise, traffic speeds and vehicle-generated air-pollution are decreased. Property increased in value by about 20% when traffic speeds in the adjacent roadway were reduced by 5-10 mph. A similar increase in value was documented when traffic restraints reduced the number of cars on adjacent residential streets.

Increasing walkability can increase the prosperity of downtowns. Retro-fitting downtown Lodi, California with wider sidewalks, street trees, lighting, benches and other amenities dropped vacancy rates by two-thirds and increased downtown sales tax revenues by 30%.

"New Economy" workers are knowledge-driven and service-oriented. They will thrive best in compact, mixed-use city centers that promote accessibility and networking at the pedestrian level. The dynamic interaction upon which this economy relies needs places where people can walk, work, eat and play without getting in a car.

From "The Economic Benefits of Walkable Communities." Local Government Commission, Center for Livable Communities. www.lgc.org.

Greenways create learning opportunities in an 'outdoor classroom' setting.^{xxxii} In Portland, Maine, another post-industrial New England harbor city like New Haven, a trail-building project partially funded by

AmeriCorps created a natural curriculum for elementary and middle-school students. It brought city kids outdoors and got them involved in and talking about everything from politics, to pollution, preservation and surfacing materials.^{xxxiii}

*

It is possible to link environmental restoration with healthy recreation and urban revitalization. New Haven is in a pivotal position to lead the way given, above all, its rich endowment of open space.

In addition, the city's mixed-use waterfront has tremendous potential for combining industrial infrastructure with open space and pedestrian-friendly corridors that can serve as connectors from the historic port and riverfront, to the retail and government center of the city, outwards to the suburbs and countryside beyond. Re-development of New Haven's waterfront "brownfields" (previously used urban and/or industrial land) for open space and new businesses is key in this effort. The fact that park land already exists side-by-side with industry in the waterfront area holds some promise.^{xxxiv}

Finally, New Haven embraces a rich array of environmentally interested parties, from academics at its many colleges and universities, to activists. These groups have already demonstrated an ability to collaborate and work with New Haven's fourth great asset: a responsive and visionary municipal government.

ENDNOTES

- ⁱ Trust for Public Land, “Connecticut Profile,” 2002.
- ⁱⁱ A. Garvin, G. Berens et al. *Urban Parks and Open Space*. ULI-the Urban Land Institute, 1997.
- ⁱⁱⁱ Peter Harnik. *The Excellent City Park System*. The Trust for Public Land, 2003.
- ^{iv} Rails-to-Trails Fact Sheet, “Economic Benefits of Trails and Greenways.” Darren Smith, contact.
- ^v *ibid*
- ^{vi} David Barone, New Haven City Plan Department, personal communication, June 12 2003.
- ^{vii} Town of Hamden, CT, public hearing(s), May 2003.
- ^{viii} ***The Effect of Greenways on Property Values and Public Safety***, The Conservation Fund and Colorado State Parks’ State Trails Program, March 1995 (summary at <http://www.broward.org/greenways/pdf%20files/colorado%20study.pdf>) in Rails to Trails Conservancy summary “Property Values in Relation to Adjacent Open Space Facilities.”
- ^{ix} ***Analysis of Economic Impacts of the Northern Central Rail Trail***, prepared for Maryland Department of Natural Resources by PKF Consultants, June 1994 (see <http://ntl.bts.gov/DOCS/430.html>) in *ibid*.
- ^x Seattle Engineering Dept, 1987 in *ibid*.
- ^{xi} Brabec in S. Lerner and W. Poole, “The Economic Benefits of Parks and Open Space: How land conservation helps communities grow smart and protect the bottom line.” The Trust for Public Land, 1999.
- ^{xii} T. Tracy, H. Morris. “Rail-Trails and Safe Communities: the experience on 372 trails.” Rails-to-Trails Conservancy, 1998.
- ^{xiii} S. Doherty, “Rail-Trails and Community Sentiment,” Rails to Trails Conservancy, 1998.
- ^{xiv} Harnik 2003.
- ^{xv} M. Moore. The way cities and suburbs are developed could be bad for your health. USA TODAY, nd.
- ^{xvi} Center for Livable Communities. “The Economic Benefits of Walkable Communities,” www.lgc.org, nd.
- ^{xvii} CDC, “Promoting Physical Activity Through Trails.” www.cdc.gov/nccdphp/dnpa/physical/trails.htm
- ^{xviii} CDC, “State Profile—State of Connecticut Public Health.” apps.nccd/cdc.gov/DNPAProg/StateProfile
- ^{xix} Litman, 1999 and City of Seattle, Wash in H. Morris, “Trails and Greenways: Advancing the Smart Growth Agenda,” RTC, 2002.
- ^{xx} Rails-to-Trails Fact Sheet, “Economic Benefits of Trails and Greenways,” June 2003.
- ^{xxi} ***Analysis of Economic Impacts of the Northern Central Rail Trail***, in RTC personal communication, March 6, 2003. Also Harnik, 2003.
- ^{xxii} “Communities Benefit! The Social and Economic Benefits of Transportation Enhancements.” National Transportation Enhancements Clearinghouse (NTEC). <http://www.enhancements.org>
- ^{xxiii} RTC Fact Sheet, June 2003.
- ^{xxiv} R.L. Moore, 1992 in H. Morris, 2002.
- ^{xxv} Testimony of Pittsburgh Mayor Tom Murphy before the Subcommittee on Commercial and Administrative Law of the Judiciary committee, June 20, 2002.
- ^{xxvi} Rails to Trails Conservancy summary, March 2003.
- ^{xxvii} *Ibid*.
- ^{xxviii} Lerner and Poole, 1999.
- ^{xxix} *ibid*.
- ^{xxx} H. Morris, 2002.
- ^{xxxi} Lerner and Poole 2002, p. 21.
- ^{xxxii} Harnik, 2003.
- ^{xxxiii} Laura Newman, Education Coordinator for Portland Trails, personal communication, April 2003. E. Hensley, “Growing Up with Trails,” Rails to Trails Magazine, Spring 2003.
- ^{xxxiv} The economic benefits of brownfield redevelopment have been demonstrated in other cities. For example, in Buffalo a greenhouse on a steel mill site provides 175 jobs producing hydroponic tomatoes. In Emeryville, CA an office, hotel and residential complex on a former industrial site projects more than 10,000 new jobs (Lerner and Poole, 1999).

PRINCIPAL CONTACTS

Kate Bickert, Vice President for Field Operations, Rails to Trails Conservancy
Colleen Murphy-Dunning, Director, Hixon Center for the Urban Environment, Yale School of Forestry and Environmental Studies
Nancy Kafka, Urban Program Director, Trust for Public Land, New England
Mary Nemerov, Development Manager, Trust for Public Land, Connecticut Office
Laura T. Newman, Education Coordinator, Portland Trails
Bill Wilkinson, National Center for Bicycling and Walking

Important contacts for future work:

David Leland, Urban Land Institute (referred by Bill Wilkinson, who says he is a champion of urban redevelopment and knows smart growth from the business side)
Ann Foster Wallace, Consultant, author of "A Scan of Smart Growth Issues in New England," June 2002.