

Chapter 9: The Economics of Greenways & Trails

The creation of a system of greenways and trails will require a significant investment from various sources, whether it be the private contributions of land or construction from private development actions, local capital improvement programs (CIP), or state and federal tax dollars procured from locally collected sales taxes. The communities that have undertaken these types of programs have had varied reasons for doing so: creation of a healthier lifestyle, attraction of businesses to the area, or to improve the transportation system by increasing options for users making short or moderate trips.

This chapter focuses on positive economic impacts from greenway and trail investments and how investments improve the tax base and business community. The section also summarizes the strategies that Buncombe County should emphasize to ensure a maximum return on investments in trail and greenway infrastructure. Finally, some key statistics are provided that will allow the estimation of the impact of trails on the local economy via studies that have utilized robust methods to arrive at estimates of benefits.

Several agencies and municipal governments have attempted to estimate economic impacts for existing greenways, trails that don't yet exist and alternatives analysis for different greenway design or route options. The resources used to develop this chapter were screened to identify the most robust analyses, relying where possible on academically rigorous methods and attempting to weed-out simplistic online survey-based extrapolations of user impact.

While these impacts are considered, the source, robustness, and inherent variation that render direct

comparisons to other trails in other places difficult should also be recognized. One analysis of a 12-mile-long trail, for example, indicated a net annual loss of \$36,000 and had no impact on revenues for three counties that the trail traversed. This report looked at only one trail that had been open for four years and did not control for other factors that may have impacted sales tax revenues.

In nearly every economic impact study, the results can be heavily influenced by the choice of externalities that are included or excluded from the impact model. "Externalities" refers here to economic factors that are not related to the cost of producing a good or service, or to the cost of a consumer purchasing the good or service.

For example, the value to air quality/emissions, mental health, physical health, and adjacent property values may be difficult to measure over time and are therefore easy to overlook or overestimate, depending on the orientation of the analyst. The recognition that these variations do occur is important when setting out to compare direct and indirect trail benefits to governments or individuals.

It is recommended that Buncombe County work with other regional partners to conduct a full-scale economic impact analysis related to the economic impacts of greenways; trails; bicycle facilities; bicycle/running shops; hotels, bed & breakfasts and motels; and related industries such as bicycle and outdoor equipment manufacturing. Any attempt to measure true local or regional economic impacts can only be accomplished through a substantial investment in a statistically-valid effort.



The Virginia Creeper Trail has become a model of capitalizing on the impacts a greenway has on a community. Several businesses are tailoring their marketing and branding efforts to draw trail users.

Photo Credit: Don Kostelec

“The next generation is very savvy about choosing where they’ll live. They look carefully at quality of life factors like how much time they’re going to spend in traffic commuting, *if they can live near a park or hike and bike trail*, and whether a city’s downtown stays awake after five.”

— Rebecca Ryan, Founder of Next Generation Consulting, discussing traits of great cities (2009)

Methods for Estimating Greenway and Trail Infrastructure Benefits

Based on the review of major categories of spending above, it is apparent that developing a truly comprehensive economic input/output model of a multipurpose trail (e.g. a trail that accommodates bicycles and pedestrians) is a daunting task. Acquiring data, locating truly comparable cases for calibration, and assessing external influences such as marketing efforts or a trail's place within a larger, interconnected network of trails on the size of expenditures are tasks seldom within the capabilities of most governmental agencies.

Given typical time and budget constraints, an appropriate hybrid analysis method would use unitary estimates of revenue factors from established, similar trails to estimate direct costs; provide a summary of possible external influences that may affect revenue projections; and summarize ways that an agency and its partners can maximize trail usage and increase revenues.

One method for estimating impacts was researched and outlined by the University of Wisconsin-Madison and outlined below. Note there are three main types of economic effects: direct (jobs are created during construction, for example), indirect (suppliers of tools and materials increase output), and induced (money that is earned from the project is spent on unrelated goods and services).

1. Estimate the number of resident and non-resident users. Since these two groups have different levels and types of expenditures, it is important to calculate them separately. If possible, calculating the number of viable trail use days and types of activity (e.g., running, sight-seeing, special events) is desira-

ble if expenditures for these breakouts are available. This figure should be in the format of a "days of use" value for each type of user and activity.

2. Calculate expenditures by type of activity and type of user. Each type of user and each type of trail user activity will have a different level of expenditure that has to be estimated. Further, each type of activity will incur costs in different categories of expenditure.

3. Calculate Total Economic Effects. The total effects are the sum of the individual products of all trail user activities multiplied by the costs of each activity. Additional economic impacts through indirect and induced activity (all of which are secondary effects) would have to be calculated separately and added to the total.

In order to acquire the data necessary to estimate the values for activity duration (person days) and expenditures per activity per day, a specialized survey is the best tool. However, in the absence of such a dedicated survey, comparisons from other studies conducted for similar trail projects or systems of trails (i.e., throughout a county) can be used, with caution. The National Household Transportation Survey (NHTS) can also provide information in this process, and is fairly recent relative to this writing (the last survey was conducted in 2009).

Monetizing the non-expenditure side of indirect and induced benefits of trail-dependent activity is particularly challenging. Many studies use a popular input-output model called IMPLAN to calculate indirect and induced effects of construction and maintenance actions for infrastructure development. The IMPLAN model is also attractive because it computes these values at the county level, and because

it also calculates the total person-years of jobs created by the activity. These values, while widely accepted in economic circles, do not account for any utility related to the facility after its construction and related maintenance activities.

Some indirect effects may be impossible to reliably monetize due to a lack of data. Health-related impacts of additional cycling, reduction in fuel consumption/energy costs, job access, and other effects can still be reported anecdotally. The Buncombe County Greenways and Trails Master Plan is employing a rapid Health Impact Assessment to better define some such effects.

Indirect effects were a component of the 2004 report conducted by the North Carolina Department of Transportation on the economic effects of cycling in the Outer Banks region of North Carolina mentioned previously, which remains a benchmark study for the state on this topic. The range of economic impact from bicycling – between \$15 million and \$149 million – provides a good example of how the output of even a study utilizing direct survey data can spread over a wide range of possible outcomes.

Cost-benefit analysis is also sometimes conducted to estimate the value of the trail facility and compare it against the cost of right-of-way acquisition, construction, and long-term maintenance. The initial costs of design, right-of-way acquisition, and construction are one-time expenditures; the ongoing cost of maintenance is an additional cost comprising direct labor, fringe benefits, materials and equipment. The calculation of a benefit-cost ratio (BCR) to payback period (e.g., the number of years that it takes to “pay back” to the taxpayers the cost of the facility) are common metrics.

Fortunately, capturing costs is typically an easier task than calculating the benefits, since data is readily available on government expenditures through contracting, capital improvement program, and Comprehensive Annual Financial Reports (CAFRs) that are required to be prepared annually by municipalities in North Carolina.

Benefit Categories

Generally, trails can help foster events, spur local trips by commuters or exercise enthusiasts, or generally aid in the promotion of outdoor activities. A survey conducted by NCDOT summarizes cycling and walking statistics for just North Carolina while national parks and local parks and recreation departments may also conduct surveys of their users. Acquiring detailed, local data of this sort can be problematic, and estimates based on personal knowledge of the area obtained either directly or indirectly through interviews with local bicycle shop owners, hiking clubs, chambers of commerce or other local sources should be expected.

A survey of the Heritage Trail users in Pennsylvania indicated 64% of the trail users lived inside the county and 15% of the users lived more than one county away. Of those surveyed, 78% stated that cycling was their primary use of the trail. Just over 50% spent more than two hours on the trail, and 32% of the users stated that their use of the trail had influenced their decision to purchase bicycles or bicycle supplies.

Bottled water, candy, snacks, lunch at a trailside restaurant, and seeing a movie were cited as expenditure categories while actually using the trail.

Various categories of expenditure are commonly



Developers and businesses are finding that the market for residences near trails is growing. It was estimated that property values along the Cardinal Greenway in Muncie, Indiana, increased 9% shortly after its opening.

Photo Credit: Don Kostelec



Changing demand among visitors has prompted businesses to offer different amenities. This hotel in Ketchum, Idaho is located downtown, across the street from a spur of the region's well-connected multi-use trails system.

Photo Credit: Don Kostelec

recognized in economic impact analyses of cycling on a community. The ones that follow are fairly commonplace in national studies of economic impacts from trail and greenway construction and use and, with the exception of the indirect category, are benefits that few people would dispute, although the magnitude of the effect is much more open to debate and analysis.

It is for this last reason that the acquisition of local data through surveys and field observations are so important in determining the true impact of greenways or a trail system on economic outputs – not to mention benefits to human health through greater exercise.

Tourism and Tourist Expenditures. Western North Carolina is a popular destination for all types of tourists and an increase in people seeking active destinations is already seen in materials requested at bicycle shops, at facilities along the Blue Ridge Parkway and by visitors who patronize businesses located near rivers, streams and existing greenways. People will orient their vacation selections toward places that offer quality running and cycling environments. Runners clubs like those sponsored by the American Volkssport Association (AVA) conduct 3,000 annual events in 50 states. The AVA has over 300 clubs, including the Asheville Amblers. A study of 6,000 people conducted in Colorado noted that 10% of those surveyed had taken a bicycle-related vacation within the State in the preceding year, spending \$360 per person.

The same study indicated that out-of-state bicycle-oriented vacationers spent an average of \$950 per trip. A similar study conducted by NCDOT for the northern Outer Banks stated that cycling accounted

for 1,400 full-time equivalent (FTE) jobs annually and \$60 million in revenues. Forty-three percent (43%) of people surveyed in that study cited cycling as a major factor in their decision to vacation in the Outer Banks.

Specialty Retailers. Serious runners, joggers, and walkers will often spend considerable money updating to the latest clothing and gear that they feel will give them a competitive edge or simply improves the way that they feel when the run or walk. A good pair of running shoes may retail for \$120 or higher; specialty socks, shorts, shirts, packs, global positioning system (GPS) technology, and nutrition round out the ensemble.

Cycling enthusiasts are even greater consumers of retail goods. The market for higher-end road and mountain bikes has been growing for nearly a decade. These shops often custom-fit bicycle frames to their clientele, who typically pay in the range of \$1,500 to \$4,000 per bicycle. In some instances, accessory expenditures made at the time of sale of the bicycle purchase or subsequently often amount to a proportion of sales similar to the original bicycle purchase.

A study in Colorado stated that 755 jobs were based on supplying goods and services to Colorado-based cyclists on bicycle-related vacations in that state, generating/earning \$10 million in annual income. In all cases, purchases lead to job creation and tax revenues for the municipality or county, including higher local sales taxes and income tax.

Event Expenditures. Event runners will usually arrive at least a day early for marathon and even half-marathon length runs. Likewise, cyclists from out-of-town usually will want to spend the evening to pre-

pare for a longer ride, and will certainly do so for multiple-day events. They also purchase repair-related equipment at local bike shops and food/entertainment as well as lodging. After the ride or run is complete, they and their friends will want to relax and enjoy the amenities of the host city in restaurants, bars, and shopping attractions. Registration fees for charity events and races are significant revenue sources, and are usually in the range of \$25 to \$75 per cyclist.

For example, The Ramble Run at Biltmore Park is expected to host over 1,000 runners for 5k (kilometer) and 10k runs, for example. Each participant will pay between \$35 and \$45, with teams registering for \$125.

Construction and Maintenance. The planning, design and construction of trails and greenways requires professional skills, grading, laying of base and asphaltic courses, and initial as well as ongoing clearing of shrubs and trees. Certainly, the type of trail – on-road or off-road, casual or formal – makes a difference to the cost of construction and the duration and extent of related work efforts such as planning, design, construction, and maintenance. As with any other infrastructure investment, workers will need to purchase food and services, and perhaps short- or long-term lodging to complete the project. An unusual but compelling case is found in New York City, which has used a green jobs program to help rescue a number of urban youth as arborists through a seven-month training program that culminates in them becoming fully employed arborists for the City. Two other career tracks – community forestry and ecological restoration – are also available through the MillionTrees Training Program.

Indirect Benefits. This category of impact encompasses health effects of increased trail use/walking, improved mental benefits of exercising, reductions in mobile source emissions for trips that replace an automobile with a non-motorized mode of travel, new or expanded business opportunities that key on trail users and their needs, and the impacts to adjacent property values.

Obesity is also a financial drain on area resources, most notably healthcare and work absenteeism. A healthier lifestyle brought about, in part, by greenways can help reduce these costs in combination with other policies and programs.

While most studies that set out to find beneficial indirect impacts do find them, the areas (e.g., Portland, Oregon) that have embraced bike/pedestrian modes as part of an overall economic - if not cultural - development strategy have realized truly measurable benefits in terms of walking and biking mode share that siphon off automobile trips.

The impacts to property values – and hence public tax revenues assessed on property – through externalities also creates a conversation about economic benefits of greenways. Externality is an economic term meaning any effect that is outside of the direct inputs or outputs of an economic assessment. Considering the impacts of increased exposure, potential or perceived loss of privacy, littering, and trespassing is necessary in any discussion about the economic impacts of greenways and trails.

The debate created by proposals to construct greenways near existing residential communities will continue to draw many differing opinions, but the preponderance of evidence from the more ro-



Trails in Teton County, Wyoming create an annual economic impact of \$18,000,000.

- Nadia Kaliszewski (2011)
"Jackson Hole Trails Project Economic Impact Study."

most scientific studies continues to support the position that green infrastructure either affects property values insignificantly or positively.

Exhibit 9-1 illustrates some of the relationships, or connectivity, between greenway and trail expenditures and other factors such as job creation and tax revenues. The recent announcement of the locating of the New Belgium Brewing plant in the River Arts District in Asheville, and the existing and planned greenways nearby being a major factor in that decision, is an example of how greenways can attract businesses.

The complexities of the relationships are understated, particularly when long-term, indirect effects are accrued to the total benefit profile of a project. Even relatively small categories of expenditures can add up: the Colorado study mentioned earlier noted that 22,000 bicycle riders contributed to

race and registration fees of \$1.2 million in 1999.

Exhibit 9-1 also illustrates the main components of economic impact from trail infrastructure investments: retail expenditures, construction and maintenance expenditures, and event-related expenditures. Externalities such as health benefits (e.g., reduced expenditures on health care and prescriptive treatments) and reductions in pollution or traffic congestion are not included in the majority of economic impact studies and are challenging to quantify for proposed trails.

Maximizing the Economic Benefits from Greenway and Trail Construction

A number of recommendations can help to improve the return on investment (ROI) from green infrastructure programs and projects. Supporting facilities with educational and encouragement programs, such as those outlined in other chapters of this Plan, help to

Exhibit 9-1: Relationship Between Greenways & Trails-related Expenditures and Other Factors



ensure that the economic benefits cited previously come to fruition.

1. Ensure that existing marketing materials incorporate bicycling, jogging, and other outdoor amenities that can be accessed or enhanced by trail connections. Many agencies, including the Chamber of Commerce develop marketing brochures, websites, and videos and then distribute them to various markets. Having relevant content included in these brochures is a low-cost way of making sure that the “brand” of the trail system is included in the overall marketing scheme for the region; make sure that the Connect Buncombe website link is shown on websites that list resource information for the area. An example of providing good content from a non-trail site is found at the Asheville Chamber of Commerce website, which devotes a page to bicycling and links to a long list of cue sheet for routes around Asheville.

2. To market the benefits of greenways and trails you have to know what they are. As already explained, the acquisition of data for all kinds of trail use is critical, not only for determining the benefits but also for marketing the activity. The NCDOT “Pathways to Prosperity” document is an excellent example of a study summary that is both beautiful and easy to read while imparting key statistics. Hence, conducting a brief annual survey, or making sure that greenway-related questions are included in the economic surveys conducted by business groups or local governments, is crucial. Over time, charting the increase in greenway usage and expenditures can provide key information to prioritizing new facilities and programs to support trail investment.

3. Focus on connecting to complimentary land uses. Since off-road trails typically connect destinations

along a stream bank, residential uses predominate. Using short pathways or trails to reach businesses and commercial centers as well as parks and schools greatly increases the transportation utility of the facility. When siting a new trail, considering how the adjacent land uses could support trail users – or how redeveloped property could support them – is important.

4. Create trail maps. The most useful dedicated resource for trail joggers and cyclists is a map plus cue sheet that explains the route and its hazards, destinations, and scenic resources. Creating these maps that can be easily downloaded and printed from the Internet is an important consideration when considering formatting. Also, make sure that each map includes information about where to go for more information. Maps can also be placed at kiosks, trailheads and in stores near the greenways.

5. The Alleghany Trail Alliance has published a good reference tool for “capturing trail-based tourism.” This document lists a number of additional ways that municipalities and counties can work to enhance the popularity, utility, and economic and social benefits of trails:

- ◆ **Leadership is important.** Leaders that keep the trail system in front of prospective businesses and developers can carry a pro-greenway and trail message much farther in some circles than can town or county governmental staff. Some of the most important leaders – or catalysts – of successful trails and trail systems came from outside the sponsoring agency.
- ◆ **Follow the Plan.** This Plan creates a number of recommendations that should be put into place



The popularity of the greenway system in Boise, Idaho (called the Greenbelt) has generated a magazine based on the famed trail system. The publication has articles on businesses close to the trail system and human interest stories on users and those inspired by the Greenbelt.

Photo Credit: Don Kostelec

as funds allow. Don't be discouraged if every recommendation can't be implemented right away – keep at it consistently and change will happen.

- ◆ **Create Private Resources.** Recruit those providers of goods and services necessary to accommodate runners, cyclists, hikers and casual users of the trail system.
- ◆ **Work with Law Enforcement.** Work frequently and well with local law enforcement personnel, who can be your biggest ambassadors to potential trail users as well as a source of well-being for existing trail users.
- ◆ **Design Matters.** The design of the trail system and nearby businesses, including lighting, building facades/displays, building materials and landscaping create a very clear message about whether it is safe and worthwhile to walk or bike to a place. Gateway treatments and providing supportive designs for connecting links between trails and important destinations within ½-mile (e.g., downtown businesses, schools, and parks) are critical to generating more trail usage.
- ◆ **Provide Clear Directions.** Consistent trail signage and directional information to key destinations as well as restrooms, water fountains, assistance, and camping are important to help out-of-town guests get around, as well as to help children and the elderly feel secure on a trail system.
- ◆ **Promote Trail-Oriented Events.** Organizing events that make use of the trails are becoming ever more popular. Don't leave out walking associations, “mud run” events, and disc golfing as

possibilities, including the more typical marathon, half-marathon, shorter races, and charity rides/races. Running and cycling groups are usually very enthusiastic organizers, but may need just a little direction and coordination at the outset to make an event a reality.