

The ROI of Cool:

Quantifying the Value of Linear Parks, Trails and Greenspace 2012

Linear Parks and Trails are Cool

They are pretty. They are playgrounds. They are civic centers. They are centerpieces of civic pride. And they define our communities.



And they are good for local economies.

But do Parks and Trails have an ROI?

If a community invests millions in the design and construction of new trails and acres of parkland what will they get in return?

Or said another way... "What is the ROI of that Green Infrastructure?"

> Buffalo Bayou Partnership Buffalo and Beyond Master Plan, 2002, prepared by Thompson Design Group





Is It More Kid Stuff and Critters?









Is it Fewer Cars? A Cooler Cool?





It's All of the Above... and More. But How Do You Prove It?



Math

The following Case Study briefly explores some of the benefits flowing from Green Infrastructure, as well as the math and methodology backing them up.





Bayou Greenway Initiative

300 Miles of Trails \$490 Million



Step One: Think Big

What sectors of a local economy might a trail system impact the most?

- Fiscal
- Transportation
- Environmental
- Public Health



Step Two: Dig In

Where do the benefits accrue?

Individuals Benefit Municipalities Benefit

Communities Benefit Corporations Benefit





Step Three: Determine What You Can Measure

- Recreation Benefits
- Health Care Cost Savings
- Vehicle Operating Cost
 Clean Water Savings
- Crash Risk Reduction
- Property Value **Premiums**
- Property Tax

- Air Quality (CO₂, NOx, VOC)
- Carbon Sequestration
- Ecosystem Services



Step Four: Have Fun With Numbers

- Most benefits are derived from the number of individuals who can be expected to use the trails in some form – cyclists, hikers, runners, walkers, general recreational users, and commuters
- User counts are predicated on population proximity to the park/trail system with 1.5 miles being the limit of influence
- Using population counts within 1.5 miles on either side of the park/trail created a 3 mile-wide band overlaying the entire system



The Bayou Greenway Amoeba Map



Bayou Greenway Numbers

So, It Costs \$490 Million to Build and Connect 300 Miles of Trails and You Estimate it Will Generate What...?

Recreation Benefits	\$ 63,209,711
Health Benefits	\$ 13,927,262
Vehicle Operating Cost Savings / Congestion Relief	\$ 3,778,207
Crash Reduction	\$ 280,336
Air Quality: VOC, NOx, CO2	\$ 140,690
Carbon Sequestration	\$ 5,794
EcoSystem Services	\$ 20,972,475
Clean Water	\$ 390,890
Property Value	\$ 21,642,036
Estimated Annual Total (Moderate)	\$124,347,400
Total Number of Individuals Living Within 1.5 Mile Buffers	1 919 228

Bayou Greenway Percentages: The Big Picture



- Recreation Benefits
- Health Benefits
- Air Quality / VOC, NOX, CO2
- Vehicle Operating Cost
 Savings / Congestion Relief
 Carbon Sequestration
- EcoSystem Services
 - **Clean Water**
- Property Value
 - **Crash Reduction**

Bayou Greenway Percentages: Transportation vs. Health



Okay, What's the ROI on Bayou Greenway

Take \$124,347,400 (Annual Benefits Estimate), divide that by \$490,000,000 (Estimated Cost to Build 300 Miles of Trails) and you get an annual ROI of .25.

Said another way, the projected direct and indirect benefits flowing from the project will exceed construction costs in 4 years.

Oh... Here Are Our Sources. Mostly.

- User predictions, the key to estimating impact and benefits, are based on work developed in cooperation with the Federal Highway Administration
- Assumptions and methodologies have been reviewed and discussed with experts at Rice University, Texas A&M,
 Baylor College of Medicine, Harris County Flood Control, and Houston-Galveston Area Council (H-GAC)
- Data provided by H-GAC, Trust for Public Lands, U.S. Army Corps of Engineers, U.S. Census Bureau, Texas Transportation Institute, League of American Bicyclists, Houston Parks Board

Okay... So the Bayou Greenways are Cool.

How Can Defining Benefits Help Other Projects?



Strategic Planning...



Scenario Modeling





Energy Corridor Trails



Community Assets Surveys



What else do we need to improve our understanding of the benefits of Linear Green?



Fill in Some Holes



Define Community Risks



The Take Away?

Funding for Green Infrastructure becomes increasingly dependent upon its ROI, qualitative "do the right thing" arguments will become less persuasive. And numbers will become more persuasive.

Do the Math... or Else...







Q and A? Thank You!



Now Just For Fun...

Cyclists are a diverse group. Some of us ride fat tires down rocky trails, some of us ride road bikes up burly hills, some of us ride for sport and some of us ride just for fun. Some ride for the adrenaline rush and some ride their bikes for basic transportation.

Bicycling, along with being the most efficient mode of human locomotion, is also one of the best all-around activities for improving our health and communities.



www.atlantablke.org

www.peoplepoweredmovement.org



HEALTH & COMMUNIT

THE BENEFITS OF

BALANCE -

Cycling produces the balance between exertion and relaxation which is so important for the body's inner equilibrium.

HEART -

All the risk factors that lead to a heart attack are reduced and regular cycling reduces the likelihood of heart attack by more than 50%.

COORDINATION -

Moving both feet around in circles while steering with both your hands and your body's own weight is good practice for your coordination skills.

MUSCLES -

A week of Inactivity reduces the strength of the muscular system by up to 50% and can harm them long-term. During cycling, most of the body's muscles are activated.



MENTAL HEALTH

Cycling has a relaxing effect due to uniform, movement which stabilizes physical and emotional functions. It reduces anxiety, depression and other psychological problems.

BACK PAIN

Cycling posture is optimum, and the cyclic movement of the legs stimulates muscles in the lower back.

- WAISTLINE

Cycling is ideal for targeting problem areas. It enables people who can not move easily to exercise. It increases fitness and stimulates the body's fat metabolism.

JOINTS

The circular movement of cycling assists the transport of energy and other metabolic produces to the cartilages, reducing the likelihood of arthrosis.

Source: Cavill N, Davis A, 2007. "Cycling and Health: what's the evidence?" Cycling England.









More than three times as many new bicycles (14.9 million) are sold in the U.S. each year than cars (4.6 million) Source National Brycle Dealers Association 2010

source: National Brcycle Dealers Association, 2010

CYCLING/WALKING PROJECTS CREATE 11-14 JOBS PER \$1 MILLION SPENT COMPARED TO JUST 7 JOBS CREATED PER \$1 MILLION SPENT ON HIGHWAY PROJECTS

Source: The Alliance for Biking & Walking Benchmarking Project

For Follow-Up We are...

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