

Greenway Design and Physical Activity

UT researchers Dana Wolff, Gene Fitzhugh and Chris Cherry surveyed users of two popular Knoxville greenways—Third Creek and Lakeshore—to find out how the use of the greenways differed.

They defined Third Creek as a more accessible greenway, because it runs through neighborhoods, parks and commercial areas, and users can access it by car, foot or bicycle. They defined Lakeshore as less accessible, because it's entirely within Lakeshore Park, surrounded by a fence, and because there are no sidewalks or bicycle lanes on the nearby streets.

Demographic Profile of Users

- Third Creek compared to Lakeshore users were:
 - Younger (44.0 ± 13.6 vs. 48.4 ± 14.4)
 - Male (60.7% vs. 34.8%)
 - Never Married (29.8% vs. 18.7%)
 - Employed (78.3% vs. 64.1%)
 - Earning Less than \$50,000 (45.7% vs. 32.1%)

The researchers collected demographic information about greenway users. They found that people on Third Creek Greenway were younger and were more likely to be male, unmarried, employed, and to earn less than \$50,000.

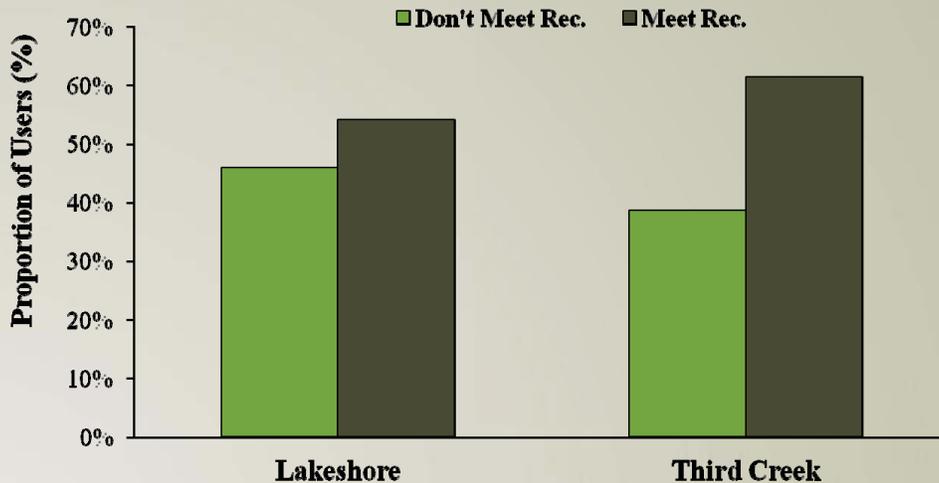
PA Behaviors of Greenway Users

	N	Third Creek	Lakeshore	P-Value
<u>Purpose of PA^a</u>				
Leisure-Time	592	89.4%	99.7%	p < 0.001
Transportation	24	10.6%	0.3%	
<u>Activity Performed on GW^a</u>				
Walking	364	24.1%	78.0%	p < 0.001
Running	163	34.7%	22.0%	
Biking	89	41.2%	0.0%	
<u>GW PA Frequency^b</u>				
Days/week	616	2.6 ± 1.8	3.2 ± 1.9	p < 0.001
<u>GW PA Duration^c</u>				
Min/Bout	609	60 (45 - 90)	45 (40 - 60)	p < 0.001
<u>PA Volume (MET·min·wk⁻¹)^c</u>				
GW-only ^d	608	630 (396 - 1050)	569 (297 - 990)	p = 0.012
Total GW-related ^e	609	720 (440 - 1200)	614 (320 - 1070)	p < 0.001

^a Variables reported as the proportion of GW users
^b Variables reported as means and standard deviations
^c Variables reported as medians & (interquartile range)
^d Physical activity performed solely on the greenway
^e Combined GW and active transit physical activity

The research team asked greenway users about the physical activity (PA) they did on the greenway. They found that 10.6 percent of Third Creek users were using the greenway for transportation. They also found that while Lakeshore users used the greenway more often, Third Creek users tended to use it for longer durations and for more intense activities, like running and bicycling.

Proportion of GW Users Meeting the 2008 PA Guidelines



Because of the longer duration of their greenway use, Third Creek users were more likely to meet national exercise guidelines.

Active Transit Greenway Users on Third Creek

- Accumulated greater volumes of PA.
- Users more likely to be:
 - Not married (OR = 2.63; 95% CI = 1.10 – 6.30)
 - Under the age 35 (OR = 6.00; 95% CI = 1.87 – 19.16)
 - Live within one mile of the GW (OR = 5.39; 95% CI = 2.03 – 14.30)

Researchers found that those using Third Creek for transportation got more physical activity than other users, and were more likely to be unmarried, young and living near the greenway.

Discussion

- After taking GW accessibility into account, significant differences in users exist
 - Lakeshore users:
 - More Frequent Users
 - Greater years of GW use
 - Live Closer (1 mile)
 - Engage in lower intensity
 - Third Creek users:
 - Spend more time on the GW per visit
 - Perform higher intensity PA
 - More likely to access the GW via AT modes

Conclusions: GW with Low Accessibility

- Should be considered by GW planners and designers
 - High level of use despite barriers to access through AT
 - Users are more purposeful
- Potential reach may be greater
- Creates another factor that city planners should consider
 - Providing adequate parking for users driving to the GW.

The research team concluded that lower-accessibility greenways, like Lakeshore, may appeal more to certain users than to others, particularly those willing to drive longer distances and those purposefully seeking exercise. For those greenways, providing parking is a must.

Conclusions: GW with High Accessibility

- Creates new opportunities to access outdoor PA through AT.
- May allow for greater volumes of PA
 - ensure individuals to meet public health PA guidelines.
- Potential to impact environmental health goals
 - Automobile traffic
 - Fuel consumption
 - Users who access via AT modes reduce their fuel consumption by 35.48 gallons of gas per year (assuming the average mpg of 22.1, FHA 2000).

The researchers found that high-accessibility greenways, like Third Creek, may encourage users to get more physical activity in each bout of exercise and can help reduce traffic and air pollution by providing opportunities for active transportation.