

Ten Questions about the Use of Urban Greenway Trails



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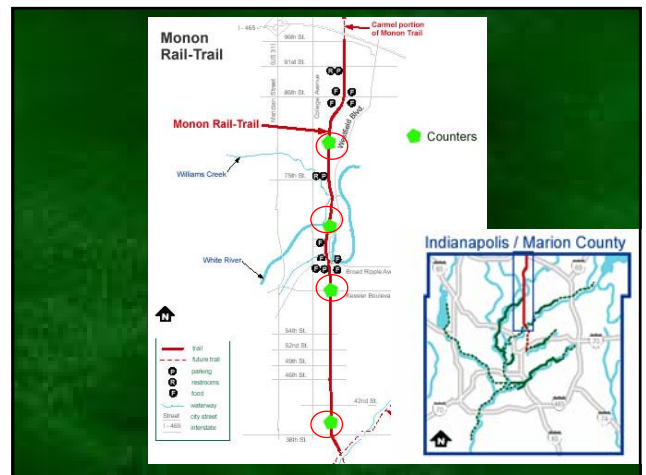
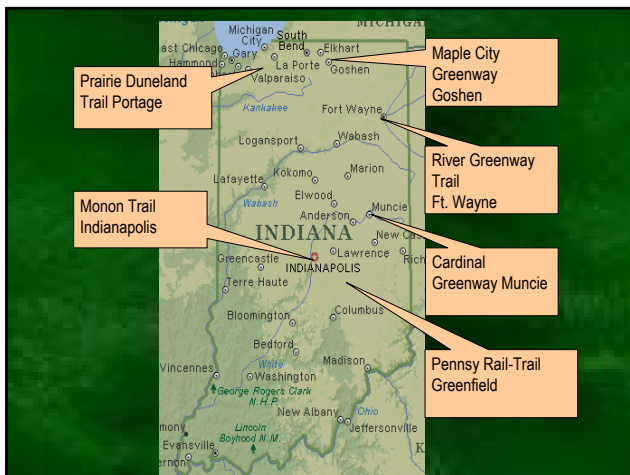
Indiana Trails Study, 2001, *Eppley Institute for Parks and Public Lands, Indiana University, sponsored by INDOT, National Park Service, IDNR*

<http://www.indiana.edu/~eppley/trails/index.html>

Monon Trail Study, sponsored by *Center for Urban Policy and the Environment, SPEA, IUPUI*

Fall 2000: Users' speed study

Feb 2001 - present: Continuing traffic pattern monitoring and analysis



Motivation

The Bureau of Transportation Statistics (BTS):

... quality of existing data about "*Usage, trip, and user characteristics*" such as the "Number of bicyclists and pedestrians by facility or geographic area" was "*Poor*"

... the "*priority for better data*" was "High"

Purpose and Objectives

- Determine level of use of Indiana greenway trails,
- Assess activity patterns on trails, and
- Describe perceptions of trail users and neighbors.

Methodology

Survey:

- Intercept survey and mail survey of users
- Mail survey of trail neighbors

Traffic counting:

- Infrared counters



Infrared trail monitor

1. Do people use urban multiuse greenway trails?



Yes, trail use varies with

- The purposes a trail serves
- The size of the community in which it is located
- The types of neighborhoods or areas through which it passes

2. How many people use urban multiuse greenway trails?



Trail use vs Trail traffic

Separate trips to use a trail

Number of bodies past a point

$$\text{Trail traffic} / 2 = \text{Trail use at point}$$

Average monthly traffic on trails in Indiana

	Population	Average Monthly Traffic (9 - 10/00)
Indy (75 th St.)	791,926	50,377
Ft Wayne	205,727	25,573
Muncie	67,430	9,169
Portage	33,496	10,598
Goshen	29,383	9,819
Greenfield	14,600	5,663

$$M = 8018 + 0.0522 P$$

Indiana Trails Study

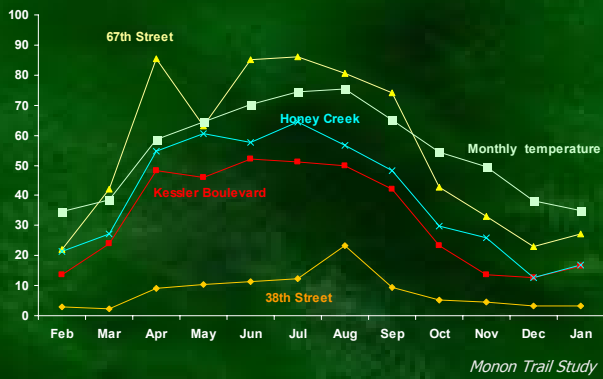
3. When do people use urban multiuse greenway trails?



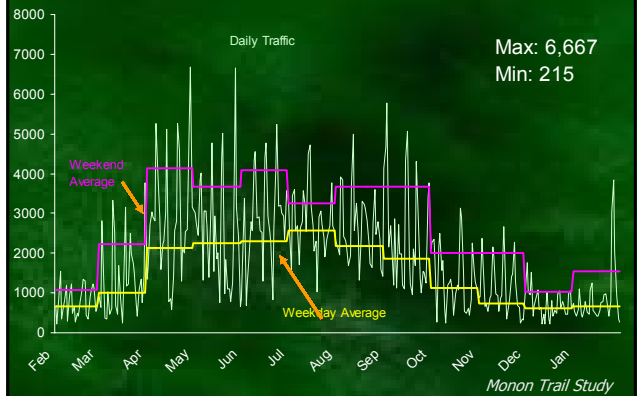
People use trails

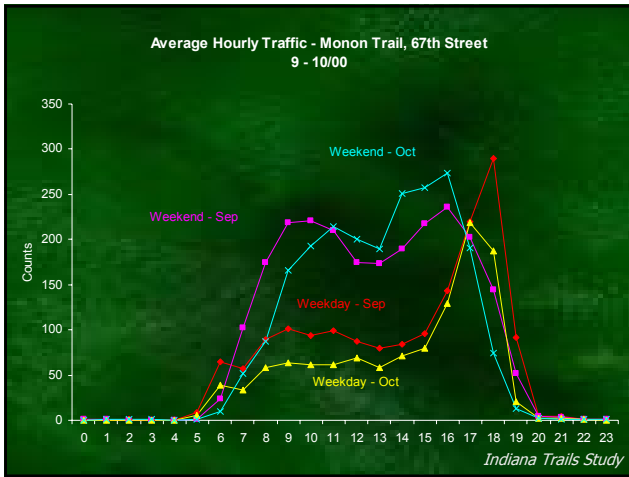
- When the weather is warmer, more in the summer than in the winter
- When they have more free time
- More on weekends than on weekdays
- Higher after working hours than during the day on weekdays

Variation of Monthly Traffic (1000s) and Temperature (F°)
Monon Trail 2/01 - 1/02



Daily Traffic Variation - Monon Trail, 67th Street
2/01 - 1/02





4. Who uses urban multiuse greenway trails?



Majority of users are

- Young adults (less than 46)
- Caucasian
- Employed with relatively high incomes
- Highly educated

Indiana Trails Study

5. Why do people use urban multiuse greenway trails?

Reported Reasons for Using Greenway in Trails Indiana

	Health/Exercise	Recreation	Commute	Other
Ft. Wayne	66%	32%	2%	
Goshen	64%	32%	4%	
Greenfield	79%	19%	1%	1%
Indy	71%	23%	5%	1%
Muncie	56%	39%	3%	1%
Portage	74%	26%		

Indiana Trails Study

6. How do people use urban multiuse greenway trails?

User Activities on Greenway Trails in Indiana

	Walk	Cycle	Run	Skate	Other
Ft. Wayne	49.2%	29.9%	14.8%	5.7%	0.3%
Goshen	39%	40.3%	19.9%	0.3%	0.6%
Greenfield	53.9%	24.6%	14.4%	7.2%	
Indy	50.6%	23.2%	13.4%	12.2%	0.6%
Muncie	11.4%	77.1%	4.8%	5.7%	1%

Indiana Trails Study

7. How do people get to urban multiuse greenway trails, and how far do they travel to use them?

Travel Modes to Trails in Indiana

	Walk to Trail	Cycle to Trail	Drive to Trail
Ft. Wayne	23.4%	18.0%	58.7%
Goshen	28.1%	31.0%	41.0%
Greenfield	16.3%	19.6%	64.1%
Muncie	8.2%	14.3%	77.4%
Portage	5.2%	27.8%	67.0%
Indy (75 th St.)	28.7%	14.9%	56.4%

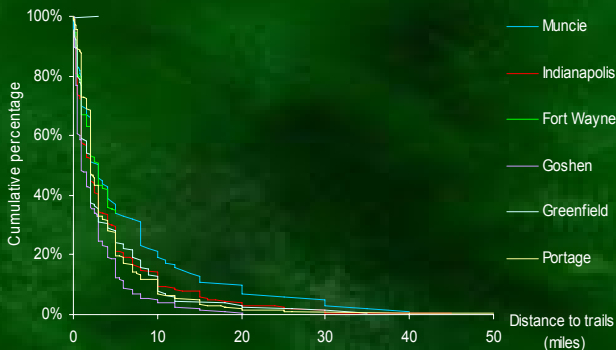
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Distances Traveled to Trails in Indiana

	<1 mile	1 - 4.99 miles	5 - 10 miles	> 10 miles
Indy	28.7%	41.7%	20.4%	9.2%
Ft. Wayne	21.2%	43.8%	24.8%	10.2%
Goshen	41.5%	39.9%	14.9%	3.7%
Greenfield	22.3%	49.7%	21.0%	7.0%
Muncie	20.4%	42.7%	18.4%	18.4%
Portage	12.3%	59.9%	21.2%	6.6%

Indiana Trails Study

Distance Decay of Trail Users in Indiana



Indiana Trails Study

Mean and Median Distances to Trails in Indiana (miles)

	Mean			Median		
	Walk	Bike	Drive	Walk	Bike	Drive
Ft Wayne	2.3	2.8	7.1	1	1	5
Goshen	0.8	2	4.1	0.3	1.6	3
Greenfield	3.8	1.4	4.9	0.5	1	2.8
Indy	1	2.3	6.7	0.4	1.3	5
Muncie	0.8	1.6	8.8	1	1	5
Portage	1.9	2.9	4.6	0.5	2	3
Overall	1.6	2.3	5.9	0.5	1	4

Indiana Trails Study

Mean and Median Time to Trails in Indiana (minutes)

	Mean			Median		
	Walk	Bike	Drive	Walk	Bike	Drive
Ft Wayne	11	8	12	5	5	10
Goshen	6	10	10	5	6	8
Greenfield	5	7	8	5	5	5
Indy	6	8	13	4	5	10
Muncie	9	6	14	10	5	10
Portage	7	11	8	5	5	5
Overall	8	9	11	5	5	8

Indiana Trails Study

8. How much time do users spend on urban multiuse greenway trails, and how far do they go on them?

Mean and Median Time on Trails in Indiana (minutes)

	Mean				Median			
	Walk	Run	Bike	Skate	Walk	Run	Bike	Skate
Ft Wayne	57	61	73	64	54	55	60	60
Goshen	50	35	43		45	30	30	
Greenfield	55	39	39	54	55	35	30	38
Indy	70	62	79	65	60	50	60	60
Muncie	66	99	104	60	60	90	90	60
Portage	58	56	83	68	60	60	70	60
Overall	59	52	74	64	60	45	60	60

Indiana Trails Study

Mean and Median Distance on Trails in Indiana (miles)

	Mean				Median			
	Walk	Run	Bike	Skate	Walk	Run	Bike	Skate
Ft Wayne	3.1	5.1	9.7	6.6	2.5	4.0	8.0	5.0
Goshen	2.6	3.4	4.3		2.5	3.2	4.0	
Greenfield	3.2	3.6	4.4	3.6	3.0	3.0	4.0	2.5
Indy	4.1	5.8	10.9	8.0	3.5	5.0	10.0	8.0
Muncie	7.5	9.2	16.9	7.5	5.0	6.0	8.0	8.0
Portage	3.4	5.2	10.9	7.3	3.0	5.0	10.0	6.5
Overall	3.4	4.8	9.5	7.0	3.0	4.0	7.5	6.5

Indiana Trails Study

9. How fast will users go on urban multiuse greenway trails?

Measured and Computed Mean Travel Speed (m/sec)

	Walker	Runner	Cyclist	Skater
V. & B (1998)	1.6	3.3	5.8	
Monon	1.6	3.0	5.8	4.3
Ft. Wayne	1.8	2.6	4.6	4.7
Goshen	1.5	2.8	6.1	
Greenfield	1.6	2.5	3.9	2.4
Indy	2.1	2.8	4.2	3.6
Muncie	4.2	2.7	6.7	3.4
Portage	1.6	2.8	3.7	4.2

Mean Travel Speed (m/sec) Corrected for Outliers

	Walker	Runner	Cyclist	Skater
V. & B (1998)	1.6	3.3	5.8	
Monon	1.6	3.0	5.8	4.3
Ft. Wayne	1.4	2.3	3.3	2.7
Goshen	1.5	2.7	3.4	
Greenfield	1.6	2.5	3.9	2.4
Indy	1.5	2.5	4.1	3.6
Muncie	1.7	2.7	4.7	3.4
Portage	1.6	2.6	3.6	3.0

10. How does weather affect use of urban multiuse greenway trails?

Effect of Precipitation on Trail Use

	Average weekday		Average weekend	
	Without rain	With rain	Without rain	With rain
Ft. Wayne	796	626	1,127	668
Goshen	303	240	513	345
Greenfield	185	137	283	177
Muncie	278	225	455	340
Portage	402	279	598	377
Indy	1,749	712	3,290	1,810

Indiana Trails Study

Summary



- People make thousands of trips to use trails annually, even in small communities. Trail traffic, which is greater in larger communities, can be great enough to cause congestion.
- People use trails mainly in the spring, summer, and fall, on weekends and after work, but also all throughout the year and at all times of day.



- People from all walks of life use trails, but users are disproportionately white, younger adults who have above average incomes and college educations.
- People use trails mainly for fitness – health and exercise. In Indiana, fewer than five percent of users report using trails for commuting.
- People use trails mainly for walking and cycling; smaller proportions of users use trails for running and skating.



- Most people drive to trails from distances less than five miles, but trails do attract users from distances as great as 50 to 60 miles. Smaller proportions of users cycle and walk to trails. Regardless of how users travel to trails, most spend less than 10 minutes traveling to use trails.
- Most users spend roughly an hour or so on the trails per visit, although cyclists tend to spend longer. Walkers and runners travel on average three to four miles per visit, while skaters and cyclists travel longer distances.



- Measurements of the speed of users show consistency across locations. Runners run, on average, at twice the speed of walkers, and cyclists and skaters travel faster. Estimates of speeds calculated from user-reports of time and distance traveled are consistent with measured speeds.
- Rainy weather deters use but does not stop it. Counters installed on the Monon Trail in Indianapolis recorded traffic every day for a year long period, regardless of weather.



Other studies of greenways in Indiana are also available at the Center for Urban Policy and the Environment.

<http://www.urbancenter.iupui.edu/container.htm>