

Inventory of Bicycle Usage (Demand)

An important element in planning for bicycling is the analysis of the demand or bicycle usage. The Bicycle Advisory Committee of the Ozarks Transportation Organization (OTO), the MPO for the Springfield, Missouri Area, conducted a bicycle survey throughout the area to determine the dynamics of bicycling, such as origin and destination of trips, trip purposes and frequencies, attitudes, barriers, general comments and recommendations of the public.

The Bicycle Public Input Survey (see appendix 1) was available to all the community of the MPO for a month period from February 24 to March 29, 2005. It was offered in city halls, community centers, City Utilities buses, Bicycle Shops, and four websites in the area. It was also distributed in many public meetings and events such as the Ozark Greenways Inc. annual meeting, the Logan-Rogersville Health and Safety Fair, Northwest Study public hearing, Kansas Expressway extension public meeting, Springbike Bicycle Club monthly meeting, and the Springbike Chili ride. The media also promoted the survey through the regional newspaper and four regional channels (see appendix 2). Approximately 2,000 printed surveys were distributed.

By the end of the public input period the OTO received 190 completed surveys equivalent to an approximate of 10% of response rate. The data from the surveys was tabulated and analyzed using Excel and Arc GIS 9.0. This report contains the most useful information derived from the survey.

1.1 Characteristics of survey respondents.

1.1.1 Age and sex.

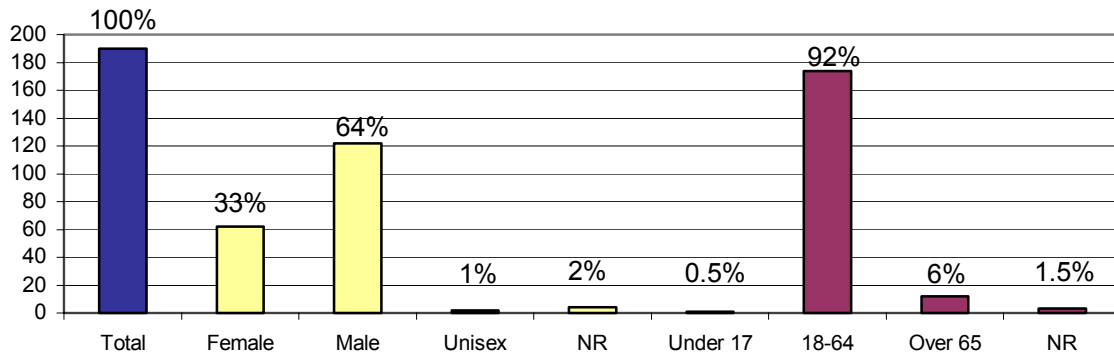


Figure 1 Demographic characteristics of the respondents

Most of the survey respondents are men (64%). There was little participation of the youth (0.5%) and the elderly (6%).

1.1.2 Place of residence and place of work.

The majority of the respondents (78%) live in the City of Springfield and Greene County in Missouri, and three fourths of the participants work in the City of Springfield. The City of Springfield and Greene County have been the jurisdictions that have been planning for and promoting bicycling in the last decade. All other jurisdictions just recently became part of the MPO and therefore do not have much history in bicycle planning. This may be an explanation of the predominance of participants from Greene County and the City of Springfield.

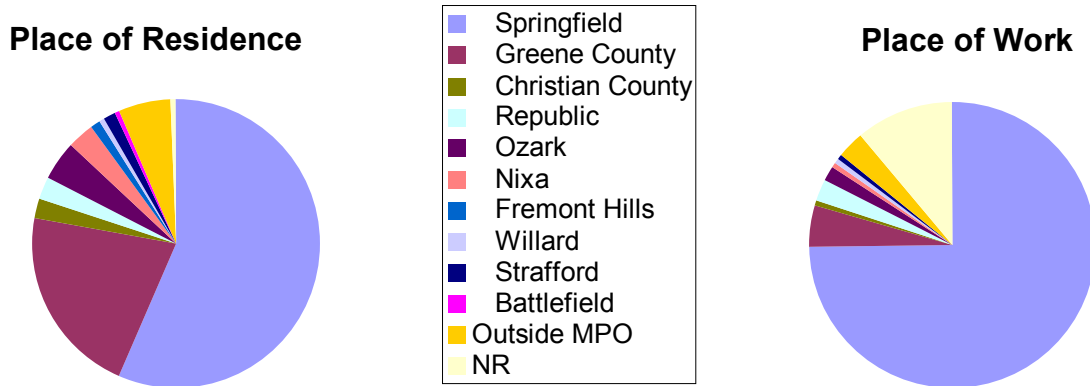


Figure 2 Place of residence and place of work.

1.1.3 Access and use of different modes of transportation.

A very large percentage of the respondents (90%) own a bicycle, which means that they can ride if they choose. At the same time, the same percentage of participants own a car. Only 10% of the participants use the existing City Utilities bus system, which serves the City of Springfield and offered the possibility to bus and bike, given that all the buses are equipped with two bike racks.

1.1.4 Participation on bicycle clubs or organizations

Only 55 participants (29%) belong to one or more bicycle clubs or organizations on the local, state or national level. Table 1 list these clubs or organizations.

Table 1 Participation on bicycle clubs or organization

Bicycle Club or Organization	# of respondents
Springbike Bicycle Club	35
Ozark Greenways	9
Ozark Cycling Club	3
MO Bike Federation	3
League of American Bicyclists	4
Ozarks Multi-sport club	2
Dallas off-road bicycle association	1
Birmingham Bike Club	1
Greene County Bad-Ass Bike club	5
Bikin' Iguanas(MS 150 Team)	1
Rails to Trails	1
TNT Bicycles (BMX)	1

1.1.5 Use of existing Greenway Trails for bicycling

People were asked to name three main routes or trails that they use most often for bicycling. Table 2 shows the amount of participants that uses the trails at least one a month for bicycling for all purposes.

Table 2 Usages of Existing Greenway Trails for Bicycling

Use of existing bike paths or trails	Users	Percentage
Galloway Creek / James River Greenway Trail	54	23.48%
South Creek Greenway Trail	47	20.43%
Frisco Highline Trail	24	10.43%
Sac River Trail	6	2.61%
Wilson's Creek National Battlefield Trail	6	2.61%
Jordan Valley Greenway Trail	2	0.87%
SMSU Bike Path	2	0.87%
Ward Branch	1	0.43%
Busiesk Trail	1	0.43%
Schuyler Creek Trail (Republic)	1	0.43%

Most of the trails are used mainly for recreational bicycle trips. However, some respondents have started using them as part of their commuting route especially the Galloway trail when commuting from Ozark to Springfield, and the South Creek Trail from southwest Springfield to the center of the city.

Please be aware that to get total usage of the Greenway trails in the area it would be necessary to conduct a count of bicyclists in each trail. Therefore, this data cannot be taken as a total. It only gives an idea of how a sample of the total population is using them.

1.1.6 Preferred bicycle facilities

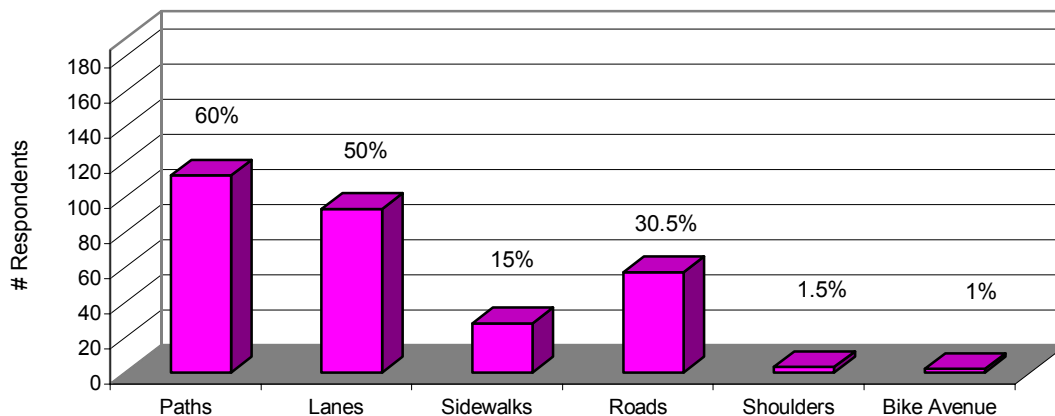


Figure 3 Preferred Bicycle Facilities

This question allowed people to choose one or more facilities that they prefer for bicycling. Almost half of the respondents chose more than one preferred bicycle facility.

This result reflects that people in the area have an ideal of a more comprehensive and interconnected bicycle system that include separate bicycle paths, bicycle lanes, shared roadways, bicycle avenues, and the use of sidewalks (with restrictions of users and places).

Separate bicycle paths or greenway trails and bicycle lanes are the most popular facilities among the respondents with 60% and 50% respectively. These results may be an effect of the positive impact that the development of Greenway trails in the last decade have had in this community.

Thirty percent of the respondents chose bicycling on shared roadways, with 12 % that only like riding on roads and do not like any other facility. Bicyclists in the area, especially those that ride for recreation or training prefer riding on shared roadways and feel they have less limitations for speed and destinations using them. Three participants (1.5%) specifically expressed their preference for riding on roadway shoulders.

Even though riding on sidewalks is not allowed in the area, 15% of the respondents (28 people) prefer to have them as part of the bicycle system. Some respondents expressed their fear to ride with traffic, especially in the City of Springfield, and because when there is no other alternative, they ride on sidewalks.

A couple of people that have moved from more bicycle friendly areas such as Palo Alto, CA or Boulder, CO prefer bike avenues, which involve traffic calming strategies.

1.1.7 Perceived Barriers to bicycling

Survey respondents rated how much they thought eight given conditions affected their choice to ride more often.

Lack of shower, lack of bike parking, personal security, and destination too far, were considered as minor barriers to bicycling in the region. Only a minority of the respondents (less than 15%) considered these reasons to affect them extremely or very much.

On the other hand, the lack of bikeways, fear of motor vehicles, difficult intersections and bad weather appear to be major reasons for the respondents not to bike more often. Almost half of the participants cited that these conditions affect their decision to bike more often.

Figure 4 illustrates the perception of the respondents with respect to barriers to bicycling more frequently.

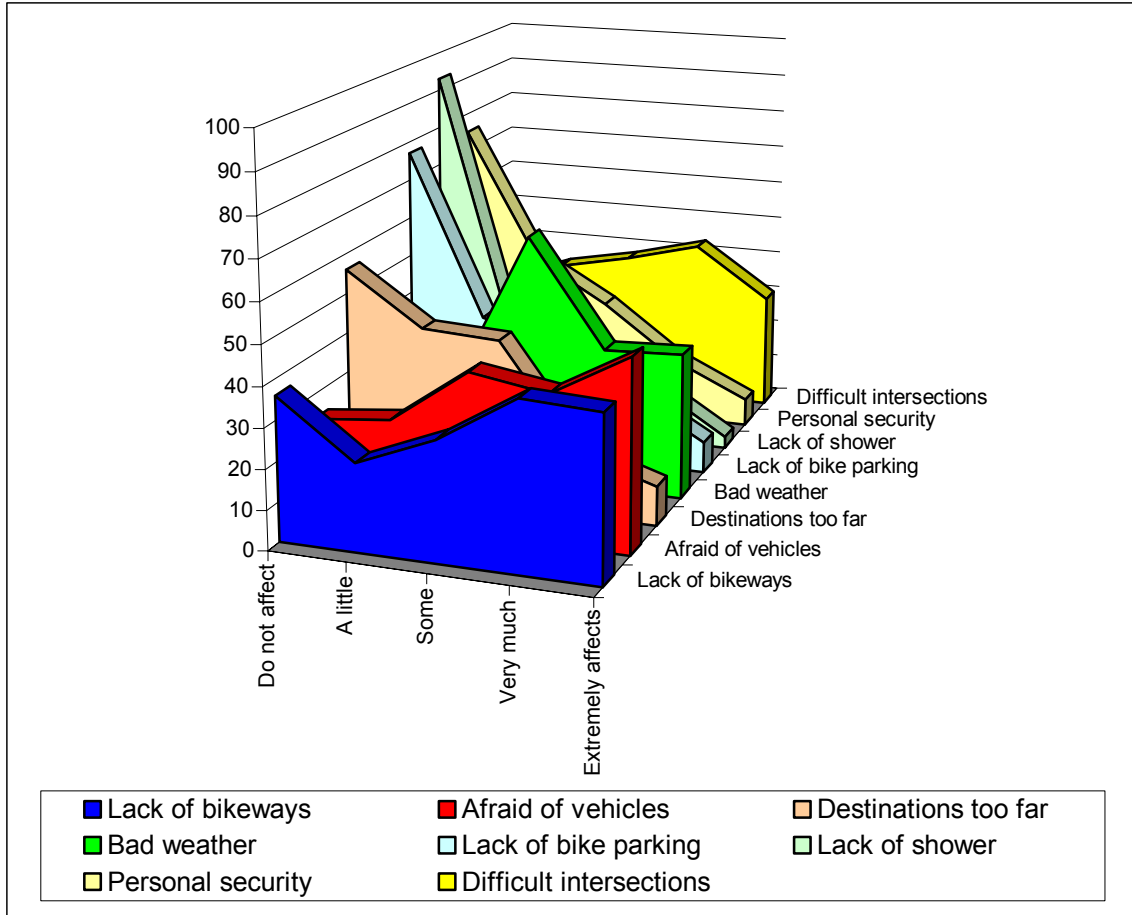


Figure 4 Ranking of barriers to bicycling

1.1.8 Purpose and frequency of bicycle trips

Survey data shows that the most common purpose for riding bikes in the MPO area is for recreation and fitness, followed by commuting to work. More than half of the respondents (107 people) ride at least once a week for recreation and, of those, 31 people ride almost every day. Approximately 1/4th of the respondents (43 people) commute to work at least once a week and, from those, 25 people ride to work almost every day.

Most of this information applies to bicycle season from March to November. However some bicyclists (approximately 5% of the respondents) and especially those without a car use their bicycle for transportation throughout the year.

Table 3 shows for each purpose trip cumulative values of respondents that ride bikes almost every day; at least once a week; and at least once a month.

Table 3 Number and percentage of bicycle trips by purpose and frequency.

Trip Purpose	Almost every day		At least once a week		At least once a month	
	#	%	#	%	#	%
Recreational/Fitness	31	16.3%	107	56.3%	159	83.7%
Commute	25	13.2%	43	22.6%	66	34.7%
School	11	5.8%	14	7.4%	18	9.5%
Church/civic	3	1.6%	5	2.6%	19	10.0%
Shopping	5	2.6%	16	8.4%	53	27.9%
Other errands	8	4.2%	26	13.7%	71	37.4%

1.1.9 Origin and destination of bicycle trips

Because of little participation of citizens from jurisdictions other than the City of Springfield and Greene County the survey could not really show the dynamics of the entire region with respect to the origin and destination of bicycle trips by trip purpose and frequency. However, despite the few responses from these jurisdictions, it can be noticed that bicycling is not only used for recreational purposes, but for other utilitarian trips within the area, such as, long distance commuting, for social purposes and to run some errands.

Figure 5 illustrates bicycle trips by purpose and frequency as reported in the survey. Bicycling for recreation or training is the most common purpose trip in the area. Outside the City of Springfield most of the recreational trips take place on the county roads except for those on the Frisco Highline Trail that currently run from Springfield to Walnut Grove. The most common origins and destinations of the recreational trips are from southeast Springfield to Rogersville, from northeast Springfield to Strafford, Fair Grove and Fellows Lake and from northwest Springfield to Willard and Ash Grove. Most of these trips are popular bike routes used by the bicycle clubs of the area. There were very few commuting trips within MPO jurisdictions reported in the survey. These commuting trips have common destination in the City of Springfield and start at Ozark, Republic, Halltown and Greene County.

Within the City of Springfield, bicycling is popular for all purposes: for commuting to work, running errands, shopping, school and for recreation. 54% of the most frequent bicycle trips made by respondents are within Springfield city limits. Figure 6 zooms into the City of Springfield to identify the most common bicycle destinations such as MSU area, downtown area, Government Plaza, Drury University and OTC area, corridors on South National and South Glenstone, and the Galloway, South Creek Trail Heads.

Figure 5 Map of Bicycle Trip's Origin and Destination (PDF File - 8.5 x 11)

Figure 6 Map of Bicycle Trips Origin and Destination – City of Springfield Inset (PDF File - 8.5 x 11)

General comments and recommendations from the public
 General comments and recommendations from the public were included in the survey by 124 respondents. Table 4 shows the general categories in which each comment was classified. The most common comments were related to education for drivers and bicyclists; the implementation of more separate bike paths or Greenways; more bike lanes; shoulders on roads; the perception that the city streets are unsafe to ride bicycles and that they would ride more often if there were safer bike routes; people also express that they enjoy and love bicycling; and that they were happy that the government is addressing this issue.

Table 4 Comments and Recommendation about bicycling in the MPO Area

Total People	CATEGORIZED COMMENTS
General	
17	Enjoy cycling - Love bicycling
17	Pleased with this planning process. CHEERS
Education	
36	Education to drivers and cyclists
3	Include local media (Radio, TV, newspaper, magazines) in bicycle education
2	Include bicycle education during driver's education and on testing for permits and licenses
2	"Safe Routes to School" programs in all schools
2	Regional maps and information for bicyclists
1	Classes for students or commuters
1	Start a "white bike" project
1	Promote more usage of "bike and bus"
Facilities	
31	More separate bike paths or Greenways
25	More bike lanes on roads
14	Install shoulders on roads
13	Make the roads more bike-friendly
10	Improve Greenway connections
8	More Bike Routes; they are helpful
7	More sidewalks
5	More bicycle racks, secure parking
5	Safe bicycle connection between north and south Springfield
6	Enhance / maintain existing Greenway
5	Enhance existing bike routes / bike lanes
3	Bicycle / pedestrian-friendly bridges
1	Designate "Bike Avenues"
1	Continue installing underpasses through busy streets
1	Place murals along the urban trails
Perceptions and Attitudes	
20	City streets are unsafe (narrow lanes, no shoulders, traffic)
10	Would ride more if there were safer bike routes
7	Prefer to ride on county roads / streets
7	Awareness of bicycling benefits: environment, health, savings \$, quality of life
6	Love Greenways
5	County roads are unsafe (narrow, traffic, no shoulders)
5	Prefer to ride on sidewalks
4	Prefer to ride back or side streets

- 4 Bicycles need to stay off roads
- 3 Not enough time to ride
- 3 Like to be able to commute house-job location
- 2 Prefer to ride on wider roads
- 2 Bicycling is dangerous for older people
- 1 It's great that I can bike and bus
- 1 Ride for exercise and recreation only
- 1 Ozarks beautiful place to ride
- 1 Bicycle-friendly communities are becoming destination cities

Policies

- 5 Need ordinance to control unleashed dogs
- 2 Bicyclists ought to be allowed on sidewalks
- 1 Money should be spent for betterment of roads; not for bicycle facilities
- 1 Provide incentives for developers to set up bike paths
- 1 Require developers to provide bike connections

1.1.10 Recommended roads for bicycling in the area

The survey asked people to recommend routes to be included in the planning process. The map of Recommended Routes for bicycling shows the roads and the amount of people that recommend each segment. The members of the Bicycle Advisory Committee using bicycle suitability criteria such as volume, speed, lane width, and surrounding land use will evaluate these recommended routes. Some of the routes that were highly recommended by the survey respondents are major highways that carry high volume of traffic and speed, connecting in straight line the MPO jurisdictions. These highways are usually not good choices for bicycling. The map also lists bicycle facilities that were recommended on the survey to complement the routes.

Map of Recommended Routes (PDF file 11x17)

Profile of bicycle users in the Ozarks Transportation Organization study area

Table 5 describes the users profile, which was determined using survey data and the comments from survey respondents.

Table 5 Bicycle users profile

USER	TRIP PURPOSE		CHARACTERISTICS	FACILITIES RECOMMENDED
Children Riders (Ages 5-14)	Recreational		Travel in the neighborhood Slow speed Lack of attention Ride with friends	Bike paths Sidewalks
	School and Store		Travel the same route Slow speed Often supervised by an adult	Bike paths Sidewalks
Adult Riders (Ages 15-64)	Sport/competitive Touring bicyclists		Travel long distances at maximum speed Knowledgeable in cycling	Rural shared roads Bicycle Highways.
	Recreational		Rides for fitness or enjoyment Enjoy nature Usually as a family activity	Bike paths
	Work, errands and social activities	A	Advanced or experienced: Comfortable riding in traffic at medium speed, medium to long distances, uses most types of streets. Use proper gear, educated in bike safety.	Shared roadways, bike lanes, bike paths
		B	Basic or less confident: Ride on neighborhood streets with slower traffic volumes and lower speeds. Usually poorly equipped and with little bike education	Bike lanes, bike paths
Senior Riders (Ages 65+)	Recreational		Ride on neighborhood streets with slower traffic volumes and lower speeds or in parks and greenways. Usually poorly equipped and with little bike education	Bike paths
	Errands/social act		On city streets at slower speeds, less distance	Bike lanes, paths

Appendix 1



Ozarks Transportation Organization

Bicycle Public Input Survey

The Ozarks Transportation Organization, which includes *Springfield, Willard, Republic, Battlefield, Nixa, Ozark, Stafford, Greene County and Christian County*, invites you to participate in the public input survey for the first **Regional Bicycle Plan**. This Plan is a framework to guide decision-makers on actions that must occur to improve bicycle transportation. The Regional Bicycle Plan will identify opportunities for coordinated improvements. This Plan will also serve as a tool to obtain bicycle project funding. With the community's input, the Bicycle Plan will be an important step in encouraging more adults and children to bicycle to work, to school, and for recreation in the region, reflecting the real needs of the community.

Please return this survey before march 30th, 2005 to:

<p>MAIL: Ozarks Transportation Organization 840 Boonville Ave. P.O. Box 8368 Springfield, MO 65801-8368 E-MAIL: agiraldo@ci.springfield.mo.us</p>	<p>DROP: Boxes in Bicycle Shops, Community Centers or City Halls. FAX: (417) 864-1881 Attn: Adriana Giraldo TELEPHONE: (417) 864 1032</p>
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1. Do you own a bicycle? Yes No

2. How often do you ride a bicycle for each of the following purposes?

	Never	Rarely Once or twice a year	Sometimes Once or twice a month	Very often Once or twice a week	Usually Almost every day
Social/ Fitness/ Recreational	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commute to Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Church/civic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. What are the three main routes that you use for bicycling? (You may include greenways or bike trails)

	City or County	Street intersection	Main roads, or trails used for the trip
1. From:			
To:			
2. From:			
To:			
3. From:			
To:			

4. What facilities do you prefer to ride your bicycle?

- | | | |
|-----------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------|
| <input type="checkbox"/> Separate bicycle paths or trails | <input type="checkbox"/> Bicycle lanes on roads (striped or marked lanes) | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Sidewalks | <input type="checkbox"/> On roads (shared lane with automobiles) | _____ |

Survey Continues on the back of this page

5. To what extent the following aspects affect your choice for riding bicycles more often?

	Do not affect	A little	Some	Very much	Extremely affects
Lack of bikeways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Afraid of motor vehicles/drivers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destinations too far/ takes too long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficult intersections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bad weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of bicycle parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of shower	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Specify: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Which routes (roads) would you recommend to be included in the bicycle plan in order to connect the following jurisdictions? (See attached map for road names)

	Proposed Routes (roads+trails)
Republic and Battlefield	
Battlefield and Nixa	
Nixa and Ozark	
Ozark and Springfield	
Strafford and Springfield	
Willard and Springfield	
Springfield and Nixa	
Springfield and Ozark	
Springfield and Republic	
Springfield and Battlefield	
Springfield and Rogersville	
Ozark and Rogersville	
Strafford and Rogersville	

7. General Information

a. Do you belong to a bicycle club or organization Yes No Name(s): _____

b. Where do you live? City or County _____

Closest street intersection e.g.: Elm st. & Main Ave. _____

c. Where do you work or go to school? City or County _____

Closest street intersection _____

Sex: Female Male **Ride Transit** Yes No

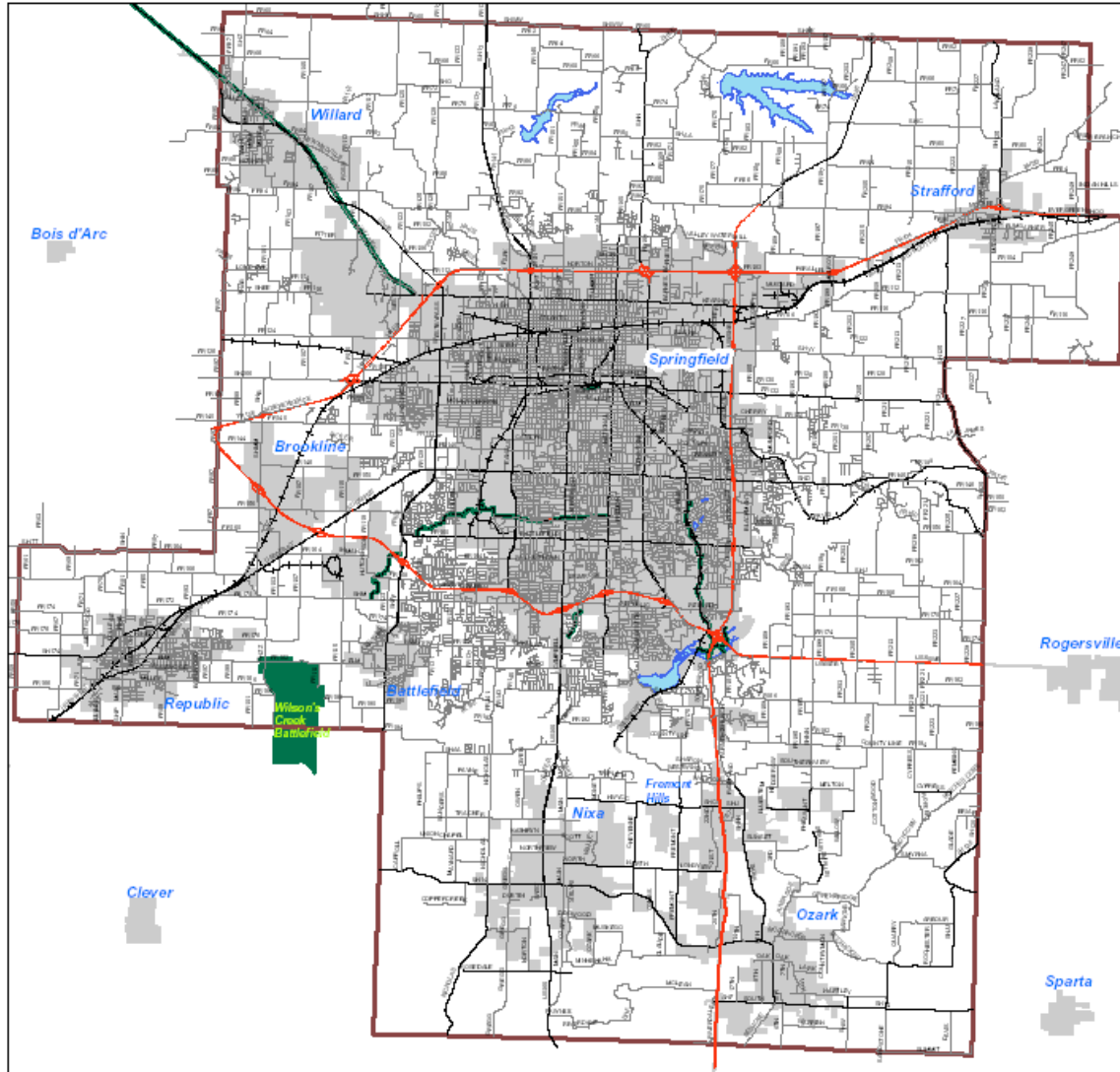
Age: Under 17 18-64 Over 65 **Own car/truck** Yes No



Do you have any general comments related to bicycling? _____

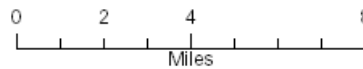
Thank you for your input in creating a bicycle friendly community!



Ozarks Transportation Organization Road Map



-  Interstate and Freeways
-  Major Roads
-  Minor Roads
-  Railroad
-  Greenways Trails



Appendix 2. Bicycle Survey Distribution And Publicity

WEBSITES		
OTO		http://www.ozarkstransportation.org/
Springbike Bicycle Club		http://209.161.105.42/springbike/
Ozarks Greenways		http://www.ozarkgreenways.org/
City of Battlefield		http://www.battlefieldmo.org/pnz/index.htm
CITY HALLS		
City of Battlefield	City Hall, in monthly Newsletter	
City of Republic	City Hall, library	
City of Nixa	City Hall	
City of Willard	City Hall, library	
City of Ozark	City Hall	
City of Strafford	City Hall	
City of Springfield	City Hall	
BIKE SHOPS		
Cycles Unlimited	1254 East Republic Rd. Springfield, MO 65804	
Sunshine Bike Shop	1926 East Sunshine St. Springfield, MO 65804	
A& B Cycle	3620 S National Ave Springfield, MO 65807	
Springfield Bicycle Co	3433 South Campbell Ave, Springfield MO 65807	
Yesterday and Today Bikes	401 S Kimbrough Ave Springfield, MO 65804	
Willard Bicycle Shop	115 East Jackson, Willard MO 65781	
COMMUNITY CENTERS		
Dolling Family Center	301 E. Talmage, Springfield	
Chesterfield Center	2511 W. Republic Road, Springfield	
Killian Sports Complex	2331 E. Pythian, Springfield	
O'Reilly Tefft Gym	1408 E. Pythian, Springfield	
Oak Grove Community Ctr	1538 S. Oak Grove Street	
City of Nixa	Community center	
City of Willard	Community center	
City of Republic	Community Center	
MEETINGS AND EVENTS		
Ozarks Greenways	Annual Meeting (100 members attended)	
Rogersville	Logan-Rogersville Health and Safety Fair.	
OTO	Bicycle Committee members	
OTO	Board and Technical Committee members	
City Utilities	CU transit office, buses and transfer facility.	
Northwest Springfield	Northwest Study Public Hearing, Library Station	
Springbike Bicycle Club	Chili Ride Wesley United Methodist Church, 922 W. Republic Road (30 people attended)	
Springbike Bicycle Club	Monthly meeting at Summer at the river	
Springbike Bicycle Club	Springbike Advocacy Committee Meeting	
Nixa public meeting	Kansas Expwy Extension mtg, Nixa Community Ctr	
SMSU	Email to selected group (staff and students)	
MEDIA		
KY3 News	6 pm (1.5 minutes), 10pm (1.5 minutes)	February 26th
KOLR10 News	6pm (1 minute), 10pm (1 minute)	February 26th
Channel 27	9 pm	February 26th
Channel 33	10 pm.	February 26th
Newsleader	Article (Front Page and 4A)	March 1st
KY3 News	6:00 am, 6:30 a.m, 12 pm	March 2nd
Missouri Bicycle Federation Website:	http://www.mobikefed.org/2005/03/ozarks-transportation-org-creating.html	March 1st

