

**Owensboro-Daviess County
Metropolitan Planning Organization
Bicycle/Pedestrian Master Plan**

June 2018



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Bicycle/Pedestrian Committee members

- | | |
|--|---|
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On the cover: Bicyclists take to the street in downtown Owensboro during the Moonlight Ride in 2015.
Photo courtesy of Owensboro Living Magazine.

I. Overview

More than 40 years ago, Owensboro and Daviess County commissioned a report to study the potential for creating a bicycle network throughout the county.

The 1977 report detailed the problem:

“The existing street system in Owensboro is designed to serve automobile, truck and bus traffic. However, recent national sales trends indicate that the bicycle is on the verge of becoming a viable alternative to these basic forms of motorized travel. Due to obvious problems associated with differences in weight and protection provided by these forms of transportation, there is a great need to provide for safe bicycle facilities, to help avoid bicycle-motor vehicle conflicts. In addition to designing for bicycles within the constraints of the existing transportation system, there is also a need to provide separate independent facilities in certain areas. These independent facilities will serve the bicycle needs when:

- 1. The existing road system cannot be shared; and/or*
- 2. When the existing road system does not provide the desired traveled route.*

An important portion of the Bicycle System Plan might consist of routes for scenic travel, touring and riding-for-the-sake-of-riding trips.”

The goal of this Bicycle/Pedestrian Master Plan is to build upon existing routes that grew out of that original plan and complete a fully integrated bicycle network in the Owensboro-Daviess County Metropolitan Planning Organization (MPO) area.

The MPO is the transportation planning and decision-making organization responsible for ensuring the process is carried out in a comprehensive, cooperative, and continuing manner.

The Bicycle/Pedestrian Committee has served as the steering committee for this study. The committee is comprised of Kentucky Transportation Cabinet (KYTC) Central Office, KYTC District Office 2, the local planning and zoning commission, local bicycle enthusiasts, city and county engineers, local law enforcement and local residents. The committee provided feedback on all aspects of the study including existing system information and proposed improvements. The goal of this report is to provide Owensboro and Daviess County with information on where residents believe bike and pedestrian facilities are in need of improvement. The Bicycle/Pedestrian Committee will continue to meet annually or as needed to assess the developments in bike/pedestrian infrastructure and update lists of priorities as needed.



The Shared-Lane Marking or sharrows reminds drivers that bicyclists may be present and that motorists need to share space with them.

Existing trails

- The Adkisson Greenbelt Park is designed to encircle Owensboro, linking neighborhoods, business districts, parks and schools. Asphalt, 16.9 miles
- The Rudy Mine hiking trails at Ben Hawes Park are three natural surface trails that interconnect. Five natural mountain bike trails combine to offer 7.25 miles of riding.
- Panther Creek Park offers 7.96 miles of trails open to hikers and bikers and 1.75 miles of hiking trails. All trails are mixed surface.
- Yellow Creek Park has 1.75 miles of natural surface trails and 3.66 miles of paved trails.
- Horse Fork Creek Park has one 0.5 mile natural surface trail.

Cycling Activity

Bicycling in the U.S. has shown sharp growth over the past decade. According to the website Statistica.com, there were [47 million bicyclists](#) in the United States in a spring 2008 survey. By 2017, that number had ballooned to 66.2 million riders.

Owensboro-Daviess County has seen similar growth. When Bicycle Owensboro, a group for bicycling enthusiasts, started in 2009, there were 30 members.

Today, Bicycle Owensboro has more than 1,000 members.

Local bicyclists fall into different groups:

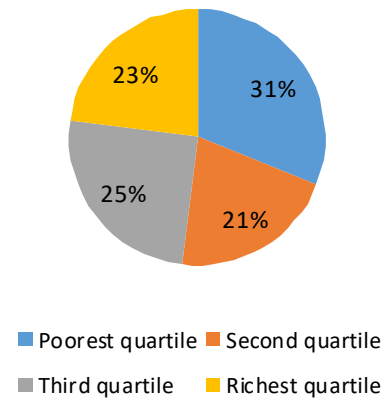
- People who ride for exercise;
- Family groups riding the Greenbelt;
- People who graduate from the Greenbelt and get out on public roads;
- Serious riders who make significant commitments of time and money to riding; and
- People for whom bicycling is their primary form of transportation.

Data produced by environmental reporting and watchdog website [grist.org](#) shows that bicycling appeals to all socioeconomic groups, with a slight bias toward the lowest income level. A study of 2009 data sorted bicycle trips by income. It found that 31 percent of all trips were taken by people in the poorest quarter of the U.S. population, while the people in the richest quarter accounted for 23 percent of bicycle trips.

Bicycle Owensboro officials say growth along KY 54 and US 231 has emphasized need for bicycle infrastructure along those roads. KY 54 has seen growth in residential and retail development over the last decade, while US 231 is the site of five schools — Country Heights Elementary School, College View Middle School, Daviess County High School, the Owensboro Community and Technical College and Western Kentucky University-Owensboro — that are not easily accessible to bicyclists or pedestrians.

Who's riding?

Share of U.S. bike trips, by income level



Owensboro-Daviess County Health Data

Adult obesity	30% of residents
Physical inactivity	24% of residents
Have access to exercise	76% of residents
Poor or fair health	17% of residents

Source: Robert Wood Johnson Foundation

Four benefits of biking

- **It's easier on the joints:** Sitting on a bike shifts the weight from the legs to bones in the pelvis, easing joint pain or age-related stiffness.
- **It's an aerobic workout:** Such exercise burns calories and improves health of things such as the heart and brain. It also releases endorphins, which generate a feeling of pleasure.
- **It builds muscle:** Pedaling works the muscles in the calves, thighs, hips and buttocks. Abdominal muscles work to keep the body upright and balanced, while holding the handlebars and steering exercises the arms and shoulders.
- **It builds bone:** Bicycling is a resistance activity. It pulls on the muscles, which pull the bones. That helps increase bone density.

Source: Harvard Medical School [interview](#) with Dr. Clare Safran-Norton, a physical therapist at Brigham and Women's Hospital in Boston

Purpose of Planning for Bicycle and Pedestrian Facilities

MPOs are required by federal transportation planning regulations to develop plans that include “strategies and actions for the development of an integrated multimodal transportation system, including accessible pedestrian walkways and bicycle transportation facilities.”

MPO’s Metropolitan Transportation Plan (MTP) recommended that a study be conducted to define the need for such facilities in the MPO area. Based on the increasing popularity of walking/running and the increasing number of cyclists on the roads, the MPO determined it to be beneficial that bicycle and pedestrian facilities become an integral part of the community. The purpose for developing this Master Plan is to prepare a comprehensive network of routes and serve as a guide for future facility improvements.

Health Data to Support Active Lifestyles

Many communities in the United States and around the world are implementing bicycle, pedestrian and other recreational facilities to encourage their citizens to become active. According to [2017 data](#) from the Robert Wood Johnson Foundation, 17 percent of Daviess County residents are in fair or poor health.

In 2017, Forbes magazine reported on research about the benefits of walking and bicycling that was published in the British Medical Journal.

The [research found](#) that people who bicycled to work had a 41 percent lower risk of dying from all causes than those who used motorized transportation. Bicycle commuters had a 46 percent lower chance of developing cardiovascular disease and a 52 percent lower chance of dying of it.

Cancer rates were lower among bicycle commuters as well. They had a 45 percent lower risk of developing cancer and a 40 percent lower chance of dying of it.

Walking to work was also found to have health benefits. Walkers were 27 percent less likely to develop cardiovascular disease and 36 percent lower chance of dying of it.

Air Quality

The U.S. EPA rates a community’s air quality based on the levels of six pollutants — Carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulfur dioxide. It’s a pass-fail ranking — a community is rated as being either in attainment or not. While the Owensboro-Daviess County MPO is considered in attainment and the American Lung Association gives the MPO a [grade of B](#) for ozone, the EPA recorded the [MPO’s ozone level](#) at 0.068 parts per million for 2014-2016. The threshold for ozone attainment is 0.07.

II. Goals

The 1977 task force developed a set of goals for the bicycle network:

- 1. Provide the facilities necessary to promote the bicycle as a viable mode of transportation;*
- 2. Link the existing major bike trip generators: schools, parks, and recreation areas. Future system expansion should be linked to future potential generators including major employment centers;*
- 3. Maximize safety, accessibility to generators, and aesthetics;*
- 4. Be realistically and economically feasible to ensure and encourage implementation; and*
- 5. Include: The physical route network, safety/educational program, legal code development and bike-promoting activities.*

In its efforts to improve and increase bicycling in the community, the 2017/2018 Committee will develop a set of goals and related objectives.

GOAL 1: Develop a network that is integrated into the transportation network and is safe and convenient for bicyclists and pedestrians.

Objectives

- Define bicycling and walking networks that include on-street and bicycle trail facilities, as well as walking trails and sidewalks to serve the transportation and recreational needs of all ages.
- Identify gaps in the network and propose routes to link all areas of the city to the Greenbelt and downtown.
- Increasing connections to school, parks and other high-traffic destinations.
- Analyze proposed highway projects to determine where paths can be incorporated or improvements made.

GOAL 2: Identify and secure adequate funding for improvements.

Objectives

- Identify and pursue local, state and federal sources of funding for bicycle and walking networks.
- Advise local governments of upcoming deadlines for programs that fund improvements.
- Where possible, incorporate networks into highway improvements identified through the MPO planning process.

GOAL 3: Promote and encourage bicycle safety, education and enforcement programs.

Objectives

- Promote and encourage safety programs, such as Safe Routes to School, for bicyclists, walkers, law enforcement agencies and motorists for sharing roadways and shared-use paths.
- Partner with community agencies to promote bicycle and walking safety education programs.
- Ensure all projects improve connectivity and enhance the safety of bicyclists, walkers and other traffic.

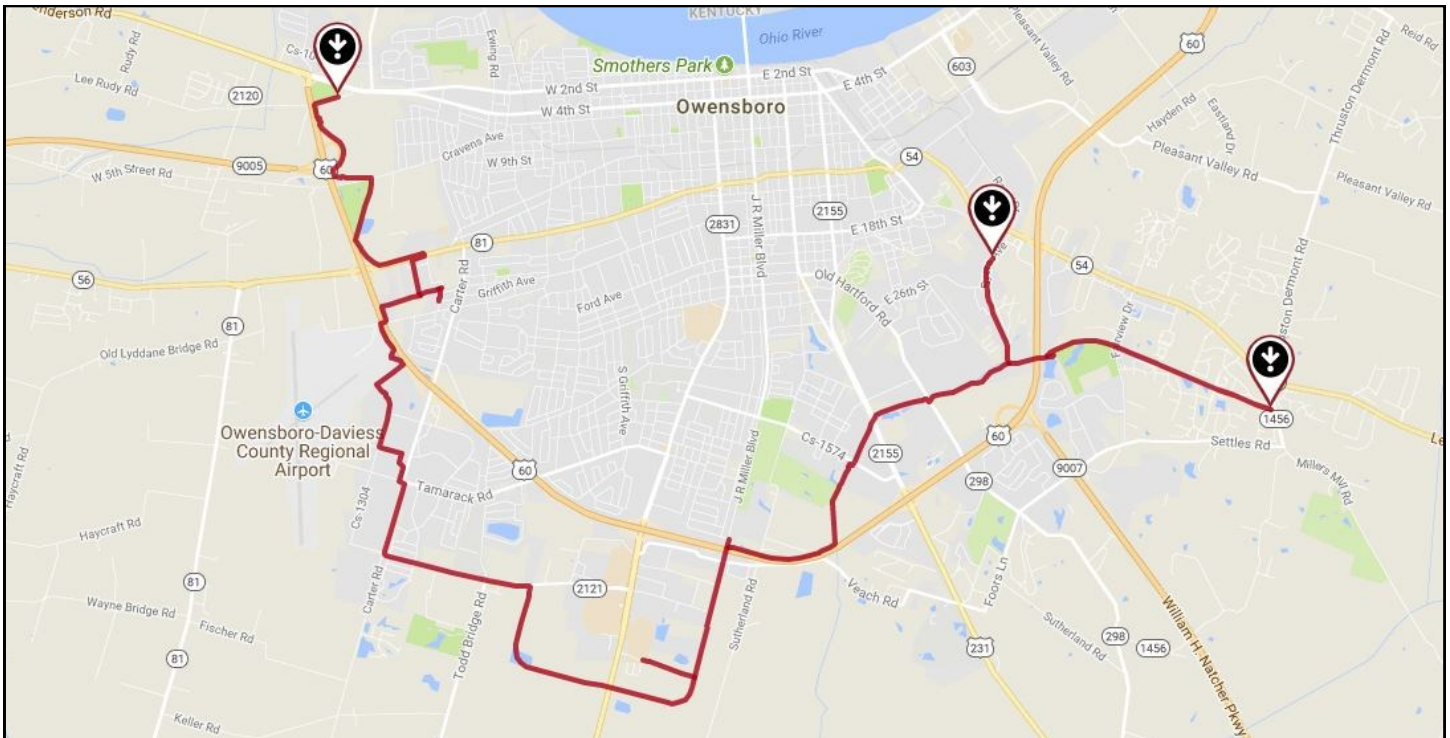
III. Connectivity

The Adkisson Greenbelt encircles almost the entirety of the City of Owensboro and the marked sharrow route along Daviess Street bisects the city from north to south. This configuration provides a safe route around the city and provides access to downtown. However, the relatively few connections to these paths make getting from Daviess Street into the eastern or western half of the city (and getting from areas in the eastern and western portion TO Daviess) difficult. Also, once downtown, there is no marked path out of the area, other than turning around and going back up Daviess Street. Currently, the only marked access to Daviess Street is Byers Avenue, which connects to the Greenbelt in the east and to Tamarack Road in the west. Tamarack then connects to the Greenbelt.

Projects proposed on Page 17 would address some of these issues.

A route beginning at West 5th Street Road, would have sharrow markings added to provide access to downtown Owensboro. The route would extend along West 5th Street to Castlen Street, which intersects 1st Street. The route would terminate at the downtown district.

A second route — located between West 5th Street and Tamarack — would provide a third connector on the west side of



The Adkisson Greenbelt Park is a shared-use path which encircles the majority of Owensboro.

town. The route would begin near the Greenway terminus at Russell Shifley Park and follow Bittel Road to Oxford Drive continuing on to Ford Avenue and ultimately connecting with Daviess Street. A proposed route along Lewis Lane would link Ford Avenue and Tamarack Road, providing an alternate north-south route on the west side of the city.

The eastern side of the city and county is more problematic. While there are nearly a dozen routes proposed in the county, none come into the east side of Owensboro. The closest is a proposed route stretching from Chautauqua Park east into the county along KY 54. Because of the nature of the development on that side of the city, few streets stretch through it. Parrish Avenue and 18th Street stand out among the few exceptions. Both of these roads could connect Daviess to the eastern part of the city and county, but traffic volumes make them less attractive candidates for inclusion in the bicycle network. There are no easy answers to this. Any route is likely to be convoluted and awkward.

Having studied the problem from all angles, the Committee suggests identifying an “eastern corridor” between 4th and 27th Streets to provide eastern access. (See map on Page XX.) Development or redevelopment inside this corridor could be required to add accommodations for bicyclists and pedestrians.

IV. Bike Network

For the purpose of this plan, both on-road and off-road networks have been considered. The following are items to be considered for all networks.

Shared Lanes are roadways, either marked or unmarked, that are general-purpose travel lanes. Lanes may be marked with shared lane markings (SLMs, also referred to as sharrows) to encourage bicycle travel and proper positioning within the lane. Sharrows alert road users to the lateral position bicyclists are likely to occupy within the traveled way, therefore, encouraging safer passing practices.

Although all roads are considered shared lanes unless prohibited, sharrows are most appropriate on roads with a posted speed of 35 mph or lower, lower vehicle traffic (5,000 to 8,000 cars per day) very low semi- truck traffic (150 trucks per day) and provides accommodating and safer routes to preferred destinations. The City of Owensboro maintains approximately six miles of roads with shared roadway markings. Among them are Tamarack Road, Byers Avenue and Daviess Street. In constrained conditions, the sharrows are placed to discourage unsafe passing by motor vehicles. On a wide outside lane, the shared lane markings can be used to

promote bicycle travel next to (to the right of) motor vehicles.

Shared-Use Paths are multiuse trails or other paths, physically separated from motorized vehicular traffic by an open space or barrier, either within a highway right-of-way or within an independent right-of-way, and usable for transportation purposes. Shared-use paths may be used by pedestrians, bicyclists, skaters and other nonmotorized users. Owensboro-Daviess County is home to such a network. The Adkisson Greenbelt Park is a paved trail roughly encircling Owensboro, suitable for walkers, bicyclists and skaters.

Bicycle Lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. The bicycle lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge or parking lane.

Paved Shoulders are the part of the roadway that is adjacent and contiguous to the regular travel lanes. This portion of the roadway can be used by bicyclists. Paved shoulders can be an appropriate bicycle facility along roadways that do not have curbs and gutters but have open drainage. Shoulders need to be swept on a regular basis and plowed as needed, otherwise debris and trash and snow accumulates on the shoulder and riders will not be able use the space. There are numerous miles of paved shoulder access scattered around the county, with sections on roads such as West Second Street, US 431 and New Hartford Road.

Trails are paths that are either dirt, gravel or paved and accommodate the movement of people, mainly either by foot or bicycle.

Parking is one of two main components of any bicycle trip: the route selected by the bicyclist and the “end-of-trip” facilities at the destinations, such as safe and secure bicycle parking. The availability of secure and convenient parking is critical to bicyclists. The availability of short- and long-term bicycle parking at key destinations such as parks, schools, community facilities, and shopping centers is a vital part of a complete bicycle network.

Signage is a key component of a safe bicycle system. Proper signage is important to the bicyclist and the motor vehicle operator. There are various types of signs that can be utilized depending on the type of roadway and the traveling conditions. *Share the Road* signs are intended to alert the motorists that bicyclists may be encountered. Another sign that may be utilized is the *Bicycles May Use Full Lane* sign.

These signs are typically used on roadways where travel lanes are too narrow for bicyclists and motorists to operate side by side within a lane. Purchase and installation of such signs typically costs \$150 each.

V. Pedestrian Traffic

According to Fitbit, walking is by far the most popular form of exercise in the U.S. The company surveyed more than a million used over a four-year period — January 2010 through December 2014. [They found](#) that more than 70 percent of users walked for exercise.

There are 355 miles of sidewalks in Daviess County — 286 in the city and 69 in the county. The Planning Division of the Owensboro Metropolitan Planning Commission administers city-county development regulations which require developers to add sidewalks to residential properties of less than one-half acre in size and all business development, at the discretion of the OMPC.

Those 355 miles are getting a workout. According to the Owensboro Area Runners and Walkers Club these are reasons people choose walking and running as a form of exercise:

- It's easy — All you have to do is walk out your door and go. It takes a lot less discipline than joining a gym;
- It's inexpensive — other than a pair of shoes, no special equipment is needed;
- It's convenient — Walkers can get their steps walked during a lunch hour; and
- It's accessible — Walking and running groups are becoming common in the community. There are options ranging

from a group that meets at 5:29 a.m., for morning exercise to evening running groups.

Neither the city nor county is adding to its sidewalk inventory at this time. However, the City of Owensboro has committed a pool of revenue to rehabilitate existing sidewalks. The city's sidewalk committee meets at least once a year to evaluate the sidewalks in the city's Neighborhood Alliance areas. Based on those evaluations, the city prioritizes repairs. The engineering department begins work in the area in which the sidewalks received the worst evaluation and remains working in that Neighborhood Alliance area until all needed repairs are complete. Work crews then move to the Neighborhood Alliance area with the next worst sidewalk rating. This continues as time and money allow.

Daviess County, on the other hand, does not install or repair sidewalk except under very specific circumstances.

Any development in the county, but outside the Owensboro and Whitesville city limits, is required to install sidewalks within five years of project approval. If a developer fails to do so, the county may install the sidewalk and bill the developer. Owners of property abutting public sidewalks in this same area can, by county ordinance, be required to maintain the sidewalk at their expense. If they fail to do so, the county can choose to make needed repairs and bill the property owners to recoup the cost.

An online survey conducted by the Owensboro-Daviess County MPO found that among respondents, the vast majority of people walking in the community were recreational/exercise walkers.

- Of the 733 people responding to a question about why they walked, 716 or 97.6 percent said recreation/exercise.
- Nearly 2 percent (14 respondents) said they walked to shop, while less than half of one percent (0.4 percent or three respondents) said they walked to work.
- More than 70 percent said they walk in their neighborhood, nearly 17 percent said they walk on the Greenbelt. The remaining 12 percent prefer to walk in a city or county park.

Slightly more than half of all respondents said they felt safe from traffic walking their neighborhood. Of the 759 people who answered the question, 401 (53 percent) said thinking strictly of traffic, they felt "very safe" walking in their neighborhood. Another 208 respondents (27 percent) said they felt "somewhat safe." Ninety people said they did not feel very safe from traffic walking in their neighborhood.

Safety in getting to the city's Greenbelt walking/biking trail appears to be of greater concern. Of the 744 people who answered a question about feeling safe from traffic while walking to the Greenbelt, a full 50 percent (374 votes) said they feel that walk is "not very safe." Another 10 percent (80 votes) said they felt "a little safe" walking to the Greenbelt from their home. Twenty percent (148 votes) said they felt somewhat safe in walking to the Greenbelt. Only 19 percent of respondents (142 votes) said they felt "very safe" in walking from their home.

This result was reflected in a separate question asking where respondents felt sidewalks were needed. They identified 87 streets or locations they felt would benefit from the addition of sidewalks. With 423 total votes cast, connections to the Greenbelt was the second-highest vote getter, with 35 votes.

A selection of these responses included:

- "To get to the green belt on sidewalks, Bittel Road"
- "All roads that lead to the green belt would benefit from having sidewalks connect to it"
- "Landsdowne area to the Greenbelt"
- "(F)rom Leitchfield Rd to Waterwheel Way Also Old Hartford from Cross Creek subdivision to the Greenbelt or a connector in the back from Cross Creek to the Greenbelt"
- "More sidewalks or walking trails from the county to the Greenbelt would be great!"
- "Fairview can't get to the greenbelt safely"
- "There needs to be a sidewalk from the Green Belt to Legion Park down J.R. Miller Blvd. There is LOTS of foot traffic each day in this area, and the pedestrians either walk in the road on or grass/mud alongside the road."
- "have a bike/walking path along 54 to greenbelt"

Griffith Avenue was the top vote-getter, with 39 people asking that sidewalks be added. Several voters mentioned wanting to be able to appreciate the beauty of the neighborhood and the dogwoods and azaleas that bloom along the street in the spring.

Other frequently mentioned streets included:

Old Hartford Road/U.S. 231 (29 votes);
Ford Avenue (21);
There were eight votes for “the area around the Healthpark,” which is on Ford Avenue
Kentucky 54 (21);
Fairview Drive (20);
J.R. Miller (16);
Frederica Street (14);
The area around Legion Park (11);
Tamarack Road (11)

Complete results of the survey can be found on pages 19-22. A complete lists of locations where sidewalks were recommended can be found on pages 23-24.

While neither the City of Owensboro nor Daviess County are adding new sidewalks, this list was compiled to suggest possible locations should funding for new sidewalks become available. A list of potential funding for Bicycle/ Pedestrian projects can be found on pages 13-14.

VI. Implementation

The implementation of the proposed bicycle and pedestrian network improvements will be a shared responsibility amongst private development, the City of Owensboro, Daviess County and the Commonwealth of Kentucky.

Highway Project Development

Bicycle networks can best be implemented when a major construction project is planned for a specific roadway. During the project development and prioritization processes, bicycle facilities should be considered, where practical. The MPO, in conjunction with KYTC District 2, develop Project Identification Forms (PIFs) for all Unscheduled Needs List projects. This is a perfect time for bicycle facilities to be considered for future projects.

Road Resurfacing

Resurfacing of roadways are excellent opportunities to consider the implementation of recommendations for bicycle facilities. They can be implemented at a nominal additional cost to the project. These may include:

- Restriping of lanes to accommodate bicycles;
- Adding signage; and/or
- Adding sharrows (shared lane markings) at proper locations.

This plan should be consulted with applicable resurfacing projects to coordinate the implementation of bicycle facilities.

Share the Road Signage

Share the road signs are intended to alert motorists that bicyclists may be encountered and that they should be mindful and respectful of bicyclists. These signs are not a substitute for appropriate geometric design measures that can improve the quality of service for bicyclists. The sign should not be used to address reported traffic operational issues, as the addition of this warning sign will not significantly improve bicycling conditions. Guidance should be consulted prior to installing these signs to ensure that proper use is followed.

Sharrows (Shared Lane Markings)

In situations where it is desirable to provide a higher level of guidance to bicyclists and motorists, shared lanes may be marked with a pavement marking symbol known as a sharrow. This type of symbol is useful in locations where there is insufficient width to provide bike lanes. The marking also alerts road users to the lateral position bicyclists are likely to occupy within the traveled way, therefore, encouraging safer passing practices.

Sidewalk repair

While new sidewalks are not a possibility at this time, repair of existing infrastructure can make walking and biking safer. Cracked or broken sidewalk or sidewalk dislocated by tree roots create safety hazards for both pedestrians and those on bikes. They can not only be injured by tripping or crashing on those obstructions but they may choose to walk, run or ride in the street to avoid hazards, increasing the risk of a collision with passing vehicles.

VII. Funding and Grants

A number of federal transportation grant programs are administered by KYTC and the Office of the Governor — Department of Local Government. Grant funds generally require that local governments provide funding for 20 to 50 percent of project costs. Here is a selection grant programs for bicycle and pedestrian projects. A more complete list is included on pages 13-15:

Transportation Alternatives Program (TAP)

The Fixing America's Surface Transportation (FAST) Act replaced the [Transportation Alternatives Program](#) (TAP) with a set-aside of funds under the Surface Transportation Block Grant Program. According to its website, "Funding is authorized for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity; recreational trail projects; safe routes to school projects; and projects for planning, designing or constructing boulevards and other roadways largely in the right-of-way of former divided highways." According to the site, \$850 million has been allocated nationwide for projects in each of 2018, 2019 and 2020. Kentucky receives about \$12 million annually from this program.

Recreational Trails Program (RTP)

[The Recreational Trails Program](#) provides funds to the states to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses. Federal transportation funds benefit recreation including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles. According to [data](#) from its site, Kentucky was in line to receive \$1.4 million in FY 2017.

Land and Water Conservation Fund (LWCF)

According to the National Park Service website, the [Land and Water Conservation Fund](#) "was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard our natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. Using zero taxpayer dollars, the fund invests earnings from offshore oil and gas leasing to help strengthen communities, preserve our history and protect our national endowment of land and water. Grants are available for the acquisition of land for parks and recreation facilities as well as site development.

Congestion Mitigation & Air Quality (CMAQ)

[Congestion Mitigation & Air Quality](#), also under the umbrella of the Federal Highway Administration, is designed to help communities reach attainment under the National Ambient Air Quality Standards. As part of the effort, the CMAQ was created "to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief." Between \$2.3 and \$2.5 billion has been allocated for each year of its authorization — 2016 through 2020. It should be noted that while the Owensboro-Daviess County MPO area is in air quality attainment, it is still eligible for CMAQ grants because it was in nonattainment in the [early 90s](#) and its attainment is considered "Marginal." Kentucky receives about \$14 million annually in CMAQ funding.

Pedestrian and Bicycle Funding Opportunities

U.S. Department of Transportation Transit, Highway, and Safety Funds

Revised August 12, 2016

This table indicates potential eligibility for pedestrian and bicycle projects under U.S. Department of Transportation surface transportation funding programs. Additional restrictions may apply. See notes and basic program requirements below, and see program guidance for detailed requirements. Project sponsors should fully integrate nonmotorized accommodation into surface transportation projects. Section 1404 of the Fixing America's Surface Transportation (FAST) Act modified 23 U.S.C. 109 to require federally-funded projects on the National Highway System to consider access for other modes of transportation, and provides greater design flexibility to do so.

Key: \$ = Funds may be used for this activity (restrictions may apply). \$* = See program-specific notes for restrictions. ~\$ = Eligible, but not competitive unless part of a larger project.															
Pedestrian and Bicycle Funding Opportunities															
U.S. Department of Transportation Transit, Highway, and Safety Funds															
Activity or Project Type	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTP
Access enhancements to public transportation (includes benches, bus pads)	\$	\$	\$	\$	\$		\$	\$	\$						\$
ADA/504 Self Evaluation / Transition Plan								\$	\$	\$		\$			\$
Bicycle plans				\$				\$	\$		\$	\$			\$
Bicycle helmets (project or training related)								\$	\$SRTS		\$		\$*		
Bicycle helmets (safety promotion)								\$	\$SRTS		\$				
Bicycle lanes on road	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$				\$
Bicycle parking	~\$	~\$	\$	\$	\$		\$	\$	\$	\$	\$				\$
Bike racks on transit	\$	\$	\$	\$	\$			\$	\$						\$
Bicycle share (capital and equipment; not operations)	\$	\$	\$	\$	\$		\$	\$	\$						\$
Bicycle storage or service centers at transit hubs	~\$	~\$	\$	\$	\$			\$	\$						\$
Bridges / overcrossings for pedestrians and/or bicyclists	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Bus shelters and benches	\$	\$	\$	\$	\$		\$	\$	\$						\$
Coordinator positions (State or local)					\$ 1 per State			\$	\$SRTS		\$				
Crosswalks (new or retrofit)	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Curb cuts and ramps	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Counting equipment			\$	\$		\$	\$	\$	\$	\$	\$	\$*			\$
Data collection and monitoring for pedestrians and/or bicyclists			\$	\$		\$	\$	\$	\$	\$	\$	\$*			\$
Historic preservation (pedestrian and bicycle and transit facilities)	\$	\$	\$	\$				\$	\$						\$
Landscaping, streetscaping (pedestrian and/or bicycle route; transit access); related amenities (benches, water fountains); generally as part of a larger project	~\$	~\$	\$	\$			\$	\$	\$						\$
Lighting (pedestrian and bicyclist scale associated with pedestrian/bicyclist project)	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Maps (for pedestrians and/or bicyclists)			\$	\$	\$			\$	\$		\$				
Paved shoulders for pedestrian and/or bicyclist use	\$	\$			\$*	\$	\$	\$	\$		\$	\$*			\$

Key: \$ = Funds may be used for this activity (restrictions may apply). \$* = See program-specific notes for restrictions. ~\$ = Eligible, but not competitive unless part of a larger project.															
Pedestrian and Bicycle Funding Opportunities															
U.S. Department of Transportation Transit, Highway, and Safety Funds															
Activity or Project Type	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTTP
Pedestrian plans			\$						\$		\$	\$			\$
Recreational trails	~\$	~\$							\$	\$					\$
Road Diets (pedestrian and bicycle portions)	\$	\$				\$	\$	\$	\$						\$
Road Safety Assessment for pedestrians and bicyclists						\$		\$	\$			\$			\$
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike safety								\$SRTS	\$SRTS		\$	\$*	\$*	\$*	
Safety education positions									\$SRTS	\$SRTS	\$		\$*		
Safety enforcement (including police patrols)									\$SRTS	\$SRTS	\$		\$*		
Safety program technical assessment (for peds/bicyclists)									\$SRTS	\$SRTS	\$		\$*	\$*	
Separated bicycle lanes	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$				\$
Shared use paths / transportation trails	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Sidewalks (new or retrofit)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$
Signs / signals / signal improvements	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$				\$
Signed pedestrian or bicycle routes	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$				\$
Spot improvement programs	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Stormwater impacts related to pedestrian and bicycle projects	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Traffic calming	\$	\$	\$			\$	\$	\$	\$		\$				\$
Trail bridges	\$	\$			\$*	\$	\$	\$	\$	\$	\$				\$
Trail construction and maintenance equipment								\$RTP	\$RTP	\$					
Trail/highway intersections	\$	\$			\$*	\$	\$	\$	\$	\$	\$				\$
Trailside and trailhead facilities (includes restrooms and water, but not general park amenities; see guidance)	~\$*	~\$*						\$*	\$*	\$*					\$
Training						\$			\$	\$	\$	\$*	\$*		
Training for law enforcement on ped/bicyclist safety laws								\$SRTS	\$SRTS		\$			\$*	
Tunnels / undercrossings for pedestrians and/or bicyclists	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$			\$*	\$

Abbreviations

ADA/504: Americans with Disabilities Act of 1990 / Section 504 of the Rehabilitation Act of 1973	TA: Transportation Alternatives Set-Aside (formerly Transportation Alternatives Program)
TIGER: Transportation Investment Generating Economic Recovery Discretionary Grant program	RTP: Recreational Trails Program
TIFIA: Transportation Infrastructure Finance and Innovation Act (loans)	SRTS: Safe Routes to School Program / Activities
FTA: Federal Transit Administration Capital Funds	PLAN: Statewide Planning and Research (SPR) or Metropolitan Planning funds
ATI: Associated Transit Improvement (1% set-aside of FTA)	NHTSA 402: State and Community Highway Safety Grant Program
CMAQ: Congestion Mitigation and Air Quality Improvement Program	NHTSA 405: National Priority Safety Programs (Nonmotorized safety)
HSIP: Highway Safety Improvement Program	FLTTP: Federal Lands and Tribal Transportation Programs (Federal Lands Access Program, Federal Lands Transportation Program, Tribal Transportation Program, Nationally Significant Federal Lands and Tribal Projects)
NHPP: National Highway Performance Program	
STBG: Surface Transportation Block Grant Program	

Program-specific notes

Federal-aid funding programs have specific requirements that projects must meet, and eligibility must be determined on a case-by-case basis. For example:

VII. Maintenance

With the proposed projects for the bicycle network, the maintenance plan of each project will need to be incorporated in the design of each project. Budgets, new policies, new ordinances, and other issues will determine how much maintenance can be applied to new future projects.

Sharrow projects

Roadways designated for sharrow projects would have either thermoplastic or paint applied to the street. Sharrows will need to be inspected and replaced similar to all other road pavement markings and road signage. Since the sharrows are part of the roadway instead of being separated as to the shared use path, extra road maintenance will need to be part of the plan. Potholes and drainage issues would need to be monitored and addressed more frequently than regular road maintenance. Improved street cleaning, more road maintenance of streets that become sharrow paths (signs and pavement), and keeping current road paths clear of obstructions are items that will need to be addressed for new sharrow projects.

Paved Shoulder projects

With the paved shoulder projects entailing new shoulder pavement adjacent to the travel way, maintenance of new shoulders will need to be similar to the road. The shoulders will need to be cleaned and swept on a regular basis to keep them clear of obstructions; improved street cleaning needs to be applied and road maintenance will need to be addressed in each paved shoulder project. Similar to the roads, potholes and drainage issues would need to be monitored and addressed more frequently than regular road maintenance.

Shared-Use Path projects

Even though the shared-use path is separated from the vehicular traveled way, normal maintenance will need to be addressed — they would not be cleaned by street sweepers, they would not be plowed along with the roads in winter and repairs would not be a part of routine road maintenance. Improved cleaning, keeping the path clear of obstructions and maintenance of new paths will need to be addressed with the design of each project.

Signage

New signage on any new project will require routine inspection and replacement on an as-needed basis.

IX. Map Data

The data on Pages 16-18 relate to the bicycle facilities map that accompanies this document.

Bicycle projects lists

Page 16 contains the proposed projects list. The MAP SITE number can be used to locate the project site on the maps. Page 17 contains a ranking of projects, as determined by the Bike/Pedestrian Committee.

Pedestrian projects lists

Pages 23-24 contains the list of streets or areas where residents suggested additions to the sidewalk network.

Area destinations

Page 18 is a listing of destinations in the community. These destinations are identified on the both the bike and sidewalk maps and are type-sorted by color.

- Red = retail center
- Blue = medical facilities
- Green = parks
- Brown = recreational space
- Yellow = schools
- Grey = locations that don't fall into other categories, such as the Daviess County Public Library.

Owensboro-Daviess County Bicycle Master Plan Proposed Projects

Map site	Location	Begin	End	Length (miles)	Project Description
1	1st St. W	Elm St.	Hanning Lane	0.55	Sharrows
2	4th St. W	Carter Road	GRADD Way	0.62	Shared-Use Path
3	5th St. W	Castlen St.	Omega St.	0.57	Sharrows
4	Bittel Road	Dallas Ave.	Bosley Road	0.78	Sharrows
5	Byers Ave. E	Patriot Run	KY 54	0.11	Shared-Use Path
6	Carter Road	4th St. W	Thompson-Berry Park	0.26	Sharrows
7	Castlen St.	1st St. W	5th St. W	0.30	Sharrows
8	Cravens Ave.	Carter Road	Omega St.	0.54	Sharrows
9	Daniels Lane	Hospital	Daniels Lane	0.49	Shared-Use Path
10	East Daviess County	Gateway Commons	Reid Road	2.12	Shared-Use Path
11	Fairview Drive	Greenbelt	Kentucky 54	0.43	Paved Shoulders or Shared-Use
12	Ford Ave.	Daviess St.	Oxford Drive	1.50	Sharrows
13	Frederica St.	Theater Way	MLK Loop	0.25	Paved Shoulders
14	Gateway Commons	Kentucky 54	Hayden Road	0.54	Shared-Use Path
15	Hanning Lane	Lock Ave.	1st St. W	0.21	Sharrows
16	Kentucky 54	Alvey Park Dr. W	Countryside Dr.	2.55	Shared-Use Path
17	Kentucky 603	Pleasant Valley Road	Lagoon Lane	0.57	Paved Shoulders
18	Lagoon Lane	Parrish Ave. E	Kentucky 603	1.04	Shared-Use Path
19	Lewis Lane	Ford Ave.	Tamarack Road	1.11	Sharrows
20	Millers Mill Road	Greenbelt	KY 54	0.21	Paved Shoulders or Shared-Use
21	New Hartford Road	Southeastern Pkwy.	Harmony Drive	3.49	Paved Shoulders or Shared-Use
22	Old Hartford Road	Liberty Pt.	Southeastern Pkwy.	0.13	Paved Shoulders
23	Old Hartford Road	Greenbelt	26th St. E	0.74	Paved Shoulders
24	Omega St.	Cravens Ave.	5th St. W	0.06	Sharrows
25	Oxford Dr.	Bittel Road	Ford Ave.	0.14	Sharrows
26	Parrish Ave. E	Leitchfield Road	Byers Ave. E	1.09	Shared-Use Path
27	Pleasant Valley Road	Hospital	Kentucky 603	0.35	Paved Shoulders
28	Reid Road	Yellow Creek Park	Shared Use Path of Reid Road	0.47	Paved Shoulders or Shared-Use
29	Todd Bridge Road	Southtown Blvd.	Waymond Morris Park	0.44	Paved Shoulders or Shared-Use
30	Carter/Southtown				Add signage for driver awareness

Projects are listed are alphabetical, and do not represent any prioritization of projects.

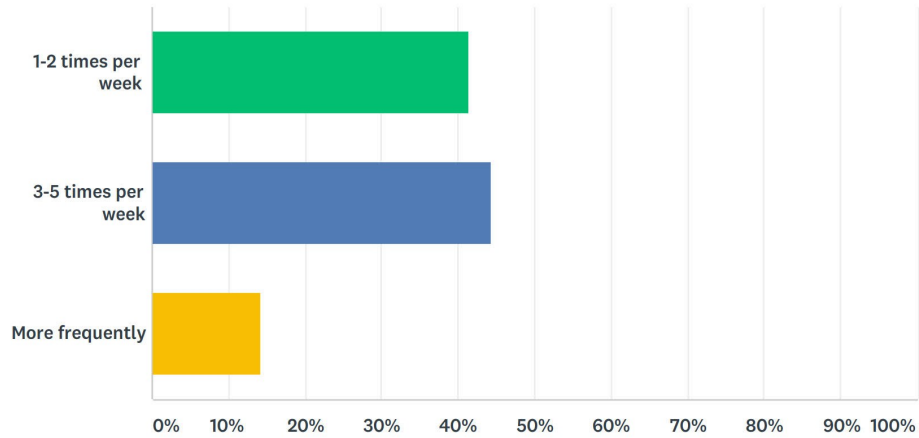
Owensboro-Daviess County Bicycle Master Plan Proposed Projects (Prioritized)

Project Rank	Map site	Location	Begin	End	Length (miles)	Project Description
OVERALL PRIORITIZATION						
1	18	Lagoon Lane	Parrish Ave. E	Kentucky 603	1.04	Shared-Use Path
2	29	Todd Bridge Road	Southtown Blvd.	Waymond Morris Park	0.44	Paved Shoulders or Shared-Use
3	22	Old Hartford Road	Liberty Pt.	Southeastern Pkwy.	0.13	Paved Shoulders
4	21	New Hartford Road	Southeastern Pkwy.	Harmony Drive	3.49	Paved Shoulders or Shared-Use
5	28	Reid Road	Yellow Creek Park	Reid Road	0.47	Paved Shoulders or Shared-Use
6	2	4th St. W	Carter Road	GRADD Way	0.62	Shared-Use Path
DOWNTOWN CONNECTIVITY						
1	7	Castlen St.	1st St. W	5th St. W	0.30	Sharrows
2	3	5th St. W	Castlen St.	Omega St.	0.57	Sharrows
3	8	Cravens Ave.	Carter Road	Omega St.	0.54	Sharrows
4	4	Bittel Road	Dallas Ave.	Bosley Road	0.78	Sharrows
5	12	Ford Ave.	Daviess St.	Oxford Drive	1.50	Sharrows
6	19	Lewis Lane	Ford Ave.	Tamarack Road	1.11	Sharrows
PARK CONNECTIVITY						
1	11	Fairview Drive	Greenbelt	Kentucky 54	0.43	Paved Shoulders or Shared-Use
2	20	Millers Mill Road	Greenbelt	KY 54	0.21	Paved Shoulders or Shared-Use
3	10	East Daviess County	Gateway Commons	Reid Road	2.12	Shared-Use Path
4	26	Parrish Ave. E	Leitchfield Road	Byers Ave. E	1.09	Shared-Use Path

Community Destinations		
Shopping	Schools	Medical
Towne Square Mall	Daviess County Middle	Medical Center
Towne Square North	Owensboro Middle	The Springs
Target/Walmart area	Apollo High	Hospital
Wesleyan Park Plaza	Catholic High	
Big Lots area	Daviess County High	Parks
Former Pangea area	Owensboro High	Ben Hawes
Consumer Mall area	Brescia University	Cap Gardner
Gateway Commons	Daymar College	Chautauqua
Wal-Mart	KCTCS - Frederica	Cravens Pool
Kohl's area	KCTCS - US 231	Dugan Best
Academy Sports Area	KCTCS	English
Menard's area	Kentucky Wesleyan College	Goose Egg
	WKU-Owensboro	Horse Fork Creek
Schools		Jack C. Fisher
Burns Elementary	Recreation	James Mason
Catholic K-3 Elementary	Botanical Gardens	Joe Ford
Catholic 4-6 Elementary	Sportscenter	Kendall-Perkins
Country Heights Elementary	YMCA	Knottsville
Cravens Elementary	HealthPark	Legion
Deer Park Elementary	Ice Arena	Max Rhodes
Estes Elementary		Moreland
Foust Elementary	Other	Panther Creek
Highland Elementary	Library	Russell Shifley
Meadowlands Elementary	OTS Transit	Smothers
Newton Parrish Elementary	Downtown	Southern
Sutton Elementary	Wendell Foster Center	Stanley
Tamarack Elementary		Thompson-Berry
Burns Middle	Medical	Waymond Morris
Catholic Middle	Cigar Factory Mall	Yellow Creek
College View Middle	Health Department	York

Q1 About how many times in the average week do you walk as an activity?

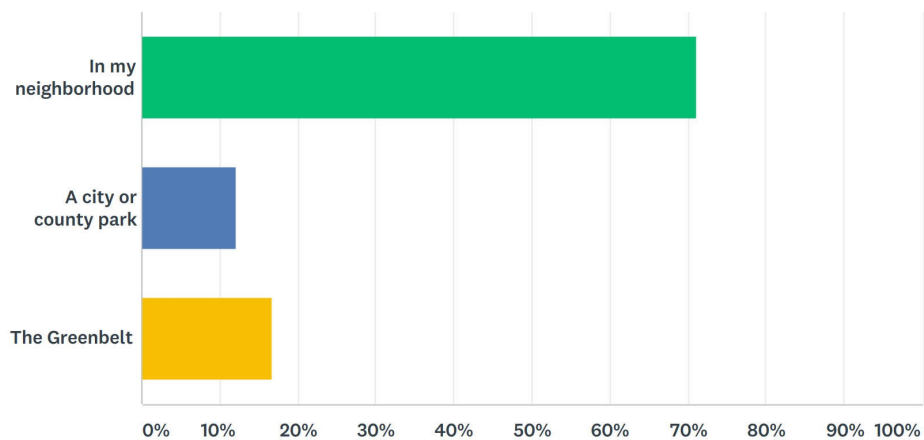
Answered: 760 Skipped: 5



ANSWER CHOICES	RESPONSES	
1-2 times per week	41.45%	315
3-5 times per week	44.34%	337
More frequently	14.21%	108
TOTAL		760

Q2 Where do you most frequently walk?

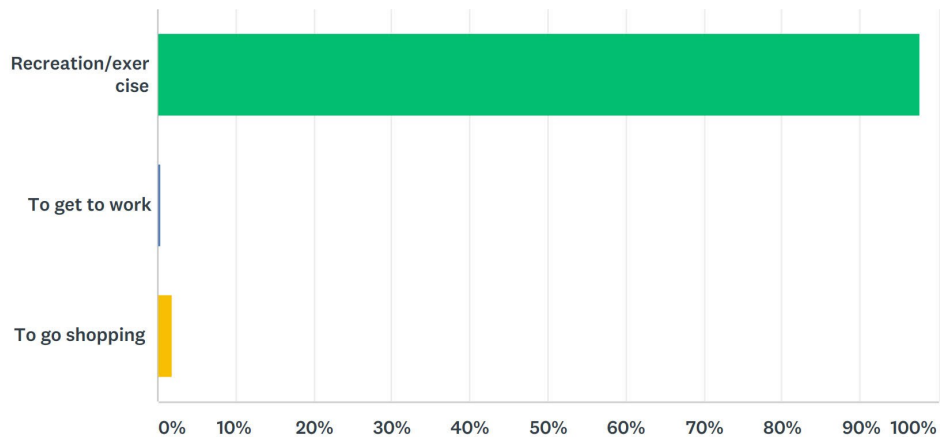
Answered: 639 Skipped: 126



ANSWER CHOICES	RESPONSES	
In my neighborhood	71.21%	455
A city or county park	12.05%	77
The Greenbelt	16.74%	107
TOTAL		639

Q3 Why do you walk?

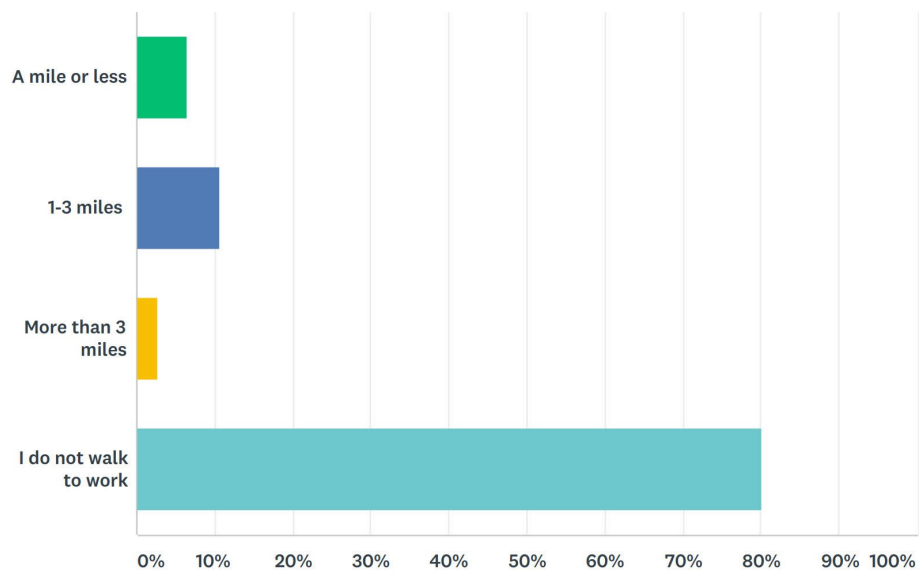
Answered: 733 Skipped: 32



ANSWER CHOICES	RESPONSES	
Recreation/exercise	97.68%	716
To get to work	0.41%	3
To go shopping	1.91%	14
TOTAL		733

Q4 If you walk to work, how far do you walk?

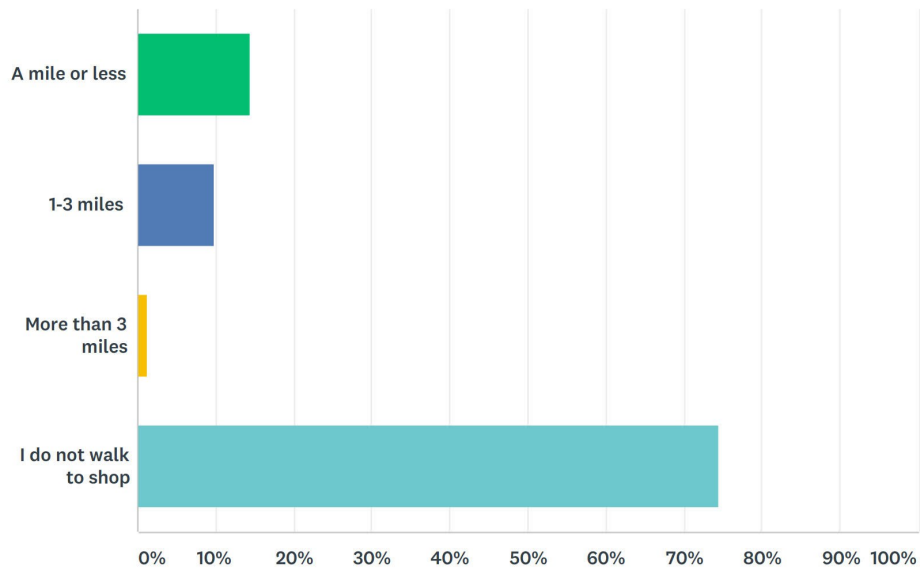
Answered: 754 Skipped: 11



ANSWER CHOICES	RESPONSES	
A mile or less	6.50%	49
1-3 miles	10.74%	81
More than 3 miles	2.65%	20
I do not walk to work	80.11%	604
TOTAL		754

Q5 If you walk to shop, how far do you walk?

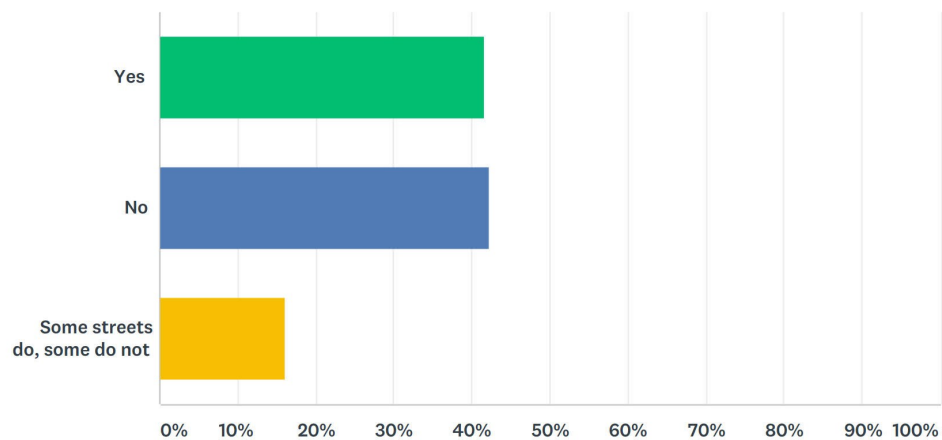
Answered: 757 Skipped: 8



ANSWER CHOICES	RESPONSES	
A mile or less	14.53%	110
1-3 miles	9.91%	75
More than 3 miles	1.19%	9
I do not walk to shop	74.37%	563
TOTAL		757

Q6 Does your neighborhood have sidewalks?

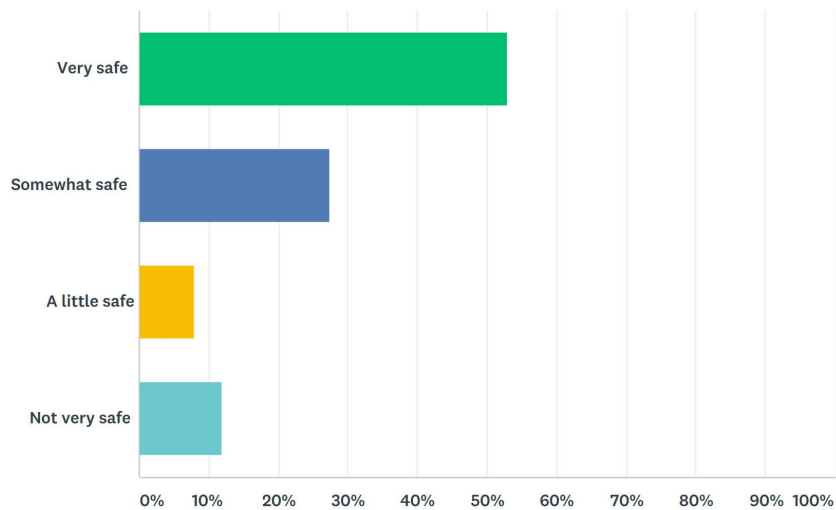
Answered: 759 Skipped: 6



ANSWER CHOICES	RESPONSES	
Yes	41.63%	316
No	42.16%	320
Some streets do, some do not	16.21%	123
TOTAL		759

Q8 Thinking strictly in terms of traffic, how safe would you feel walking in your neighborhood?

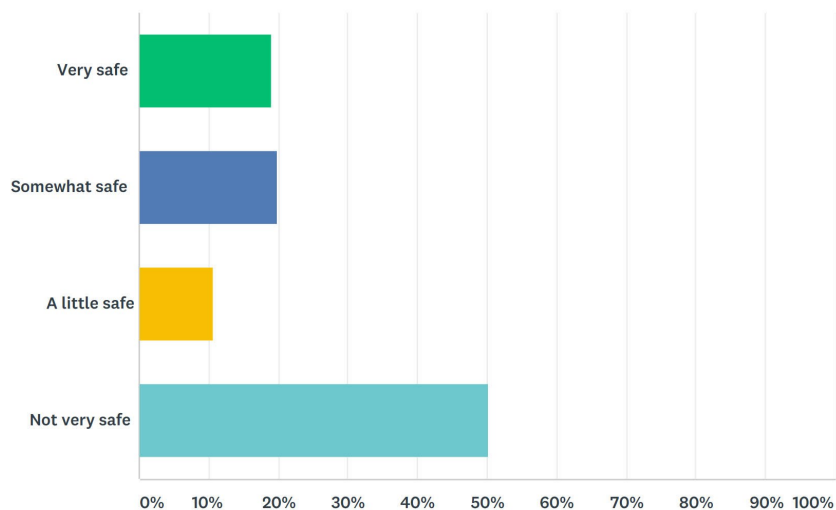
Answered: 759 Skipped: 6



ANSWER CHOICES	RESPONSES	
Very safe	52.83%	401
Somewhat safe	27.40%	208
A little safe	7.91%	60
Not very safe	11.86%	90
TOTAL		759

Q9 Thinking strictly in terms of traffic, how safe would you feel walking from your home to The Greenbelt?

Answered: 744 Skipped: 21



ANSWER CHOICES	RESPONSES	
Very safe	19.09%	142
Somewhat safe	19.89%	148
A little safe	10.75%	80
Not very safe	50.27%	374
TOTAL		744

Walking survey results

30+

Griffith Avenue.....	39
Connect to Greenbelt	35

20-29

Old Hartford Road/U.S. 231.....	29
Everywhere	25
Ford Avenue.....	21
Kentucky 54.....	21
Fairview Drive	20

10-19

JR Miller Boulevard	16
Frederica Street	14
Legion Park area.....	11
Tamarack Road.....	11

5-9

Healthpark area	8
Shopping areas.....	8
Areas around schools.....	7
Parrish Avenue	6
Carter Road	5
Downtown.....	5
Lewis Lane	5
Millers Mill Road	5
Pleasant Valley Road.....	5
Thruston-Dermont Road	5

3-4

All neighborhoods.....	4
Booth Avenue	4
Yellow Creek Park area	4
W. Fifth Street Road	4
West Side	4
East Side.....	3
Hayden Bridge Road	3
Pleasant Valley Road.....	3
Scherm Road.....	3
Veatch Road	3

2

Audubon School area	
Bittel Road	
Bosley Road	
Crabtree Avenue	
Daniels Lane	
East 19 th Street	
East 20 th Street	
East 26 th Street	
Extend Riverwalk to English Park	
Fourth Street	
Gemini Drive	
Heartland area	
Hospital area	
New Hartford Road	

2 (con't)

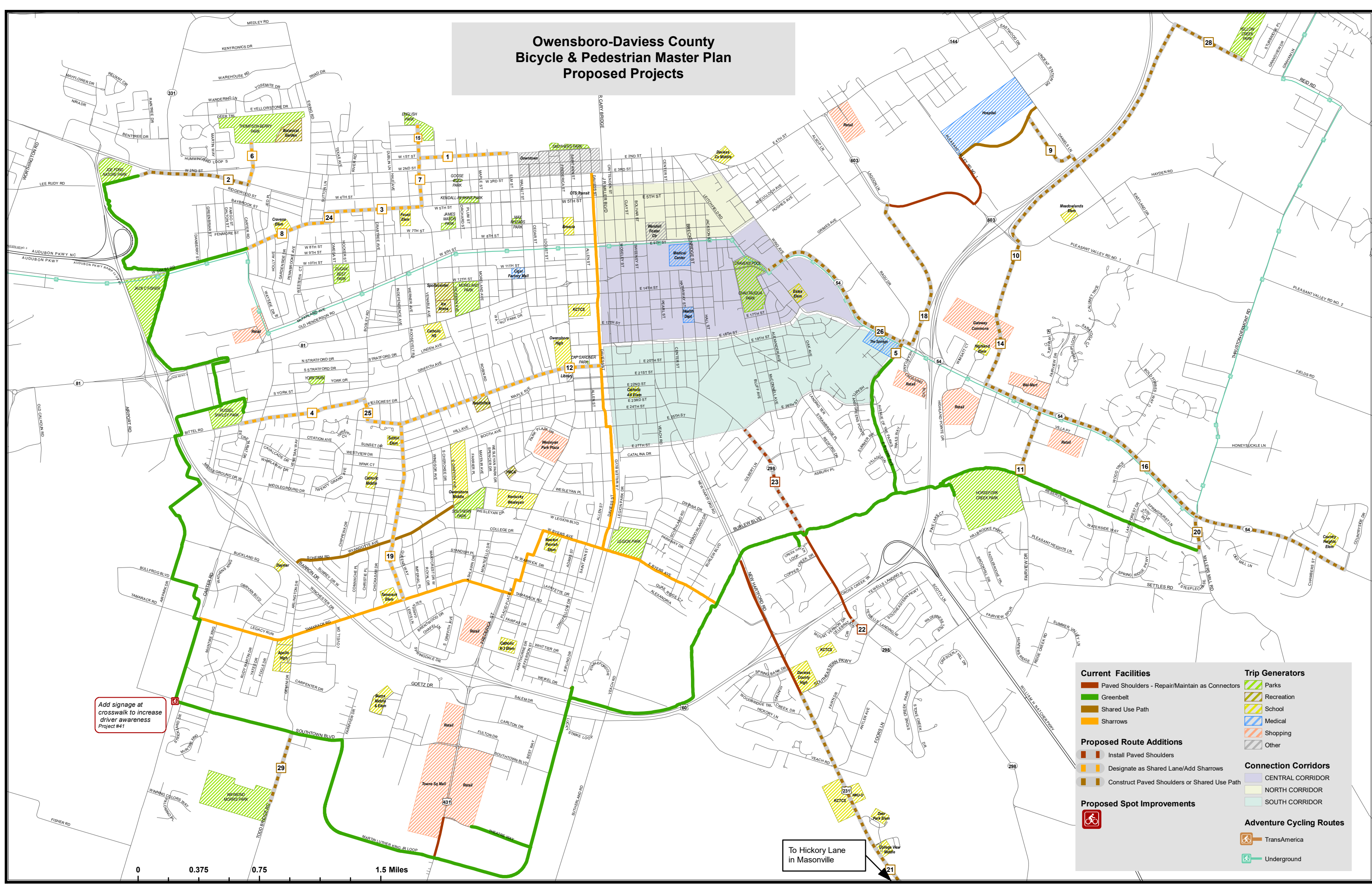
Philpot
Settles Road
South Griffith Avenue
Town & Country
Trinity Hills
Utica

1

Ashlawn Drive
Back Square Drive (Senior Bldg)
Benttree Drive
Bon Harbor area
Coast Guard Lane
College Street
Covent Gardens area
Cross Creek
Copper Creek
Dean Avenue
Dornell Avenue
Downs area
Eastland Drive
East 21st Street
Goetz Drive/Burns
Griffith Place
Hill Avenue
Hill Bridge Road
Hunter's Ridge area
Kentucky 405
Landsdowne area

Leitchfield Road
Linden Avenue
Lyddane Bridge Road
Knottsville
Maple Avenue
Martin Way
McCreary Avenue
McFarland Drive
Moreland Park area
Kelly Lane
Poet Neighborhood
Reid Road
Robin Road
Rolling Heights
Second Street
Southtown Boulevard
Summit neighborhood
Wildwood Drive
Westview Drive
Walnut Street
West 11th Street
West 12th Street
West 23rd Street
West Byers Avenue
York Avenue (North and South)

Owensboro-Daviess County Bicycle & Pedestrian Master Plan Proposed Projects



Current Facilities

- Paved Shoulders - Repair/Maintain as Connectors
- Greenbelt
- Shared Use Path
- Sharrows

Proposed Route Additions

- Install Paved Shoulders
- Designate as Shared Lane/Add Sharrows
- Construct Paved Shoulders or Shared Use Path

Proposed Spot Improvements

-

Trip Generators

- Parks
- Recreation
- School
- Medical
- Shopping
- Other

Connection Corridors

- CENTRAL CORRIDOR
- NORTH CORRIDOR
- SOUTH CORRIDOR

Adventure Cycling Routes

- TransAmerica
- Underground

Sidewalks in Owensboro

