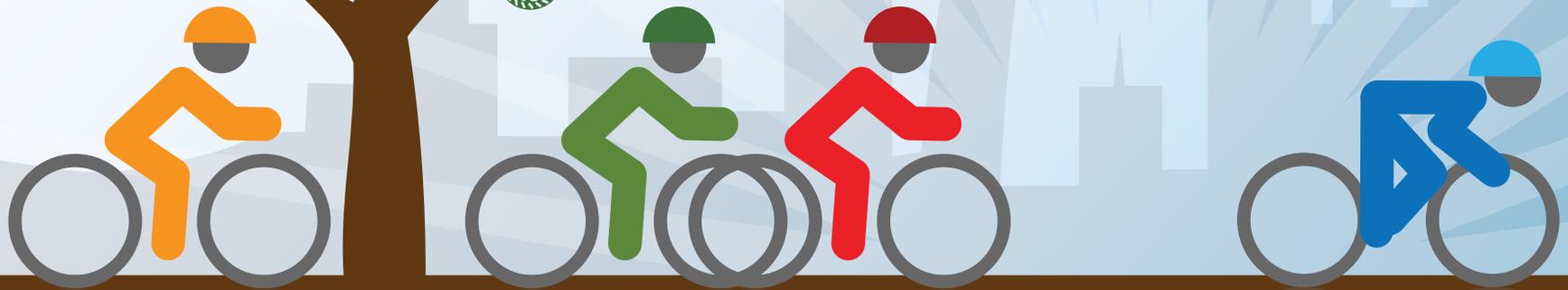




# GATEWAY **Bike** PLAN



Community

# BRIEFING KIT

August 2016



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## INTRODUCTION

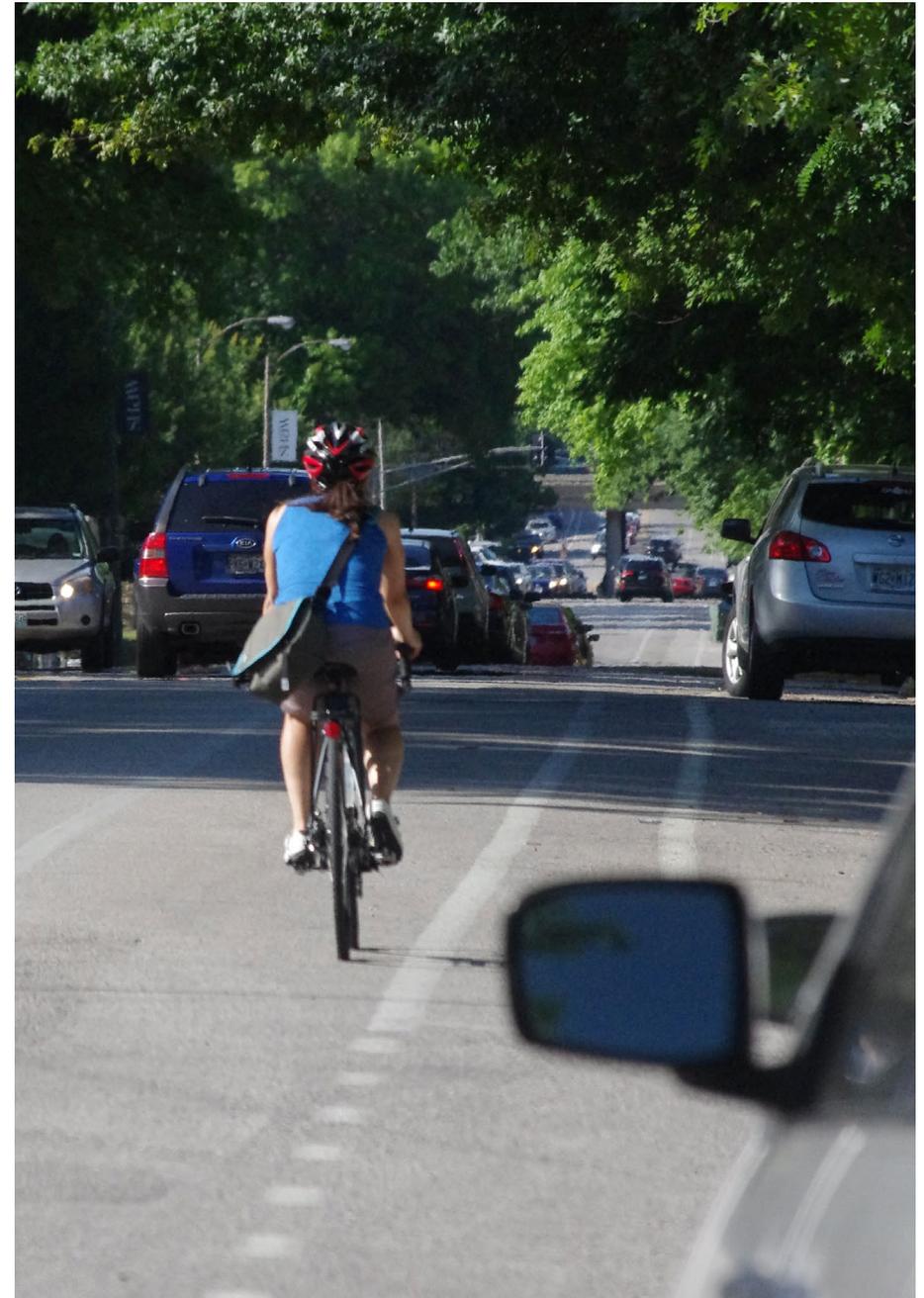
Communities across the St. Louis Metro Area are installing bicycle lanes, trails, and other facilities to support bicycling activity for both transportation and recreation. These bicycle facilities provide multiple benefits:

- » Establish expectations on the roadway by providing signing, striping and markings that designate use of the roadway by people bicycling and people driving.
- » Enhance safety for all road users.
- » Improve travel behavior and predictability on roadways.
- » Further the goals of the 2011 Gateway Bike Plan, the region's long-range plan for increasing the number of people bicycling in St. Louis City, St. Louis County, and St. Charles County.

This community briefing kit is intended to help local municipalities, neighborhood groups, community organizations, local businesses, and residents better understand and communicate to others the function and benefits of the region's growing bicycle network. The briefing kit begins with some powerful facts and figures to help communicate the importance of bicycling and bicycle facilities to create healthier communities, safer streets, increased economic activity, and greater savings for community residents.

The briefing kit also includes detailed descriptions of four common types of bicycle facilities and explains how people driving cars and people riding bicycles can safely and responsibly share the road when encountering these bicycle facilities.

The materials in this community briefing kit are intended to be shared via social media, incorporated into community newsletters and emails, and distributed to local residents and stakeholders to raise awareness for bicycling and the many benefits of a bikeable community.



## THE BENEFITS OF A BIKEABLE COMMUNITY

A bikeable community welcomes and supports people of all ages and abilities bicycling for transportation and recreation. The benefits of a bikeable community are extensive and reach beyond traditional health and safety improvements to areas like household savings and local economies. The following bullet points and examples touch on some of these important benefits to help make the case that bicycling activity and bicycle facilities can have a positive impact on our community.



## ECONOMY

- » Bike friendliness can be a factor in where an individual decides to live and work.
- » In a study of retail spending, people who arrived by bike, on foot or by transit spent more per month than those customers arriving by car at corner stores, restaurants and bars; only at grocery stores did people arriving by car spend more per month.
- » Bicycling projects create an average of 11.4 jobs per million dollars spent, compared to just 7.8 jobs for road-only projects.
- » After the installation of a protected bike lane in New York City, injuries to all street users decreased by 58% and retail sales increased by as much as 49%.
- » Active transportation-related infrastructure, businesses and events are estimated to have contributed \$497 million to the New Jersey economy in 2011.
- » In Iowa, bicycling brings \$435 million per year in economic activity, plus \$82 million in annual health cost savings.
- » A recent CDC study found that community-based physical activity interventions, such as new bike paths and trails, are “money well spent”, meaning they are more cost-effective than traditional preventive strategies in reducing new cases of many chronic diseases and improving quality of life.
- » When San Francisco made its Valencia Street less conducive to automobile travel and better for people bicycling and walking, nearly 40% of merchants reported increased sales and 60% reported more area residents shopping locally due to reduced travel time and convenience. Two-thirds of merchants said the increased levels of bicycling and walking improved business.



## SAFETY

- » Cities with high bicycling rates tend to have lower crash rates for all road users.
- » Cities around the U.S. have found that protected bike lanes increase bicycle ridership, reduce motor vehicle speeding, reduce crashes and improve people's feelings of safety on those streets.
- » Major streets without bike facilities are where the most bike crashes happen, followed by minor streets without facilities, bike paths, and then bike lanes.
- » A review of 23 studies on bicycling injuries found that bike facilities (e.g. off-road paths, on-road marked bike lanes, and on-road bike routes) are where bicyclists are safest.



## HEALTH

- » The more often an employee bicycles and the longer the distance traveled, the lower the rate of absenteeism.
- » Bicycling to school is associated with improved cardiorespiratory fitness and lower odds of being overweight or obese for adolescents.
- » By building a bicycle trail, it costs just \$98 to help a person become more physically active.
- » Young teens who live in neighborhoods where they can safely bike and walk to school and other destinations are significantly less likely to be obese.
- » Bicycle commuting burns an average of 540 calories per hour.
- » Commuting physical activity, independent of leisure time physical activity, is associated with a healthier level of most of the cardiovascular risk factors (e.g., HDL cholesterol, LDL cholesterol and triglycerides).
- » Women who walk or bike 30 minutes a day have a lower risk of breast cancer.
- » The health benefits of cycling outweigh the safety risks by a factor of 20 to one.
- » A study of nearly 2,400 adults found that those who biked to work were fitter, leaner, less likely to be obese, and had better triglyceride levels, blood pressure, and insulin levels than those who didn't active commute to work.

## HOUSEHOLD SPENDING

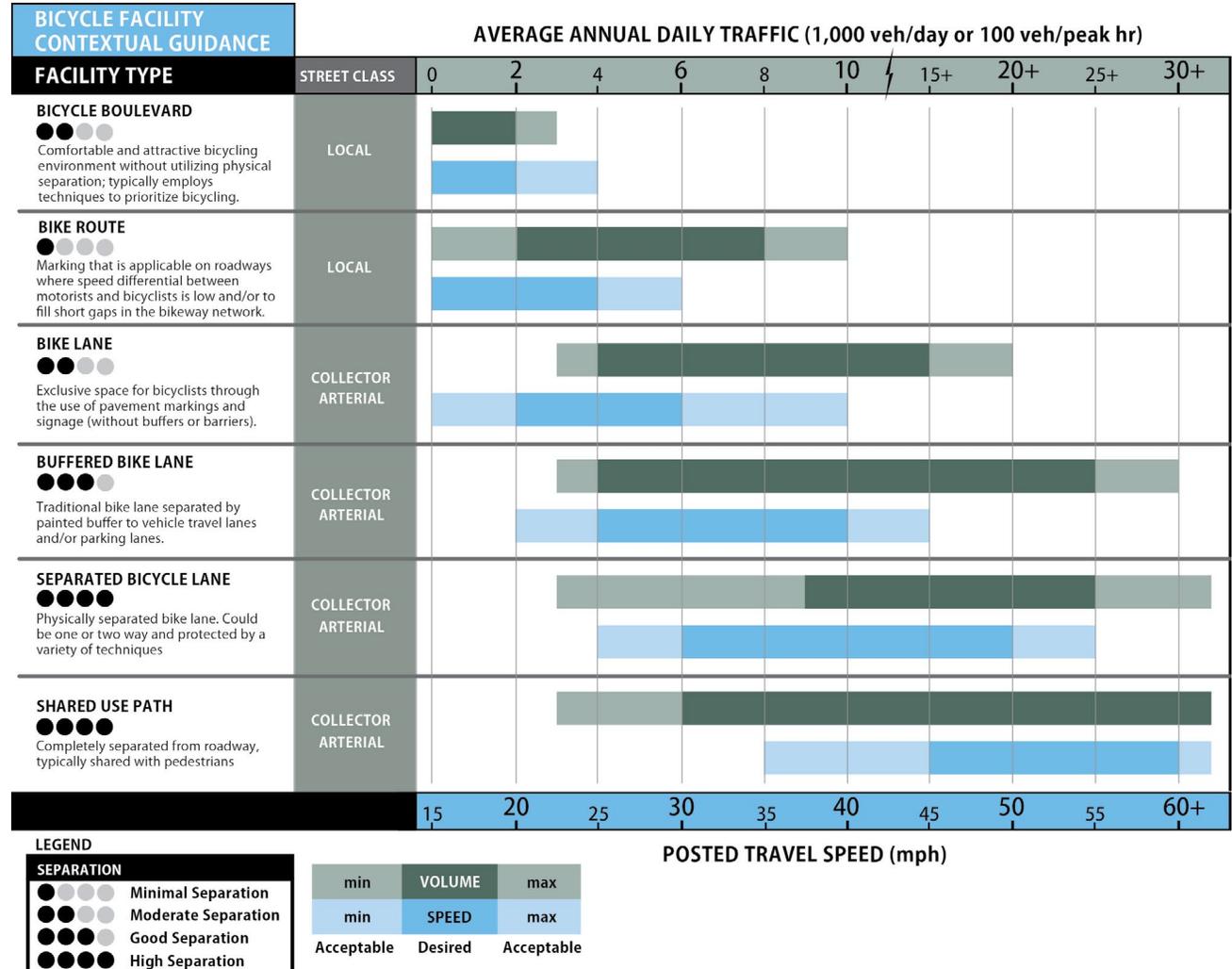
- » The average annual operating cost of a bicycle is \$308, less than 4% that of an average car (\$9,513).
- » The average American household spends an entire three months' pay on transportation.

## BIKEWAYS IN THE ST. LOUIS REGION

More and more people are enjoying life on two wheels in St. Louis, and the growth of the regional network of bike routes, bike lanes, trails, and greenways has played a large part in increasing bicycling activity. As local municipalities and government agencies continue to implement the Gateway Bike Plan and add bikeways (also called bicycle facilities) to the region's roadways, it is important to communicate to all road users the different types of bikeways they are likely to encounter.

The chart to the right illustrates how bicycle facility types are selected based on important roadway characteristics like posted speed limit and average annual daily traffic. As speeds and traffic volumes increase, greater separation between bicycle traffic and motor vehicle traffic is needed to create safer conditions for all road users.

Each of the six basic bicycle facility types listed in this chart is illustrated on the following page and accompanied by a basic description. Beginning on page six of this Community Briefing Kit, four of the region's most common facility types are described in greater detail. These facility types are shared lane markings, bike lanes, buffered bike lanes, and trail crossings at roadways. Included with each description are simple instructions and safety tips to help create a culture of mutual respect and responsibility among all road users. While these facility types represent the most common facilities on the Gateway Bike Plan network right now, more and more municipalities and local agencies are incorporating separated bicycle lanes and other innovative facilities to create a world-class bicycling experience throughout the St. Louis region.





## BIKE BOULEVARDS

Bicycle boulevards are streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority.



## SHARED LANE MARKINGS

Shared lane markings or “sharrows” are road markings used on many of the region’s bike routes to indicate a shared lane for people biking and people driving.



## BIKE LANES

A bike lane is a portion of the roadway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists.



## BUFFERED BIKE LANES

Buffered bike lanes are standard or conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.



## SEPARATED BIKE LANES

A separated bike lane is an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element.



## SHARED USE PATHS

A shared use path is a bikeway physically separated from motor vehicle traffic by an open space or barrier. Also called a trail or a greenway, shared use paths are also used by people walking, jogging, skating, and using wheelchairs.

## BIKE LANES

Bike lanes provide a designated space for people to travel by bicycle on area streets. Bike lanes help to organize and narrow streets so drivers and people bicycling feel comfortable sharing the road. Bike lanes are marked by white paint and signage, and flow in the same direction as traffic. The main goal of the bike lane is to improve safety by:

- 
- » Increasing the comfort level of people bicycling on busy streets.
  - » Creating separation between people bicycling and people driving motor vehicles.
  - » Encouraging predictability of bicyclist and motorist positioning and interactions.
  - » Increasing the capacity of streets by carrying a mix of bicycle and motor vehicle traffic while maintaining posted speed limits.
  - » Removing slower-moving bikes from motor vehicle travel lanes, reducing delay for drivers.
- 

### WHAT PEOPLE BICYCLING SHOULD KNOW ABOUT BIKE LANES

When riding in the bike lane, always go with the flow of traffic. Bike lanes include stencils of a person on a bicycle and an arrow pointing in the proper direction of travel. Riding against traffic on the wrong side of the road is illegal and increases your risk of getting seriously injured. Riding in the wrong direction also endangers other people bicycling who are traveling in the correct direction.

**Turning:** Signal your intentions to other road users. Signaling is a courteous way to let drivers, pedestrians, and other people bicycling know your intentions. When turning, use proper hand signals to indicate the direction you are turning and maneuver to a position to make your turn from the bike lane. To turn left, extend your left arm straight and parallel to the ground and point to the left. To turn right, either extend your left arm and bend your elbow up, or extend your right arm and point to the right.

**Stopping:** The rules of the road are the same for people bicycling as they are for drivers. You must obey all stop signs and traffic lights. When stopping at an intersection, make sure to stop ahead of the crosswalk so pedestrians can cross the road safely.

### WHAT PEOPLE DRIVING SHOULD KNOW ABOUT BIKE LANES

**Turning:** One of the best ways to create a safe road environment for yourself and other users is to be predictable. Always use your signals to indicate the direction you are turning. This allows people bicycling to know your intentions, yield, or slow to accommodate the flow of traffic. Before turning, look over your shoulder to be certain there are no people on bicycles before proceeding.

Driving in a bike lane is prohibited except to cross a bike lane when turning, leaving a parking space or driveway, or avoiding an obstacle. Remember, local laws state that you must always yield to people bicycling before crossing a bike lane.

**Stopping and Parking:** There is no stopping, standing, or parking in bike lanes. Please treat the bike lane as if it were another traffic lane and do not disrupt the flow of bicycle traffic.

When parallel parking next to a bike lane, watch for people bicycling before crossing the bike lane to enter a parking spot. Park as close to the curb as you normally would. When exiting your vehicle, look over your shoulder and check your mirror for people bicycling before opening your door.

“Dooring”, or opening one’s car door into the path of an oncoming bicyclist, can cause extensive injuries and even fatalities. Just like when exiting your car from the driver side, be just as cautious when exiting on the passenger side near a bike lane or buffered bike lane. Local ordinances state that no person shall open the door of a motor vehicle on the side available to moving traffic until it is reasonably safe to do so, and can be done without interfering with the movement of other traffic.



# BIKE LANE

## < DOOR ZONE >

Bicyclists: avoid the door zone.  
Drivers: check for bicyclists before opening the door.

## < PARKING >

## < TRAVEL LANE >

## < BIKE LANE >



## BUFFERED BIKE LANES

Buffered bike lanes are like conventional bike lanes, but they have a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane, the parking lane, or both. This buffered space increases comfort for people bicycling alongside moving traffic, provides room for people bicycling to pass one another without moving into vehicular traffic, and offers greater separation between parked motor vehicles and people bicycling, thereby reducing the potential for dooring. The main goal of the buffered bike lane is to improve safety by:

- » Providing a greater distance between motor vehicles and people biking.
- » Providing space for people biking to pass each other without encroaching into travel lanes.
- » Increasing the distance between people biking and parked cars, keeping bicyclists out of the “door zone.”
- » Encouraging bicycling by all types of people and increasing the safety of all road users.

### WHAT PEOPLE BICYCLING SHOULD KNOW ABOUT BUFFERED BIKE LANES

Bicycling in a buffered bike lane is a lot like biking in a regular bike lane. When riding in the buffered bike lane, always go with the flow of traffic. Buffered bike lanes include stencils of a person on a bicycle, an arrow pointing in the proper direction of travel, and buffer space with diagonal striping called “hatching” to indicate the buffer space. Riding against traffic on the wrong side of the road is illegal and increases your risk of getting seriously injured. Riding in the wrong direction also endangers other people biking who are traveling in the correct direction.

**Turning:** Signal your intentions to other road users. Signaling is a courteous way to let drivers, pedestrians, and other bicyclists know your intentions. When turning, use proper hand signals to indicate the direction you are turning and maneuver to a position to make your turn from the buffered bike lane. To turn left, extend your left arm straight and parallel to the ground and

point to the left. To turn right, either extend your left arm and bend your elbow up, or extend your right arm and point to the right.

**Stopping:** The rules of the road are the same for people bicycling as they are for drivers. You must obey all stop signs and traffic lights. When stopping at an intersection, make sure to stop ahead of the crosswalk so pedestrians can cross the road safely.

### WHAT PEOPLE DRIVING SHOULD KNOW ABOUT BUFFERED BIKE LANES

**Turning:** One of the best ways to create a safe road environment for yourself and other users is to be predictable. Always use your signals to indicate the direction you are turning. This allows people biking to know your intentions, yield, or slow to accommodate the flow of traffic. Before turning, look over your shoulders to be certain there are no bicyclists before proceeding.

Driving in a buffered bike lane is prohibited except when crossing to turn, leaving a parking space or driveway, or avoiding an obstacle. Remember, local laws state that you must always yield to people biking before crossing a buffered bike lane.

**Stopping and Parking:** There is no stopping, standing, or parking allowed in buffered bike lanes. Please treat the bike lane as if it were another traffic lane. Do not disrupt the flow of bicycle traffic.

When parallel parking next to a buffered bike lane, watch for people bicycling before crossing the buffered bike lane to enter a parking spot. Park as close to the curb as you normally would. When exiting your vehicle, look over your shoulder and check your mirror for people bicycling in the buffered bike lane before opening your door.

Opening one’s car door into the path of an oncoming bicyclist, often called “dooring”, can cause extensive injuries and even fatalities. Just like when exiting your car from the driver side, be just as cautious when exiting on the passenger side near a buffered bike lane. Local ordinances states that no person shall open the door of a motor vehicle on the side available to moving traffic until it is reasonably safe to do so, and can be done without interfering with the movement of other traffic.



# BUFFERED BIKE LANE



◀ TRAVEL LANE ▶

◀ BIKE LANE ▶

◀ PARKING ▶

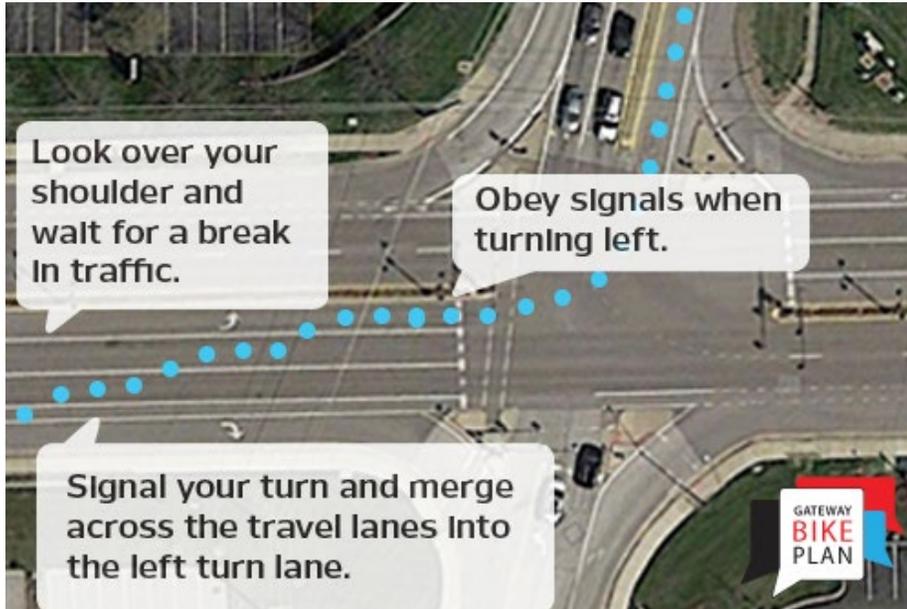
◀ BUFFER ▶

Provides additional separation from motor vehicle traffic.

◀ BUFFER ▶

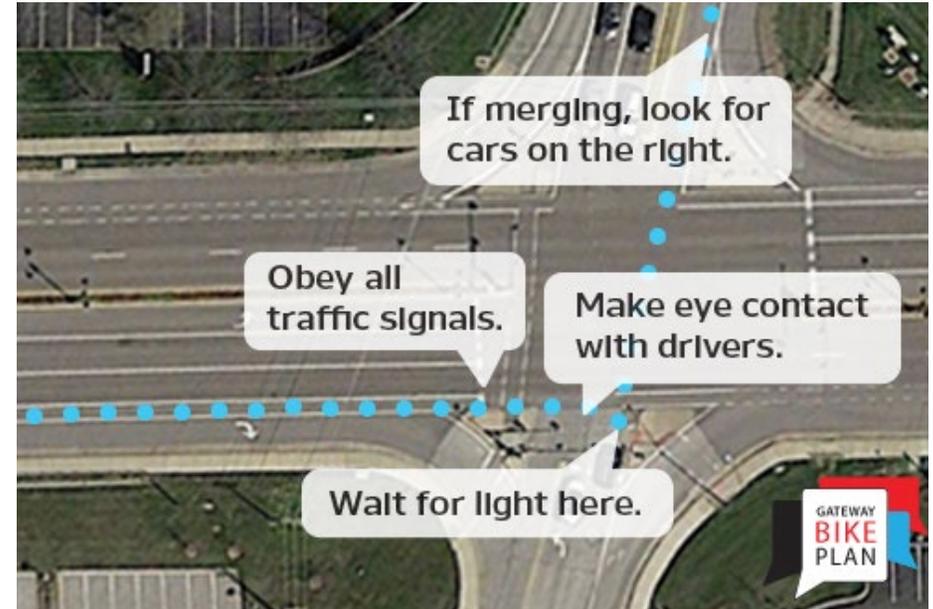
Keeps people bicycling out of the "door zone"





### HOW TO MAKE A CONVENTIONAL LEFT TURN BY BIKE

Many people bicycling turn left just like people driving cars. To make this type of left turn, begin by looking over your shoulder for an appropriate break in traffic to start changing lanes. Be sure to signal your lane change so people driving can anticipate your next move and react accordingly. Change lanes into the left-most travel lane or into the left turn lane, wait for appropriate signal, and make your left turn, just like in the illustration above.



### HOW TO MAKE A TWO-STAGE LEFT TURN BY BIKE

For many others, making a conventional left turn while bicycling can be intimidating, especially on roadways with higher posted speed limits or heavy traffic volumes. Luckily, there is a safe and easy way to make a left turn: the two-stage left turn. As illustrated above, begin by continuing straight into the intersection and coming to a stop directly in front of the bike lane or travel lane that faces your ultimate direction of travel. Be sure not to block the crosswalk. Once the light turns green, continue through the intersection.

## STEP ONE



## STEP TWO



## HOW TO CROSS A BIKE LANE WHILE DRIVING

Bike lanes can be found on roadways across the St. Louis region, from dense urban thoroughfares to suburban state highways and even outer roads alongside interstate highways. As you travel alongside these bike lanes, it is important to be aware of your surroundings and always expect to see people bicycling. The illustrations above provide additional guidance for making a right turn across a bike lane. Whether turning onto another street or even just a driveway, always look for and yield to people bicycling.

## SHARED LANE MARKINGS

Shared lane markings or “sharrows” are road markings used to indicate a shared lane for people biking and motor vehicles. These markings, which combine a bicycle stencil below two chevrons or arrows, are typically seen on neighborhood streets with lower speed limits and lower motor vehicle traffic volumes. There may also be “Bikes May Use Full Lane” signs to reinforce the expectation that people bicycling can use the full lane to travel on a roadway. The main goal of shared lane markings and “Bikes May Use Full Lane” signs is to improve safety by:

- 
- » Encouraging people bicycling to position themselves safely in lanes too narrow for a motor vehicle and bicycle to travel side by side.
  - » Alerting motor vehicle drivers to the presence of people bicycling.
  - » Providing a wayfinding element along bike routes to insure users are connecting to other bicycle facilities.
  - » Encouraging safe passing by motorists.
- 

## WHAT PEOPLE BICYCLING SHOULD KNOW ABOUT SHARED LANE MARKINGS

Sharrows indicate the proper lane position for people bicycling to make them more visible to drivers. When riding a bicycle along a street that has shared lane markings, always ride in the same direction as the sharrows. You may (but are not required to) use the shared lane markings as a guide and ride directly over them. This can help keep you out of the door zone and discourage motor vehicle drivers from passing too closely in the same travel lane. You should always ride where you feel most comfortable and safe.

## WHAT PEOPLE DRIVING SHOULD KNOW ABOUT SHARED LANE MARKINGS

Shared lane markings are on the roads to remind us all that people traveling by bicycle can use the full travel lane on any local roadway, except for interstate highways. If you see a shared lane marking on the road, you can drive directly over these markings. While they are not bike lanes, they still indicate a designated bicycle route, so use extra caution and be prepared to encounter people bicycling.

**Passing a Person Bicycling:** When passing a person bicycling on a road with multiple travel lanes, simply change lanes to pass. If there is only one travel lane in each direction, you may cross the centerline to pass, as long as the left side of the road is clearly visible and free of oncoming traffic. Always leave a minimum of 4 feet between your car and the person bicycling. When you give people bicycling plenty of room, people driving directly behind you will usually follow your lead and leave plenty of room too.



# SHARED LANE MARKINGS

## ◀ SHARED LANE ▶

Bicyclists: Position yourself along the markings to avoid the door zone.

◀ Drivers: Markings ▶ alert you to the presence of bikes.

◀ Drivers: Check for bicyclists before opening the door. ▶



## TRAIL & ROADWAY CROSSINGS

Residents and visitors to the St. Louis Region are fortunate to have hundreds of miles of hard surface and paved trails that support people traveling on foot, by bicycle, by wheelchair, and by other non-motorized devices. Many of these trails run parallel to and cross roadways, so it is important to know how to safely interact with other road users at these trail and roadway crossings.

Each trail and roadway crossing is unique, but there are some basic design elements common to most crossing that help guide people safely through the intersection. Crosswalk markings are one of the most common design features and can be seen at most trail and roadway crossings in the region. Other common features include stop signs, yield signs, “trail crossing ahead” signs, raised medians, and flashing beacons. While each trail and roadway crossing is unique, the main goal of every crossing is to provide for the safe travel of all trail and roadway users by:

- 
- » Raising awareness for people bicycling, people walking, and people driving to potential conflict areas.
  - » Guiding trail users through an intersection with a roadway or other trail.
  - » Making movements of trail users more predictable by delineating where people bicycling should cross.
  - » Increasing the visibility of people bicycling and walking.
- 

### WHAT PEOPLE BICYCLING SHOULD KNOW ABOUT TRAIL AND ROADWAY CROSSINGS

Just like at any intersection, you should always obey all traffic signals or signs when approaching a crossing. Don't assume motor vehicles will stop for you to cross, even if the crossing is marked. Be sure to look both ways to insure your route is clear and vehicles have come to a complete stop. Many of the region's trails are used by a diversity of people and different modes. Be courteous and yield to pedestrians at these key trail and roadway crossings.

### WHAT PEOPLE DRIVING SHOULD KNOW ABOUT TRAIL AND ROADWAY CROSSINGS

When approaching an intersection that crosses a trail, obey all traffic signs and signals as drivers usually would. Where only a marked crosswalk exists, the motor vehicle driver must yield to a pedestrian who is in the crosswalk. Many of our region's trails are very busy with people of all abilities and modes. When approaching a trail crossing, be cautious and considerate of other road users.



# TRAIL & ROAD CROSSING

◀ OBEY TRAFFIC SIGNS & SIGNALS ▶

◀ LOOK BOTH WAYS ▶  
Bicyclists: Don't expect vehicles to stop.

