

## Sharing the Road: Cyclists

- 1) Ride on the right
  - 🚲 Always ride in the same direction as traffic
  - 🚲 Use the lane furthest to the right that heads in the direction that you are traveling
  - 🚲 Slower moving cyclists and motorists stay to the right
  
- 2) Act like a vehicle
  - 🚲 The same laws that apply to motorists apply to cyclists
  - 🚲 Obey all traffic control devices, such as stop signs, lights, and lane markings
  - 🚲 Always use hand signals to indicate your intention to stop or turn to motorists and cyclists
  
- 3) Always wear a properly fitting helmet
  - 🚲 Make sure that the helmet fits on top of the head, not tipped back
  - 🚲 Always wear a helmet while riding a bike, no matter how short the trip
  - 🚲 After a crash or any impact that affects your helmet, visible or not, replace it immediately
  
- 4) Ride predictably
  - 🚲 Ride in a straight line and don't swerve in the road or between parked cars
  - 🚲 Check for oncoming traffic before entering any street or intersection
  - 🚲 Anticipate hazards and adjust position in traffic accordingly
  
- 5) Be visible
  - 🚲 Wear brightly colored clothing at all times
  - 🚲 At night, use a white front light, red rear light or reflector and reflective tape or clothing
  - 🚲 Make eye contact with motorists to let them know you are there

## Sharing the Road: Motorists

- 1) Drive cautiously
  - ⌘ Reduce speed when encountering cyclists
  - ⌘ In inclement weather, give cyclists extra trailing and passing room
  - ⌘ Recognize situations that may be potentially dangerous to cyclists and give them space
  
- 2) Yield to cyclists
  - ⌘ Cyclists are considered vehicles and should be given the appropriate right of way
  - ⌘ Cyclists may take the entire lane when hazards, road width or traffic speed dictate
  - ⌘ Motorists should allow extra time for cyclists to traverse intersections
  
- 3) Be considerate
  - ⌘ Scan for cyclists in traffic and at intersections
  - ⌘ Do not blast your horn in close proximity to cyclists
  - ⌘ Look for cyclists when opening doors
  
- 4) Pass with care
  - ⌘ Leave at least three feet of space between your car and a cyclist when passing
  - ⌘ Wait until road and traffic conditions allow you to safely pass
  - ⌘ Check over your shoulder after passing a cyclist before moving back to normal position
  
- 5) Watch for children
  - ⌘ Children on bicycles are often unpredictable – expect the unexpected and slow down
  - ⌘ Most children don't have adequate knowledge of traffic laws
  - ⌘ Children are harder to see because they are typically smaller than adults

## ABC Quick Check

### 1) A is for air

- 🚲 Inflate tires to rated pressure as listed on the sidewall of the tire
- 🚲 Use a pressure gauge to insure proper pressure
- 🚲 Check for damage to tire tread and sidewall; replace if damaged

### 2) B is for brakes

- 🚲 Inspect pads for wear; replace if there is less than 1/4" of pad left
- 🚲 Check pad adjustment; make sure they do not rub tire or dive into spokes
- 🚲 Check brake level travel; at least 1" between bar and lever when applied

### 3) C is for cranks, chain and cassette

- 🚲 Make sure that your crank bolts are tight; lube the threads only, nothing else
- 🚲 Check your chain for wear; 12 links should measure no more than 12 1/8 inches
- 🚲 If your chain skips on your cassette, you might need a new one or just an adjustment

### 4) Quick is for quick releases

- 🚲 Hubs need to be tight in the frame; your quick release should engage at 90°
- 🚲 Your hub quick release should point back to insure that nothing catches on it
- 🚲 Inspect brake quick releases to insure that they have been re-engaged

### 5) Check is for check it over

- 🚲 Take a quick ride to check if derailleurs and brakes are working properly
- 🚲 Inspect the bike for loose or broken parts; tighten, replace or fix them
- 🚲 Pay extra attention to your bike during the first few miles of the ride

## Ten Commandments of Bicycling

- I. Wear a helmet for every ride
- II. Conduct an ABC Quick Check before every ride
- III. Obey traffic laws: ride on the right, slowest traffic farthest to right
- IV. Ride predictably and be visible at all times
- V. At intersections, ride in the right-most lane that goes in your direction
- VI. Scan for traffic and signal lane changes and turns
- VII. Be prepared for mechanical emergencies with tools and know-how
- VIII. Control your bike by practicing bike handling skills
- IX. Drink before you are thirsty and eat before you are hungry
- X. Have fun

## Efficiency on the Bike

### 1) Use lower gears

- ⌘ Most beginning cyclists push too big a gear; down shift and spin a smaller gear
- ⌘ Low cadence will cause you to fatigue faster and might cause knee pain
- ⌘ Try to spin about 90 RPMs; you'll have more energy and get a better workout

### 2) No bull

- ⌘ When stopped, don't push off the ground to get started
- ⌘ Leave one pedal in the two o'clock position; push down when you are ready to go
- ⌘ You will have enough momentum to balance and put your other foot on the pedal

### 3) Relax

- ⌘ You should be comfortable while you ride
- ⌘ Relax while you ride; it takes energy to grip the handlebar in fear
- ⌘ Change hand positions often, slightly bend your elbows, stretch your neck while riding

### 4) Don't rock the boat

- ⌘ Make sure that your saddle height is adjusted properly
- ⌘ Too high and your hips rock; too low causes knee pain
- ⌘ You should have a slight bend in your knee at the bottom of the pedal stroke

### 5) Skip the soft shoes

- ⌘ Soft-soled shoes absorb pedaling energy and slow you down
- ⌘ Stiff-soled cycling shoes help you transfer more energy to forward motion
- ⌘ Toe clips and clipless pedals attach your foot to the pedal, which increases efficiency

### 6) Red light, green light

- ⌘ Restarting from a stop uses more energy than a slowing and not stopping
- ⌘ Time it so that you hit the intersection on green so you don't have to stop
- ⌘ Make sure that you are aware of how your actions affect other vehicles around you

### 7) Avoid the wall

- ⌘ Listen to your body while you ride to avoid hitting the wall of exhaustion
- ⌘ Eat before you are hungry and drink before you are thirsty to avoid fatigue
- ⌘ If you experience a lightheaded feeling, get off the bike and get some fluids

## Group Riding

### 1) Be predictable

- ⌘ In a group, your actions affect those around you, not just yourself
- ⌘ Riders expect you to continue straight and at a constant speed
- ⌘ Signal your intention to turn or slow down before you do so

### 2) Use signals

- ⌘ Use hand signals to indicate turns and point out hazards to others
- ⌘ Left or right arm straight out to indicate left or right turn
- ⌘ Left arm out and down with palm to the rear to indicate stopping

### 3) Give warnings

- ⌘ Ride leaders should call out right turns, left turns, and stops in addition to signaling
- ⌘ Announce turns before the intersections to give riders a chance to position themselves
- ⌘ Try to avoid sudden stops or turns except for emergencies

### 4) Change positions correctly

- ⌘ Slower moving traffic stays to the right; faster traffic to the left
- ⌘ Pass slower moving vehicles on the left; announce your intention to do so
- ⌘ Announce passes on the right clearly as this is not a usual maneuver

### 5) Announce hazards

- ⌘ Most cyclists do not have a full view of the road while riding in a group
- ⌘ Announce potholes and other hazards so others can avoid them
- ⌘ Call out the hazard and point down to it, either left or right

### 6) Watch for traffic from the rear

- ⌘ The last rider should frequently check for overtaking cars
- ⌘ Announce "car back" clearly and loudly
- ⌘ It is also helpful to announce "car up" on narrow roads or when riding two abreast

### 7) Watch out at intersections

- ⌘ Leader should announce slowing or stopping at intersections if necessary
- ⌘ Cyclists should not follow others through intersections without scanning
- ⌘ Each cyclist is responsible for checking cross traffic; if you must stop, signal

### 8) Leave room for cars

- ⌘ On narrow road or during climbs, leave space between every three or four riders

- 🚲 Motorists will utilize the shorter passing intervals to pass the group
  - 🚲 Good relations with motorists is the responsibility of every cyclist
- 9) Stop off road
- 🚲 When stopping for mechanicals or regrouping, always move clear off the road
  - 🚲 Only if conditions permit should you move back onto the road as a group
  - 🚲 Always yield to traffic in the roadway
- 10) Ride single file
- 🚲 It is illegal in some areas to ride more than two abreast
  - 🚲 Ride single file between intersections; double up when the group stops
  - 🚲 When taking the lane, double up and take the whole lane

## Lane Changing in Traffic

### 1) Plan ahead

- ⌚ If you are familiar with the traffic patterns, be sure to get in the correct position early
- ⌚ Keep in mind the relative speed between you and other traffic; plan accordingly
- ⌚ Be aware of road conditions that would impede your progress across lanes

### 2) Scan

- ⌚ Look for traffic, pedestrians and hazards in front of you and behind
- ⌚ Identify lane markings and traffic control devices affecting next intersection
- ⌚ Note bus stops, driveways, crosswalks and other special traffic zones

### 3) Signal

- ⌚ Signal your intention to turn or change lanes if your speed is near other traffic
- ⌚ Signaling may not be necessary if overtaking traffic speeds won't allow time to see it
- ⌚ Signal only if you think that oncoming traffic can react safely

### 4) Act

- ⌚ Relative speed may require you to move quickly and decisively when it is safe to do so
- ⌚ In high speed overtaking traffic situations, cross all lanes at once when safe
- ⌚ Move after signaling in low- and same-speed traffic situations

### 5) Improvise

- ⌚ If you get caught between lanes while crossing traffic, ride the white line until clear
- ⌚ Your safety is paramount while changing lanes; if traffic is too heavy, use crosswalks
- ⌚ Ride to red light then move to left turn lane if volume and speed do not allow crossing

## Lane Positioning

### 1) Ride on the right

- 🚲 Ride in the same direction as traffic; stay far enough away from curb to avoid hazards
- 🚲 Ride in the right third of the right-most lane that goes in the direction you are going
- 🚲 Take the entire lane if traveling the same speed as traffic or in a narrow lane

### 2) Visibility

- 🚲 Always ride in or near a travel lane; stay visible by riding where drivers are looking
- 🚲 Wear bright clothing at night as well as during the day
- 🚲 Do not pass on the right; motorists are not looking for other vehicles there

### 3) Parked cars

- 🚲 Ride in a straight line, not in and out of parked cars on the side of the road
- 🚲 Beware of cars merging into the roadway from a parallel parking position
- 🚲 Always ride far enough away from parked cars to avoid hitting a surprise open door

### 4) Take the lane

- 🚲 If there is insufficient road width for cyclists and cars
- 🚲 If traveling the same speed as other traffic or if hazards narrow the usable width
- 🚲 Before intersections and turns to assert your position on the roadway

### 5) Extra wide lanes

- 🚲 Do not ride completely to the right; you will be more visible 3-4 feet away from traffic
- 🚲 Right turning cars and cars entering will be more likely to see you before they turn
- 🚲 Be careful of motorists passing on the right around left-turning vehicles

## Traffic Principles

- 1) Ride on the right
  - 🚲 Always ride with the flow of traffic
  - 🚲 Do not ride on the sidewalk
  - 🚲 Allow yourself room to maneuver around roadway hazards
  
- 2) Yield to traffic in busier lanes
  - 🚲 Roads with higher traffic volumes should be given right-of-way
  - 🚲 Always use signals to indicate your intentions to switch lanes
  - 🚲 Look behind you to indicate your desire to move and to make sure that you can
  
- 3) Yield to traffic in destination lane
  - 🚲 Traffic in your destination lane has the right-of-way
  - 🚲 Making eye contact with drivers lets them know that you see them
  - 🚲 Signal and make your lane change early, before you need to
  
- 4) Directional Positioning
  - 🚲 Position yourself in the right-most lane that goes in the direction of your destination
  - 🚲 Ride in the right third of the lane
  - 🚲 Avoid being overtaken in narrow-lane situations by riding in the right third of the lane
  
- 5) Speed Positioning
  - 🚲 Position yourself relative to the speed of other traffic
  - 🚲 Left-most lane is for fastest moving traffic, right-most for slower traffic
  - 🚲 Yield to faster moving vehicles by staying to the right in the lane

## Turns and Turn Lanes

### 1) Positioning for turns

- 🚲 Before a turn: scan, signal and move into the lane that leads to your destination
- 🚲 Ride in the right third or middle of the lane, as lane width dictates
- 🚲 To traverse multiple lanes, move one at a time, scanning and signaling each move

### 2) Avoiding turn lanes

- 🚲 If your lane turns into a right turn only lane, change lanes before the intersection
- 🚲 Changing lanes too late could result in an overtaking motorist turning in front of you
- 🚲 Maintain a constant position relative to the curb or shoulder during a turn

### 3) Beware of blind spots

- 🚲 Most drivers do not always expect to see cyclists on the roadway
- 🚲 Do not ride next to another vehicle unless you are in a different lane or passing
- 🚲 If you can't see bus, truck or car mirrors, drivers can't see you

### 4) Signaling

- 🚲 Signal well before the intersection; make sure you are in proper lane position
- 🚲 Left arm out and down with palm to the rear to indicate stopping
- 🚲 Left or right arm straight out to indicate left or right turn

### 5) Scan

- 🚲 Constant identification of potential hazards in front and behind as well as to each side
- 🚲 Scanning allows you to avoid dangerous situations before they happen
- 🚲 Scan for motorists, road conditions, and pedestrians

## Sharing the Path

### 1) Courtesy

- 🚲 Respect other trail users; joggers, walkers, bladders, wheelchairs all have trail rights
- 🚲 Respect slower cyclists; yield to slower users
- 🚲 Obey speed limits; they are posted for your safety

### 2) Announce when passing

- 🚲 Use a bell, horn or voice to indicate your intention to pass
- 🚲 Warn other well in advance so you do not startle them
- 🚲 Clearly announce "On your left" when passing

### 3) Yield when entering and crossing

- 🚲 Yield to traffic at places where the trail crosses the road
- 🚲 Yield to other users at trail intersections
- 🚲 Slow down before intersections and when entering the trail from the road

### 4) Keep right

- 🚲 Stay as close to the right as possible, except when passing
- 🚲 Give yourself enough room to maneuver around any hazards
- 🚲 Ride single file to avoid possible collisions with other trail users

### 5) Pass on left

- 🚲 Scan ahead and behind before announcing your intention to pass another user
- 🚲 Pull out only when you are sure the lane is clear
- 🚲 Allow plenty of room, about two bike lengths, before moving back to the right

### 6) Be predictable

- 🚲 Travel in a straight line unless you are avoiding hazards or passing
- 🚲 Indicate your intention to turn or pass
- 🚲 Warn other users of your intentions

### 7) Use lights at night

- 🚲 Most trail users will not have lights at night; use a white front and red rear light
- 🚲 Watch for walkers as you will overtake them the fastest
- 🚲 Reflective clothing does not help in the absence of light

### 8) Do not block the trail

- 🚲 For group rides, use no more than half the trail; don't hog the trail
- 🚲 During heavy use periods (holidays and weekends) stay single file
- 🚲 Stop and regroup completely off of the trail

9) Clean up litter

- 🚲 Pack out more than you pack in
- 🚲 Encourage others to respect the path
- 🚲 Place all litter in its proper receptacle

10) Limitations for transportation

- 🚲 Most paths were not designed for high-speed, high volume traffic
- 🚲 Use paths keeping in mind their recreational nature
- 🚲 It might be faster to use roads and avoid the traffic on the paths during heavy use

## Helmets

### 1) Wear a helmet

- ⌘ A helmet is your last line of defense in an accident; never ride without one
- ⌘ Helmets can reduce serious head injuries by 85% in a crash
- ⌘ A helmet will not protect your head if it is not properly fit

### 2) Shell and pads

- ⌘ Find the smallest helmet shell size that fits over your head
- ⌘ Helmet pads should not be used to make a helmet that is too big fit your head
- ⌘ Leave about two-fingers width between your eyebrows and the front of the helmet

### 3) Helmet Fit

- ⌘ Make sure that the helmet fits on top of the head, not tipped back
- ⌘ Always wear a helmet while riding a bike, no matter how short the trip
- ⌘ After a crash or any impact that affects your helmet, replace it immediately

### 4) Straps

- ⌘ The straps should be joined just under each ear at the jawbone
- ⌘ The buckle should be snug with your mouth completely open
- ⌘ Periodically check your strap adjustment; improper fit can render helmet useless

### 5) Ventilation

- ⌘ In general, the more vents the better; improper ventilation can cause overheating
- ⌘ Helmets with good ventilation can actually be cooler than riding with no helmet at all
- ⌘ More vents usually mean a higher priced helmet; buy one that you are proud to wear

### 6) Colors

- ⌘ Helmets come in different colors in different models; buy a highly visible color
- ⌘ Shell color does not affect the temperature of the helmet against your head
- ⌘ Pick a color that encourages you or your kids to wear it

## Bike Education and Helmets

### 1) Bicycle driver's education

- ⌘ Education is essential for the proper operation of a bicycle on roadways
- ⌘ Bicyclists are drivers of vehicles and the law treats them as such
- ⌘ A majority of bicycle-related deaths are caused by mistakes made by the operator

### 2) Motorist driver's education

- ⌘ States require driver's education before they will license you drive a motor vehicle
- ⌘ Motorists do not learn how to properly deal with bicycles on the roadway
- ⌘ Commercial drivers are not trained to understand cyclists rights

### 3) Helmets

- ⌘ Many states require riders under 16 to wear helmets while on a bike
- ⌘ Helmets decrease severe head injuries in bike related crashes by 85%
- ⌘ Helmet laws do not encourage safe riding

### 4) Why education?

- ⌘ Cyclists who have received education are less likely to be involved in a crash
- ⌘ Helmets do not decrease crash frequency, only severity
- ⌘ Education decreases crash frequency and severity

### 5) Mandatory helmet laws

- ⌘ Mandatory helmet laws have decreased ridership in some cases
- ⌘ Supporters point to deaths as the only measure of bicycle safety
- ⌘ Crash avoidance will decrease injuries and fatalities more than only wearing a helmet

## Bicycle Clothing Basics

### 1) Always wear a properly fitting helmet

- 🚲 Make sure that the helmet fits on top of the head, not tipped back
- 🚲 Always wear a helmet while riding a bike, no matter how short the trip
- 🚲 After a crash or impact on your helmet, replace it immediately

### 2) Shorts

- 🚲 Bike shorts include a pad to increase comfort while in the saddle
- 🚲 Tight, close fit keeps fabrics from rubbing your skin and causing irritation
- 🚲 Bike shorts should be worn alone or under another pair of lightweight shorts

### 3) Jerseys

- 🚲 Technical fabric of jerseys pulls moisture off of your skin to keep you dry
- 🚲 Jerseys do not absorb moisture; they do not get heavy with perspiration
- 🚲 On cold days, cotton will absorb water and hold it next to your skin, chilling you

### 4) Shoes

- 🚲 Stiff soles of cycling shoes allow better power transmission to pedals
- 🚲 Mesh vents allow air to circulate around feet keeping them dry
- 🚲 Shoes are usually designed to accept cleats for clipless pedals

### 5) Glasses

- 🚲 Protect your eyes from wind, dirt, debris and the sun while riding
- 🚲 Your front wheel or someone else's rear wheel can shoot glass or dirt at your face
- 🚲 Keep perspiration out of your glasses with a thin headband around your forehead

### 6) Gloves

- 🚲 Provide padding to help increase comfort and relieve numbness while riding
- 🚲 Protect your hands in the event of a fall with cycling specific gloves
- 🚲 Experienced cyclists can clean glass and debris off of tires with gloves while riding

### 7) Tights

- 🚲 Keep your legs warm and out of the wind with full-length tights when it's cold
- 🚲 Muscles function better when they are warm and protected from the elements
- 🚲 Full-length leg warmers which can be removed during a ride are also a good idea

## Carrying Kids

### 1) How old?

- ⌘ When children can hold their heads up, they are ready to go with you
- ⌘ Make sure that they have a big enough head to fit into a helmet
- ⌘ If unsure about whether your child can ride with you, consult your pediatrician

### 2) Helmet

- ⌘ Many manufacturers make helmets for infants; buy only Snell, ANSI or CPSC approved
- ⌘ Purchase a helmet from a reputable bike shop in your area
- ⌘ Replace helmet after impact; a crash or a drop can reduce its effectiveness

### 3) Helmet fit

- ⌘ The head should fit into the helmet with minimal padding
- ⌘ Make sure that the straps are snug under the baby's chin
- ⌘ Infant helmets protect more of the head than adult helmets

### 4) Trailers

- ⌘ Trailers usually have a ball and socket joint to prevent tipping if the bike falls over
- ⌘ Three point seatbelts and freestanding design make trailer much more stable
- ⌘ Higher initial cost, easier on/off, can be used for cargo or dogs, high resale value

### 5) Bike-mounted seats

- ⌘ Bike mounted child carriers raise the center of gravity and makes the bike less stable
- ⌘ It takes two people to load a child into a rear seat; one to hold bike, one to load kid
- ⌘ Lower initial cost, can be hard to remove, child specific, lower resale value

## Lights at Night

### 1) Visibility

- ⌘ By law, you must have a front white light and red rear reflector in most states
- ⌘ Motorists are familiar with white meaning front and red meaning rear
- ⌘ Front lights can illuminate your path or simply make you visible at night

### 2) Wattage

- ⌘ Inexpensive lights seldom light your path; at about 3 watts, they make you visible
- ⌘ Lighting systems are available that put out 45 watts with a halogen bulb
- ⌘ Most full-time commuters use at least a 10 watt system with a rechargeable battery

### 3) Power sources

- ⌘ From AA batteries to nickel-metal-hydride rechargeable, the options are endless
- ⌘ Self-contained, rechargeable batteries have the best life and brightest light
- ⌘ Simple AA powered lights have lower initial cost but frequent battery replacement

### 4) Helmet vs. bar mount

- ⌘ Helmet mounted lights allow you to get the attention of motorists by looking at them
- ⌘ Bar mounted lights make you look more like a vehicle but only point forward
- ⌘ The ideal situation is one helmet light and one bar-mounted light for safety

### 5) Rear lights

- ⌘ A red rear blinking light is much more conspicuous than a passive reflector
- ⌘ Make sure that your light is visible to motorists and not pointing up or down
- ⌘ Clear obstructions from the back of the bike that would block the light

## Tools for the Road

### 1) Know your ability

- 🚲 Take tools for work that you can perform
- 🚲 Try to fix things if you are sure that you can improve how they work
- 🚲 Do not depend on others for your mechanical needs

### 2) Know your bike

- 🚲 Maintain your bike or let a bike shop do it for you; twice a year for heavy use
- 🚲 Catch problems before they happen on the road with regular inspections
- 🚲 If you have hard to find items on your bike, stock up when you can

### 3) Know your ride

- 🚲 If you are going to be far from civilization, prepare with extra tools or parts
- 🚲 For short rides, you might not carry any tools if you don't mind walking
- 🚲 Urban areas may have more glass in the roadway; bring patches and a tube

### 4) Know your tools

- 🚲 Tire levers, tube, pump and patch kit for flats
- 🚲 Allen wrenches, chain tool and screwdriver for mechanicals
- 🚲 Understand which tools are needed for your bike; tools don't fix things, people do

### 5) Know your options

- 🚲 If you carry a phone for emergencies, make sure you have reception on your ride
- 🚲 First aid can be an important part of a tool kit; know how to use it
- 🚲 Stop to help others but only attempt to fix what you know you can