

# Humboldt Shifting Gears



## Basic Bike Commuting Guide



**An Introduction  
to the Fun  
and Rewarding  
Art of  
Bicycle  
Commuting**

# Why Commute by Bicycle?

Bicycling is a healthy, fun way to start and end a work day, and allows you to incorporate exercise into your daily routine. Since half of all daily trips in this country are five miles or less, bicycling is a practical way to travel to and from work or school, or for doing errands. Combined with transit, cycling can also be part of a commute over longer distances. Bicycles also cost less than \$300, and have very little yearly maintenance cost and far fewer effects on the environment.

This guide was created to ease the transition from commuting by car to commuting by bike and to make the experience safer and more enjoyable. If you're new to bicycle commuting, it may take a little while to develop your routine. But be persistent — you'll not only arrive at work alert and motivated and back at home relaxed, you'll save a lot of money too! Even veteran commuters should find some helpful tips.

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### Acknowledgements

The Bicycle Commuting Guide was adapted from the Utah Department of Transportation Bicycle Commuter Guide, Vermont Agency of Transportation Bicycle and Pedestrian Program Bicycle Commuter's Guide, Sacramento Area Council of Governments Bike Commute Guide, Durham Bicycle & Pedestrian Advisory Commission Basic Bike Commuting, Washington State Bicycle Commuting Guide, and Bike Commuting in Santa Barbara County.

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# The Bicycle



1. Seat Stay	The part of the frame that connects the top of the seat tube to the rear dropout. It usually intersects the seat tube near where the top tube joins the seat tube.
2. Front Derailleur	The mechanism that moves the chain from one chainring to another (found above the bottom bracket).
3. Frame	A bicycle frame is the main component of a bicycle, onto which wheels and other components are fitted.
4. Headset	The components (including the ball bearings) that allow the handlebar to rotate and steer the fork.
5. Head tube	The head tube contains the headset, the interface with the fork.
6. Fork	Holds the front wheel and, with a suspension fork, provides shock absorption so the rider can keep the front wheel on the ground and maintain steering control.
7. Dropouts	The slots on the frame and fork that holds the wheel axles.
8. Cassette	Toothed cogs that make up the gears (attached to the rear wheel).
9. Rear Derailleur	The mechanism that moves the chain from one gear to another (found below the rear dropout).
10. Chainstay	A section of the frame that connects bottom bracket to rear dropout.
11. Bottom Bracket	The bottom bracket includes the pedal axle and bearings.
12. Chainrings	Toothed rings that directly connect to the crank.
13. Crank	Connects the pedals to the chainring.
14. Pedal	Pedals come in three main types: clipless, platform, and cage.
15. Down tube	Frame tube that connects the bottom bracket to the Head Tube.

If you are fairly new to biking, getting more serious, or getting back into cycling then it is important to consider your personal riding style and preferences when deciding on a bike type. There are several types of bicycles categorized by function (racing, recreation, etc); number of riders (one or more); construction or frame type (upright, folding, etc); gearing (single or multiple speeds); sport (mountain biking, BMX, triathlon, etc); means of propulsion (human-powered, motor-assisted, etc); and rider position (upright, recumbent, etc).

The categories below summarize the most common or most popular bicycle types using the most commonly used names for the various bicycle types or categories.

<p><b>Hybrid/City/Utility Bicycle</b></p>  <p>Designed for daily commuter use, often has rear carrier racks and mudguards or at least built-in fittings for these. Best for general leisure, shopping, commuting and utility cycling on most journeys of 5 miles or less.</p> <p>Normally has 15-21 gears, some have 'hub' (hidden) rear gears.</p> <p>Features include straight handlebars –'bent back' ones are also available</p>	<p><b>Mountain Bicycle</b></p>  <p>Designed for off road and general cycling. Suitable for cycling over rough ground, though many are used for on-road and leisure cycling.</p> <p>Smaller wheels than most other styles of bicycle. Frequently has at least 21 gears.</p> <p>Straight handlebars, hi-tech brakes and suspension are common features.</p> <p>Often do not have fixings for mudguards or carrier racks.</p>
<p><b>Touring Bicycle</b></p>  <p>Designed for comfortable commuting and most especially mid to longer distance cycling and load carrying. Suitable for commuting and carrying shopping goods and materials.</p> <p>Built with a standard frame design and wheel size.</p> <p>Drop handlebars and good quality components are common features. Typically 21 gears are standard.</p> <p>Carriers and mudguards are standard.</p>	<p><b>Road/Racing Bicycle</b></p>  <p>Designed for speed and road use, not suitable for off road. Often very light, and minimalist in terms of accessories. These bicycles are not suitable for carrying loads.</p> <p>Hi-tech and specialist frames and components.</p> <p>Often very thin tires. Typically 21 gears are standard.</p> <p>Rarely has mudguards, carriers or fittings.</p>

# Bicycle Fit

A proper bike fit is important. A bike that is too large or too small may be difficult to control and can lead to discomfort or injury. Ask your bike shop for help fitting your bike. Height, body proportions and personal flexibility determine how your bike should be set up. Different things work for different folks – there is no single correct position. Here are some general guidelines:

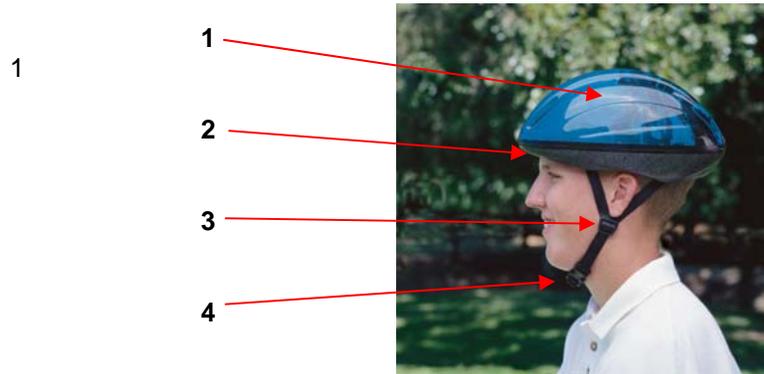
- **Bike Height:** Stand with your bike between your legs. Measure the space between the highest part of the top tube and your crotch. For road bicycles you should have at least one inch of clearance between the top tube and your crotch as you stand astride the bike. For hybrid and cross bikes, you should have approximately two inches. For mountain bike, you should have three to four inches.
- **Seat Height** - A seat that's too low will strain your knees, while a seat that's too high will make it hard for you to pedal and put your foot down. Some considerations:
  - Sit on your bike and push one pedal all the way down. Put the ball of your foot on the pedal. If your seat's high enough your knee should be slightly bent.
  - If your hips rock from side to side when you pedal, your seat's too high.
  - Only raise your seat as high as allowable, most seat posts have a mark showing how high you can raise them. If you have to raise your seat higher, get a longer seat post.
- **Seat Tilt** - Adjust your seat tilt for comfort. If the front of your seat's tilted too high your bottom will hurt, and if it's tilted too low you'll slide forward and strain your arms.
- **Fore/Aft Seat Position** - Adjust the saddle so that with pedals parallel to the ground (nine o'clock and three o'clock positions), a line descending from just below your forward kneecap will pass through the pedal axle. This is just a general rule of thumb, alter it as you like.
- **Handlebars** - Set them so you feel comfortable. Some considerations:
  - You should be able to completely enclose the handlebar with your hands, and easily reach the brake levers with your fingers.
  - Raise or lower your handlebars until they block your view of the front axle when you're sitting on your bike.
  - With your hands on the handlebars, you're elbows should be slightly bent (not locked).
  - Lower-back pain often means the handlebars are too far away, while upper-arm or shoulder fatigue often means the handlebars are too close to you.
  - Most stems have a mark showing how high you can raise them. If you have to raise your handlebars higher, get a longer stem.
  - Rotate your handlebars so that they put even pressure across the palms of your hands without bending your wrists in a strange way.
- **Frame Length** - If, when you ride, you feel overly stretched or have pain in your neck, shoulders, or back, your frame might be too long. Try moving the seat and handlebars closer together.



# Outfitting Yourself

## Helmet: A Must

Using a helmet can reduce the chance and severity of injury if properly sized, adjusted, and consistently worn. A helmet should have a CPSC (Consumer Product Safety Commission) certification sticker, required on helmets sold in the US since 1999. Always replace a helmet that has been in a crash and never buy used helmets.



Here are four points for proper helmet fit:

1. The helmet should fit snugly and should not shake. Use the foam pads to make it fit.
2. The helmet should cover the forehead and sit on your forehead with about 2-fingers width between the brim and your eyebrows. The helmet should be level on your head.
3. Side straps should meet in a 'V' below your ear lobes.
4. Fasten the strap under the chin, with one finger's width of space between the strap and the chin.

## Common Commuter Clothing

- Wear bright clothing or accessories (e.g. reflective arm/leg bands, vests, waterproof windbreaker)
  - In daylight, fluorescent or light-colored items are very visible
  - At night, reflective items are most visible
- Use a strap, clip, or rubber band around your pants cuff to keep them from hitting your bike.
- Avoid clothing that holds in moisture, find clothing with "wicking" materials (synthetics or wool keep you warm when wet and dry out quickly)
- Eyewear/Sunglasses
- Stiff-soled shoes comfortable for walking
- Wear gloves, they help protect hands, improve grip, and reduce road vibration
- In cold weather
  - Wear a thin wicking layer against your skin to keep yourself dry
  - Use an insulating layer atop the thin layer
  - Wind or rain jacket as final layer, if needed
  - Warm gloves
- In rain
  - Wear waterproof and breathable fabric
  - Waterproof poncho, while not breathable, allows good ventilation
  - "Arm-pit zips" in jackets allow perspiration to evaporate
  - Rain pants should be long enough to cover the top of your footwear to keep them dry

## Work Clothes

Cycling in partial or full office attire is sometimes feasible. You could buy a garment bag that attaches to a bicycle (available at bicycle stores) and change clothes when you get to work. Rolling clothes instead of folding them is a great way to reduce wrinkling. Also, you could leave an extra set of work clothes at work.

# Outfitting Your Bicycle

You don't have to spend a lot of money on equipment, but certain items make commuting safer and more enjoyable. Talk with friends and bike shop staff and read bicycle magazines to help you make choices.

## Headlights & Tail Lights

Every bicycle operated upon any highway during darkness shall be equipped with the following (California Vehicle Code 21201):

- A lamp emitting a white light which illuminates the highway and is visible from a distance of 300 feet to the front and the sides of the bicycle. Instead of a lamp attached to the bike, a lamp or lamp combination, emitting a white light, attached to the operator and visible from a distance of 300 feet in front and from the sides of the bicycle, may be used.
- A red reflector mounted on the rear of the bicycle and visible from 500.
- A white or yellow reflector mounted on each pedal visible 200 feet to the front and rear of the bicycle and a white or red reflector on each side to the rear of the center of the bicycle, except bicycles which are equipped with reflectorized tires on the front and the rear need not be equipped with side reflectors. All reflectorized tires must meet DMV requirements.



In addition to the above, tail lights are also recommended for night riding.

## Carrying Cargo: Racks, Panniers & Trailers



Consider installing a rack, panniers (bags that hang from the side of a rack), or a trailer to enable you to carry things you need at work or school. Carrying loads on racks or trailers instead of in a backpack makes riding more comfortable and balanced. Use bungee cords to tie things to your carrying rack and consider plastic bags to keep things dry.

## Tools

It's a good idea to carry a basic tool kit with a small set of allen wrenches, a patch kit, tire levers, a spare inner tube, pump, rag, and non-latex gloves. Make sure you learn how to fix a flat! Flat repair is often featured in print and online bicycling resources and is always included in repair manuals.

## Fenders

Fenders are a must for cycling in wet conditions. They nearly eliminate spray from wheels, keeping you drier and cleaner. Various designs are available, but the more wheel coverage a fender offers, the better.

## Lock

If you park your bike outside, lock your frame and both wheels to an immovable object, not to an object that can be easily unbolted, bent, cut or removed and take all easily removed accessories with you.

## Other Items

- Mirrors - Some cyclists use mirrors to see traffic behind them using a helmet- or bar-mounted mirror.
- Bells and Horns - Any kind of sounding device can alert others to your presence.
- Water Bottle and Cage – Carry water with you to stay while riding.

# Quick Check

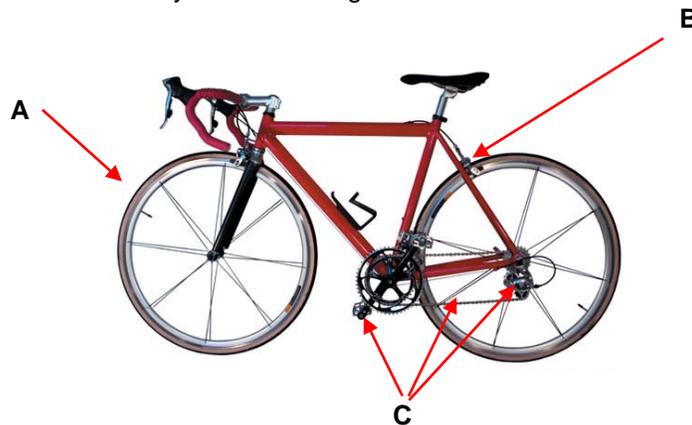
Safety starts with your bike. Here are a few simple things to check for a safe ride. While these checks help you find problems, you won't learn how to fix them all. If you need help, go to your owner's manual, a maintenance book, or a bike shop.

- A is for Air
  - Inflate tires to pressure listed on sidewall of tire. Use a pressure gauge to insure proper pressure or push each tire hard against a curb, if you can flatten it, add air.
  - Turn each wheel very slowly and look for big cuts, bulges, bubbles, or places you can see the inner casing. If you spot any, replace the tire. Remove glass or other debris.
  - If the valve stem doesn't point straight at the middle of the wheel, the rim might cut it; let the air out and straighten the valve.
- B is for Brakes
  - Inspect pads for wear; replace if there is less than 1/4"
  - Lift each wheel up and give it a slow spin forward. If the wheel won't spin smoothly, see whether it's rubbing against the brake pads, frame, or something else.
  - Check brake levers; there should be at least 1" between handlebar and lever when applied

- C is for Chain, Crank, Cassette



- Check your chain for wear, rust, and grime. Lubricate your chain if dry or squeaking. To remove chain grime, grab the bottom of the chain loosely with a lint-free rag and turn the pedals backward, sliding the chain through the rag.
  - Crank (Pedal) Bolts, make sure they are tight
  - If your chain skips on your cassette (rear chain-ring teeth component), you might need an adjustment or a new one
- Quick Release
    - Make sure the quick release levers are tightened. All quick release levers should point back to insure that nothing catches on them.
  - Final Check Over
    - Take a quick ride to check if derailleur's 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



# Bicycles and Transit

Bicycling can be an easy and inexpensive way to get to a bus stop. Bike racks are available on all Redwood Transit System (RTS) buses. Passengers are responsible for loading, securing, and unloading their own bikes. Bikes should be loaded and unloaded quickly to avoid delaying the bus schedule. If you have any questions, please ask your driver.

## 10 Steps for Using the Bike Rack

1. Before the bus arrives at your stop, make sure to remove bike pumps and water bottles or secure them so they do not fall off during the bus trip.
2. When the bus arrives at your stop, indicate to the driver that you will be loading your bicycle onto the rack. Remember to look closely before stepping off the curb to load and unload your bike.
3. To release the rack, squeeze the center handle and slowly lower it. If the rack is already lowered and a bike is in position, use the other available bike wheel well.
4. After lowering the rack, lift your bicycle into the available wheel well, making sure that the front wheel is placed on the side labeled "front wheel."
5. After the bike is in the rack pull the support arm out and up over the front tire of the bike. A spring pulls the arm back and holds the bike securely in place. The rack contacts the bicycle's tires only.
6. After the support arm is in place, be ready to board the bus.



7. When you reach your destination, inform the driver you will be removing your bike.
8. Raise the support arm off the tire and return it to its original position.
9. Lift your bike out of the bike rack. If it is empty, please return the rack to its upright position.
10. Step away from the bus and onto the curb with your bike. Indicate to the bus driver that you are clear of the bus.

## Responsibility

Bike racks are provided as a convenience to bus riders. Humboldt Transit Authority is not responsible for: the theft or loss of bikes; damages incurred to bikes while on the transit system or at a bus stop; damages to bikes during loading or unloading; or injury to the rider during loading or unloading a bike. Riders will be responsible for any damages or injuries to third parties caused by the rider or bike while loading or unloading the bike, or failing to secure the bike on the rack correctly.

# Bicycle Resources

- League of American Bicyclists: <http://www.bikeleague.org/>
- Pedestrian and Bicycle Information Center: [www.bicyclinginfo.org](http://www.bicyclinginfo.org)
- The California Vehicle Code sections 21200-21960 contain rules specifically for bicyclists. For exact wording of the law, look here:  
<http://www.csaa.com/portal/site/CSAA/menuitem.c13d2427e527f6a08e7ea35492278a0c/?vgnextoid=374d727e4181d010VgnVCM100000c512daceRCD&cpsexcurrchannel=1>
- Bicycle Tourism in District 1 Maps: <http://www.dot.ca.gov/dist1/d1transplan/bikeped/bikeguide/>
- Books:
  - Bicycling Street Smarts: Riding Confidently, Legally and Safely by John S. Allen
    - Printed copy: Rubel BikeMaps, PO Box 401035, Cambridge, MA 02140 USA  
[www.bikemaps.com](http://www.bikemaps.com)
    - Online version: <http://www.bikexpert.com/streetsmarts/usa/index.htm>
  - A Woman's Guide to Cycling by Susan Weaver. Ten Speed Press; Rev Sub edition (1998).
  - Effective Cycling: Instructor's Manual, 6<sup>th</sup> ed. (2008) by John Forester.  
<http://www.johnforester.com/BTEO/ECIM6.pdf>