



# **DRAFT VISUAL GLOSSARY OF BICYCLE FACILITIES**

**(WILL BE PART OF THE BMP  
BICYCLE FACILITIES CHAPTER)**

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# NEIGHBORHOOD GREENWAYS

## Neighborhood Greenways

Neighborhood Greenways use signs, pavement markings, and traffic calming measures to discourage (though not prohibit) through trips by motor vehicles and create safe, convenient bicycle and pedestrian crossings of busy arterial streets.



## NEIGHBORHOOD GREENWAY

Neighborhood Greenways are streets with low motorized traffic volumes and speeds, designated and designed to give bicycle and pedestrian travel priority. Neighborhood Greenways use signs, pavement markings, and traffic calming measures to discourage through trips by motor vehicles and create safe, convenient bicycle and pedestrian crossings of busy arterial streets.



## TRAFFIC CALMING

Traffic Calming measures for *Neighborhood Greenways* bring motor vehicle speeds closer to those of bicyclists. Reducing speeds along the neighborhood greenway improves the bicycling environment by reducing overtaking events, enhancing drivers' ability to see and react, and diminishing the severity of crashes if they occur. Traffic Calming is critical to creating safe and effective neighborhood greenways. Common traffic calming techniques include speed humps, neighborhood traffic circles, chicanes, and pinch points.



Traffic calming measures also reduce or discourage through traffic on designated *Neighborhood Greenways* blocking access to the route by motor vehicles. Common techniques include partial closures, median refuge islands, and signal restrictions.



## SHARED STREET

On shared streets, bicyclists and motor vehicles use the same roadway space.

To provide comfort for bicyclists, shared streets employ basic treatments such as signage and shared lane markings to help improve conditions for bicyclists.



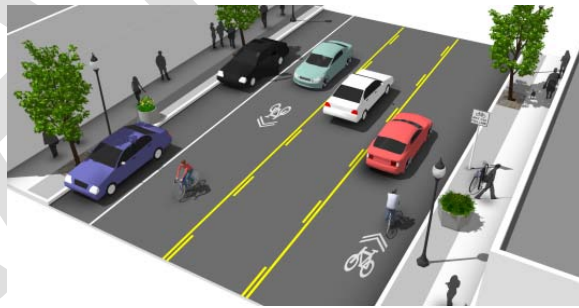
## ADVISORY BICYCLE LANE

Advisory bicycle lanes are bicycle priority areas delineated by dotted white lines and marked with *Shared Lane Markings*. The automobile lanes are not marked with a centerline and should be configured narrowly enough so that cars and bicyclists must negotiate the roadway space when passing is required. Motorists may enter the bicycle zone to overtake other vehicles only when no bicycles are present.



## BAT LANES

“Business Access and Transit” lanes are reserved for exclusive use by buses and bicyclists. It may also be used for general-purpose traffic right-turn movements onto cross streets and for access to adjacent properties. BAT lanes should have appropriate signage acknowledging that bicyclists are permitted.



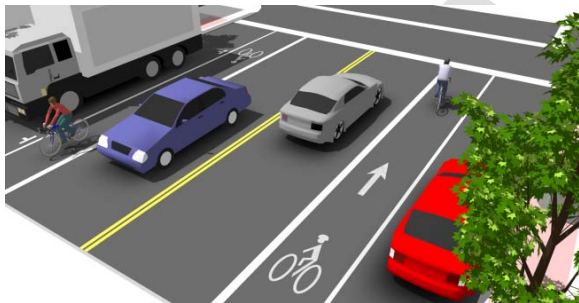
## SHARED LANE MARKING

Shared Lane Markings (SLMs), are road markings used to indicate a shared lane environment for bicycles and automobiles. SLMs reinforce the legitimacy of bicycle traffic on the street and recommend proper bicyclist positioning. The shared lane marking is not a facility type; it is a pavement marking with a variety of uses to support a complete bicycle facility network.

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# IN STREET, MINOR SEPARATION

In street, minor separation facility types are appropriate when the prevailing motor vehicle travel speeds and volumes are too high for safe and comfortable operation within a shared lane, and when application of *Traffic Calming* techniques are not available or appropriate.



## BICYCLE LANE

Bicycle lanes designate an exclusive space for bicyclists with pavement markings and signage. The bicycle lane is located adjacent to motor vehicle travel lanes and bicyclists ride in the same direction as motor vehicle traffic. Bicycle lanes are typically on the right side of the street (on a two-way street), between the adjacent travel lane and curb, road edge or parking lane.



## BUFFERED BICYCLE LANE

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



## COLORED TREATMENT

Colored treatment within a bicycle lane increases the visibility of the bicycle facility. Colored pavement may be applied in areas with pressure for illegal parking, frequent encroachment of motor vehicles, clarify conflict areas, and along enhanced facilities such as *Contra-Flow Bicycle Lanes* and *Cycle Tracks*.



### CONTRA-FLOW BICYCLE LANE

Contra-flow bike lanes provide bidirectional bicycle access on a roadway that is one-way for motor vehicle traffic. This treatment can provide direct access and connectivity for bicyclists and reduce travel distances.



### UPHILL CLIMBING LANE

Uphill climbing lanes enable motorists to safely pass slower-speed bicyclists, thereby improving conditions for both travel modes. Uphill travel, where bicyclists are slow and likely to weave widely, are provided a dedicated, separated space. Downhill travel, where speeds are similar to that of motor vehicles, bicyclists are expected to travel in the general purpose travel lane, marked with *Shared Lane Markings*.



### LEFT-SIDE BICYCLE LANE

Left-side bicycle lanes are conventional bicycle lanes placed on the left side of one-way streets or two-way median divided streets.

Left-side bicycle lanes offer advantages on streets with heavy delivery or transit use, frequent parking turnover on the right side or other potential conflicts that could be associated with right-side bicycle lanes.



### UPHILL BICYCLE PASSING LANE

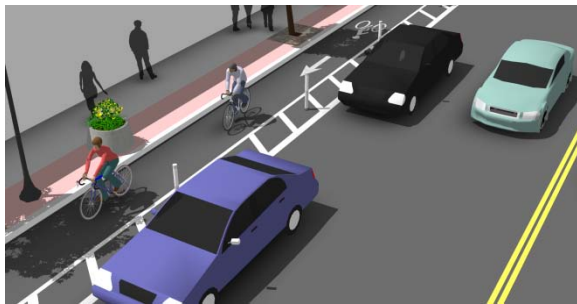
An uphill bicycle passing lane configures a second bicycle lane adjacent to the first to provide ample space for passing on steep hills.

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# CYCLE TRACKS

Of all bicycle facilities, Cycle tracks offer the most protection and separation from adjacent motor vehicle traffic.

Cycle tracks may be *One-Way* or *Two-Way*, and may be at *Street Level*, or *Raised* to the sidewalk or an intermediate level.



## ONE-WAY CYCLE TRACK

One-way cycle tracks are physically separated from motor vehicle traffic and distinct from the sidewalk. In situations where on-street parking is allowed, cycle tracks are located to the curb-side of the parking (in contrast to bicycle lanes).



## RAISED CYCLE TRACK

Raised cycle tracks are elevated above the street, to sidewalk level or an intermediate

height. If at sidewalk level, a raised or mountable curb separates the cycle track from the roadway, while different pavement color/texture separates the cycle track from the sidewalk.

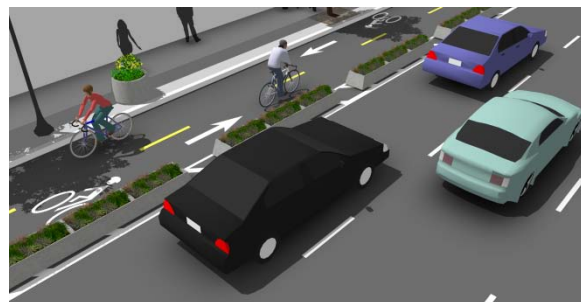
A raised cycle track may be designed for *One-Way* or *Two-Way* travel by bicyclists.



## STREET-LEVEL CYCLE TRACK

Street level cycle tracks are configured at the same level as general travel lanes. They must be protected from traffic with a physical barrier, such as bollards, planters raised medians, or on-street parking.

A street-level cycle track may be designed for *One-Way* or *Two-Way* travel by bicyclists.



## TWO-WAY CYCLE TRACK

A Two-way cycle track is an in street bicycle facility that allows bicycle movement in both directions on one side of the street.

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A two-way cycle track may be configured as a *Street Level Cycle Track* with a parking lane or other barrier or as a *Raised Cycle Track* to provide vertical separation from the adjacent motor vehicle lane.

If bicyclists are expected to descend within the cycle track, adequate width should be provided clear of obstacles to reduce the likelihood of high-speed collisions with fixed objects.



### CYCLE TRACKS ON HILLS

Bicycle travel uphill is often at slow speed and may result in a wide weaving path. Downhill bicycling may be high-speed, potentially equal to that of motor vehicles.

Cycle tracks on hills should be designed to accommodate the physical requirements and behavior for both uphill and downhill bicycle travel. *One-Way Cycle Tracks* are more appropriate than *Two-Way Cycle Tracks* under these conditions.

In the uphill direction, adequate lateral clearance should be provided to allow for both slow weaving and parallel passing, similar to an *Uphill Bicycle Passing Lane*. In the downhill direction, the design should permit bicyclist to leave the cycle track and descend in the adjacent general purpose travel lane, similar to the concept of the *Uphill Bicycle Climbing Lane*. Bicyclists should travel in a safe manner and with reasonable downhill speeds.

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# OFF STREET BICYCLE FACILITIES

Off street facilities include bicycle facilities that are distanced from the roadway, or that exist in an independent corridor not adjacent to any road.



## MULTI-USE TRAIL

A multi-use trail allows for two-way, off street bicycle use and may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles.



## OVERPASS

Overpasses provide critical non-motorized system links by joining areas separated by barriers such as deep ravines, waterways or major streets or freeways. A Crime Prevention Through Environmental Design (CPTED) lens should be followed when designing the underpass.



## UNDERPASS

Underpasses provide critical non-motorized system links by joining areas separated by barriers such as railroads and highway corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist.



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# INTERSECTION TREATMENTS

Intersection treatments are designed to increase the comfort and safety or decrease delay for bicyclists. Some treatments are designed to help neighborhood greenways cross busy streets, other treatments are designed to reduce conflicts for cycle tracks or bicycle lanes at major intersections.



## ACTIVE WARNING BEACON

Active warning beacons are user-actuated amber flashing lights that supplement warning signs at unsignalized intersections or mid-block crosswalks. Beacons can be actuated either manually by a push-button or passively through detection. Rectangular Rapid Flash Beacons (RRFBs), a type of active warning beacon, use an irregular flash pattern similar to emergency flashers on police vehicles. Active warning beacons should be used to enhance driver yielding for bicyclists and pedestrians.



## BICYCLE DETECTION AND ACTUATION

Bicycle detection is used at actuated signals to alert the signal controller of bicycle crossing demand on a particular approach. Bicycle detection occurs either through the use of push-buttons or by automated means (e.g., in-pavement loops, video, microwave, etc). Inductive loop detectors are identified with a pavement marking to inform bicyclists of proper positioning to trigger the detector.



## BICYCLE SIGNAL

A bicycle signal is a bicycle-specific traffic signal and is used to improve operations for bicyclists using the intersection. Bicycle signal heads may be used to indicate an exclusive bicycle phase, separate bicycle movements from conflicting automobile turn movements, or to provide a *Leading Bicycle Interval*.



### GREEN BIKE BOX

A green bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase. Motor vehicles must wait behind the white stop bar line at the rear of the bike box, and right turn on red is not typically permitted.



### BICYCLE FORWARD STOP BAR

A bicycle forward stop bar is a second stop bar placed beyond the crosswalk, closer to the center line of the street. Bicyclists may advance to this crosswalk while waiting at an intersection. This increases the visibility of bicyclists waiting to cross the street and is often paired with *Curb Bulbs*.



### BICYCLE CENTER TURN LANE

Bicycle center turn lanes allow bicyclists to cross an intersection that is offset to the right, or when making a left turn from a *Bicycle Lane*. Bicyclists cross one direction of traffic and wait in a separated center lane for a gap in the other direction.



### COMBINED BICYCLE LANE/TURN LANE

A combined bicycle lane/turn lane places dotted bicycle lane lines or *Shared Lane Markings* within the inside portion of a turn only lane to guide bicyclists to the intersection. This configuration helps reduce conditions that lead to "right-hook" collisions.

When configured on a cycle track, the combined lane is commonly called a *Cycle Track Mixing Zone*, and is intended to minimize conflicts with turning vehicles at

intersections as an alternative to an exclusive bicycle signal phase.



### CURB BULBS

Curb bulbs (also called curb extensions) are areas of the sidewalk extended into the roadway, most commonly where a parking lane is located. Curb bulbs help position bicyclists closer to the street centerline to improve visibility and encourage motorists to yield at crossings. They also reduce pedestrian crossing distances. This treatment may be combined with a *Bicycle Forward Stop Bar*.



### CYCLE TRACK MIXING ZONE

A cycle track mixing zone is a shared lane for use by bicyclists and turning automobiles. The facility is intended to minimize conflicts with turning vehicles by requiring users to negotiate use of the lane in advance of the

intersection. The narrow lane discourages side-by-side operation of bicycles and automobiles, reducing potential “right hook” conditions.

When configured on a bicycle lane facility, this is called a *Combined Bicycle Lane/Turn Lane*.



### PROTECTED BICYCLE SIGNAL PHASE

Providing an protected bicycle signal phase is one way to reduce conflict between right turning vehicles and people on bicycles. Separate traffic signals control the conflicting maneuvers, increasing predictability for all users through the intersection.



### “GREEN WAVE” SIGNAL TIMING

Green wave is a signal timing progression scheme coordinated over a series of traffic

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signals to allow for continuously flowing traffic over a long distance. Users traveling at the green wave design speed will encounter a cascade of green lights and not have to stop at intersections.



### HALF SIGNAL (PEDESTRIAN AND BICYCLE SIGNALS)

Half signals are traffic control signals configured to control traffic along only one street at an intersection. These are most commonly used to stop traffic along a major street to permit crossing by pedestrians or bicyclists. Half signal installations function similarly to *Pedestrian Hybrid Beacons*.



### INTERSECTION MARKINGS

Intersection markings indicate the intended path of bicyclists through an intersection or across a driveway or ramp. They guide bicyclists on a safe and direct path through the intersection and provide a clear boundary

between the paths of through bicyclists and either through or crossing motor vehicles in the adjacent lane. *Colored Treatment* may be used for added visibility of the facility.



### LEADING BICYCLE AND PEDESTRIAN INTERVAL

A leading bicycle interval is a condition where a *Bicycle Signal* is used to display a green signal for bicyclists and pedestrian prior to displaying a green signal for adjacent motor vehicle traffic. This early display gives bicyclists and pedestrians a head start and may increase the percentage of drivers who yield to bicyclists and pedestrians. All-way pedestrian and bicycle signal phase is another intersection treatment that allows bicyclists and pedestrians to cross in any direction within their own signal phase. Commonly called an all-way walk, but with bikes added to the mix.



### MEDIAN REFUGE ISLAND

Median refuge islands are protected spaces placed in the center of the street to facilitate bicycle and pedestrian crossings. Crossings of two-way streets are simplified by allowing bicyclists and pedestrians to navigate only one direction of traffic at a time. This also functions as a *Traffic Calming* technique as part of a *Neighborhood Greenway*.



### NO TURN ON RED

No Turn on Red restrictions prevent turns during the red signal indication to reduce motor vehicle conflicts with bicyclists and pedestrians. Commonly, this restriction is established at all bike box installations, and where bicycle signals are used to separate bicycle traffic from motor vehicle traffic.



### OFFSET STREET CONNECTION

Offset intersections can be challenging for bicyclists to navigate, particularly on major streets. Specific configurations vary based on the direction of the offset, the presence of signalization and the amount of adjacent traffic. Common configurations include *Bike Lane Offset Street Connection*, *Cycle Track Offset Street Connection*, *Bicycle Center Turn Lane* and *Two-Stage Turn Boxes*.



### THROUGH BICYCLE LANES AT RIGHT TURN ONLY LANES

At right-turn only lanes the bicycle lane should transition bicyclists to the left of the right-turn only lane. Dotted bicycle lane lines or shared lane markings direct bicyclists through the merging area into the bicycle lane at the intersection.

If there is inadequate space for a dedicated through bike lane, a *Combined Bike Lane/Turn Lane* may serve the same purpose.



## TWO-STAGE TURN BOX

Two-stage turn queue boxes offer bicyclists a safe way to make turns at multi-lane signalized intersections from a right or left side cycle track or bicycle lane by separating the turn movement into two stages. Signage will accompany the installation to help educate bicyclists and motorists of the new intersection treatment.

Turn boxes may also be used at *Offset Street Connections* that jog to the right to orient bicyclists directly across the offset street.

# SIGNING FOR BICYCLE FACILITIES

Clear, consistent signage is important to encourage appropriate and safe use of bicycle facilities.



## REGULATORY SIGNS

Regulatory signs give a direction that must be obeyed, and apply to intersection control, speed, vehicle movement and parking. They are usually rectangular or square with a white background and black, white or colored letters. NO PARKING signs are regulatory signs used to assign and reserve space for bicyclists.



## TRAIL ETIQUETTE SIGNS

Informing trail users of acceptable trail etiquette is a common issue when multiple user types are anticipated. Yielding the right-of-way is a courtesy and yet a necessary part of a safe trail experience involving multiple trail users.



## WARNING SIGNS

Warning signs call attention to unexpected conditions on or adjacent to a street or bicycle facility.

Warning signs may warn users of the bicycle facility of obstructions, detours, unexpected change in path or adverse conditions ahead.

Warning signs may also be used at cross streets to warn drivers to expect and anticipate bicycle crossing activity.



## WAYFINDING SIGNS

A bicycle wayfinding system consists of comprehensive signing to guide bicyclists to their destinations along preferred bicycle routes. Signs can help indicate turns, identify routes, and navigate intersections of multiple bicycle facilities.

# BICYCLE PARKING AND ACCESS

Bicyclists expect a safe, convenient place to secure their bicycle when they reach their destination. This may be short-term parking on a simple bike rack or long-term parking for employees, students, residents, and commuters.

Additionally, bicycle access to buildings should be considered, including methods to accommodate bicycles on stairs and elevators.



## BIKE CORRAL

Bicycle corrals (also known as on-street bicycle parking) consist of bicycle racks grouped together in a common area within the street traditionally used for automobile parking. Bicycle corrals can be implemented by converting one or two on-street motor vehicle parking spaces into on-street bicycle parking. Each motor vehicle parking space can be replaced with approximately 6-10 bicycle parking spaces.



### BIKES ON ELEVATORS

Accommodating bicyclists on elevators is one method to overcome steep topography, to provide bicycle access to a street *Overpass*, or allow bicyclists to enter buildings. The elevator cab should be sized to allow for multiple bikes and trailers or trail-a-bike attachments. Installations with both front and back doors allow bicyclists to enter and exit the elevator easily. Many elevators that bicyclists use in Seattle are not the City of Seattle assets, so ensure that bikes are allowed.



### BIKE RUNNELS ON STAIRS

A bike runnel is a narrow ledge along the side of a stairway which allows bicyclists to push bikes up or down the staircase.



### BIKE SHELTER

Bike shelters are structures designed to cover and protect multiple *Bike Racks* and their users from inclement weather. Although they lack the added security of a *Secure Bicycle Parking Facility*, the weather protection makes them attractive to meet medium-term parking needs.



### BIKE RACK

Bike racks on sidewalks are the simplest form of bike parking, and are well suited for short-term parking needs. Bike racks are meant to accommodate visitors, customers, and others expected to depart within a short period.





## **SECURE BICYCLE PARKING FACILITY**

A secure bicycle parking facility (also known as a Bike & Ride when located at transit stations), is a semi-enclosed space that offers a higher level of security than ordinary bike racks. Access is controlled via key-card, combination locks, or keys. Secure bicycle parking facilities provide high-capacity parking for 10 to 100 or more bicycles.

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# MULTI-USE TRAIL CROSSINGS

Multi-use trail crossing treatments are designed to increase the comfort and safety or decrease delay for trail users.



## ENHANCED TRAIL CROSSINGS

See *Active Warning Beacons* and *Half Signals (Pedestrian and Bicycle Signal)* for techniques to increase yielding of drivers to trail users.

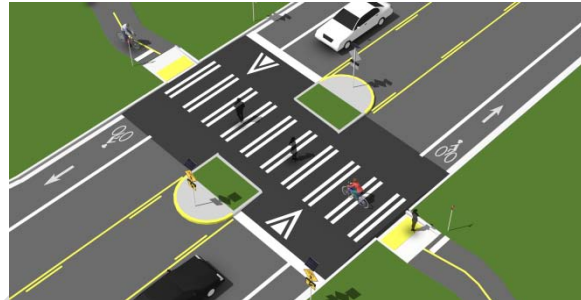


## MARKED CROSSINGS

A marked crossing typically consists of a marked crossing area, *Warning Signs* and other markings to slow or stop traffic.

When space is available, a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the

safe crossing of one half of the street at a time.



## RAISED CROSSWALK

Raised crosswalks are crossings elevated to the same grade as the multi-use trail. Raised crosswalks may be designed as speed tables, and have a slowing effect on crossing traffic.



## SIGNALIZED CROSSINGS

Where practical, multi-use trail alignments may use existing signalized intersections by routing trail users to a signalized intersection. Barriers and signing may direct trail users to the signalized crossing. *Bicycle Signals* may be used to assist in bicyclist crossing.