Urban Bikeway Design Guide

- ‘Conventional’ bike lanes
- Colored bike lanes
- Buffered bike lanes
- Contra-flow bike lane
- Bike boxes
- Two-stage turn queue boxes
- Intersection crossing markings
- Bike signals
- Bike route signage
- Cycle tracks
Attracting a Different Type of Rider

“Riding a bicycle should not require bravery”

– Roger Geller, Portland Office of Transportation

Source: Portland Office of Transportation - Survey on public attitudes towards cycling
Cycle Tracks
One-way Cycle Track
Separated Bikeways/Cycle Tracks in SF

Alemany Boulevard

Division Street

Laguna Honda Boulevard
Two-way Cycle Track
Montreal, Quebec
Unexpected Turn Movements

Bi-directional paths/tracks can create unexpected movements at intersections and driveways.

Consider using single direction paths where there are many driveways and intersections.
The desired width for a cycle track should be 5 feet. In areas with high bicyclist volumes or uphill sections, the desired width should be 7 feet to allow for bicyclists passing each other.

Colored pavement may be used to further define the bicycle space.
Potential for Blockages and Reduced Room for Passing

Rolled curbs aid passing/leaving path

Minimum 6.5’ (~2.0m) width to allow for side by side riding and passing
Maintenance: Sweeping and Snow

- Make path wide enough for street sweeper/plows
- Buy smaller street sweepers/plows
Conflicts with Pedestrians

Appropriate widths, good separation

Ped demand very high, need for better lane placement and separation
Two-Way Cycle Track
The desirable two-way cycle track width is 12 feet. Minimum width in constrained locations is 8 feet.

A dashed yellow line should be used to separate two-way bicycle traffic and to help distinguish the cycle track from any adjacent pedestrian area.

12 Feet desired minimum.

Two-stage turn boxes should be provided to assist in making turns from the cycle track facility.
Cross Section Design

Bike Lane on 50' Wide Street
No Parking on Both Sides

Note: Measured curbface to curbface

Bike Lane Stripe
Thermoplastic pavement marking line 8" [200mm] wide solid white

No Parking Stripe
Pre-formed Inlay Tape marking line 4" [100mm] wide solid yellow
One-way Cycle Track
50' Wide Two-way Street (No Parking Both Sides)

Bike | Barrier | Travel | Turn | Travel | Barrier | Bike

7'   | 3'      | 10'    | 10'  | 10'    | 3'      | 7'
Road Diets

Excess capacity removed, extra space reallocated for other purposes:
- Bike Lanes
- Wider Sidewalks
- Median (raised/planted or street level/painted)

FHWA diagram
Rules of Thumb

Two cut-offs for classic 4-to-3 road diet:
1) ~20,000 vehicles per day
2) ~1000 vehicles per hour per direction

Also, peak hour volume is approx 10% of ADT
ie. if pk hr = 800 vph, ADT ~8000 vpd
Designing for Peak Motor Vehicle Flow

Level of Service “F”

Unused Capacity

Unused Capacity

# of vehicles per hour

Peak Period

18:00

20:00

22:00

vehicles per hour

0:00

2:00

4:00

6:00

8:00

10:00

12:00

14:00

16:00

18:00
Turn Conflicts/Intersections

- Bring cyclists down to roadway level
- Improve sightlines
- Signalize
- Slow turning drivers
- Add high visibility markings
Transition to Bike Lane
Transition to Bike Lane with Bike Box
Merging Area
Cycle Track Intersection Approach—Merging Area
New York City
Left Turns from Cycle Tracks
Driveway Crossing Treatments
Prevent Poor Design
Education & Outreach
Other Treatments/Measures: Shared Lane Markings (sharrows)
Contraflow Bike Lanes
Scott Street Bike Box and Left Turn Lane
Colored Bicycle Facilities

- Higher Visibility
- Marketing/Branding
- However, cost is 5x to 10x cost of regular bike lane/marking
Valencia Green Wave

- Signals timing set to 13 mph progression at 11 intersections
- One of SF’s highest-use bicycle corridors (700 cyclists during 1.5 hour count – up from 220)
- Parallel corridors ideal for transit (Mission) and automobile traffic (Guerrero)
- SF’s complex grid and topography limit where green waves can be implemented
Pavement to Parks - “Parklets”

Car parking spaces converted to ped/bike uses

Good for business!
On-Street Bike Parking/Corrals

1 car space = 10 to 12 bike spaces
Doororing Treatments and Intersection Designs
Lower Speed Limits and Prevailing Speeds

Bike Routes, Home Zones, School Zones, Neighborhood Arterials

Recently done or underway:
- Masonic Avenue
- Folsom Street
- Howard Street
- King Street
- The Embarcadero
- John Muir Drive
- Broadway Tunnel
Automatic Bike Counters
Changes in Mode Share in SF

Source: US Census American Community Survey