DESIGNING IN CONTEXT OF COMPLETE STREETS

BICYCLE FACILITIES

MODULE 4
**BICYCLE FACILITIES**

FHWA Memorandum – August 20, 2013
“Bicycle and Pedestrian Facility Design Flexibility”

Support for taking a flexible approach

Guide for the Development of Bicycle Facilities (AASHTO)
Designing Urban Walkable Thoroughfares (ITE)
Urban Bikeway Design Guide (NACTO)

New 2015
Separated Bike Lanes Planning & Design Guides (FHWA)

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm
REFERENCES

- FHWA Separated Bike Lane Planning and Design Guide, 2015
- MassDOT, 2015 – Frequently referenced
The vast majority of NACTO Guide is either allowed or not precluded but non-compliant TCD’s may be piloted through the MUTCD experiment process.

Some treatments are compliant, some are experimental, some are actually currently prohibited by FHWA. Guide doesn’t distinguish which is which.

CHECK the MUTCD Website
- Wide lanes
- Shared lanes
- Shoulders
- Bike lanes
- Separated bike lanes
- Shared use paths

Wide lane: 14’ provides minimum width for a car to pass a cyclist without encroaching into the adjacent lane.
SHARED LANES

- Good design features
  - Pavement quality
  - Sight distance
  - Lower speed & volume
  - Bicycle compatible grates, railings, tracks, & expansion joints

- Supplemental features
  - Pavement markings or “sharrows”
  - Detectors & signal timing
SHARED LANES
Shared Lane Marking

- 35 mph or less
- 4’ min from curb
- 11’ min from curb with on-street parking

*(Guidance changing to 12’ from curb)*
SHARED LANE MARKINGS

- Minimum longitudinal spacing of 50’
- May place in center of a narrow travel lane
- Use of green color (currently experimental)
- Use of SLM in turn lane (current compliant use with EXCEPT BIKES plaque)
- Provide SLM on receiving (far) side of intersection
PAVED SHOULDERS

- Useful for higher traffic volume and/or speed
- Frequently used for rural
- Not a travel lane – intersection conflicts
- Uphill direction when constrained

Photo by SCI
BIKE LANES

- Preferred in urban/suburban
- Rural for high demand for bicycle travel
- Preferential space for bicyclists delineated
- Priority for uphill
Bike Lane next to Back-in Angled Parking
BIKE LANES

Used to separate bicycle lane from adjacent travel lane and/or parking lane.

Crosshatch pattern should be consistent with Section 3B.24
BIKE LANES

Bike Lane buffered from Parallel Parking
BIKE LANES

Bike Lane buffered from Parallel Parking

Chicago, IL
The longitudinal marking on the bike lane side of the buffer shall be broken to denote crossing is permitted. Consistent with Section 3D

Buffer width >4’ should have cross hatch markings (chevrons next to travel lane, diagonals next to parking. Consistent with Section 3B.24)
BIKE LANES

Bike Lane right of the Bus Stop
CONTRAFLOW BIKE LANES

Allows lawful use by bicyclists to travel in opposite direction on 1-way roadways
EXCEPT BIKES PLAQUE – CONTRAFLOW LANE
Note in both of these photos the green markings are not correct. The green markings should not be solid through the intersection but rather match the white dashed markings. Similar to the dashed portion on the next slide.

Binney St Cambridge, MA

Northampton, Mass
BIKE LANE EXTENSIONS
EXCEPT BIKES WARNING PLAQUE

- Used beneath warning signs where it is desired to alert bicyclists that the specific condition depicted on the warning sign is not applicable to them.
- All text version is compliant with current MUTCD
BIKE LANE WARNING SIGNS - TRANSITIONS

- Warning signs for bike lane endings and subsequent bike merge.
- Similar to standard roadway lane drop warning signs.
- Applicable distance or “AHEAD” plaques may be added.
Typical left turn movements by cyclists through an intersection

2-Stage Turn Box formalizes left turn movement currently allowed by traffic laws
2-STAGE TURN BOXES

- Waiting area for bicyclists to queue for left turn.
- Location of box should be out of line of cross street traffic.
- Right-on-red prohibition recommended.
- Can be used through Request to Experiment (RTE)
TWO STAGE TURN BOX

Binney Street, Cambridge, MA
Cycle Track
separated from
Motorized Vehicles

Chicago, IL
CYCLE TRACK – SEPARATED BIKE LANE

Parking restrictions not required on downstream side of driveway for vehicles turning onto one-way streets.
CURRENT DESIGNS PROHIBITED – COMBO LANES

Confusing?

You bet it is!

Asheville, NC
CORRECT – KEYHOLE LANE
CURRENT DESIGNS PROHIBITED – INAPPROPRIATE USE OF SLM’S

New York City

- SLM in a bike box
CURRENT DESIGNS PROHIBITED-
INAPPROPRIATE USE OF SLM’S

Brookline, Mass

- With longitudinal markings ("priority bike lanes")
CURRENT DESIGNS PROHIBITED-INAPPROPRIATE USE OF SLM’S

Excessive wear of dashed lines
Part 6 Typical Applications for Guidance and Support to provide bikeway continuity through or around a Temporary Traffic Control (TTC) zone.

Bike lane closure with diversion into traffic lane
TEMPORARY TRAFFIC CONTROL FOR BIKE

Bike lane closure with on-road detour

Path closure with diversion
BIKE/PED DETOUR CONSIDERATIONS – IMPORTANT

Henderson Bridge Repair Providence, RI
FHWA sponsored source for reports, data, case studies:
www.pedbikeinfo.com
www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane

Information on status of new bike designs:
www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm

Information on MUTCD, links to state supplements and Interim Approvals:
www.fhwa.mutcd.org

Information on the NCUTCD:
www.ncutcd.org