

The Manual on Uniform Traffic Control Devices

What's next for bicyclists?

Richard C. Moeur, PE

Arizona Department of Transportation

National Committee on Uniform Traffic Control Devices



The MUTCD

- **Manual on Uniform Traffic Control Devices**
- **National standard for all traffic control in the United States**
- **Defines standards & guidelines for:**
 - **Signs**
 - **Markings**
 - **Traffic signals**
 - **Work zones & other temporary controls**
 - **Railroad crossings**

Manual on **Uniform** Traffic Control Devices

- **Ensures similar situations are treated in similar manner for all road users**
 - Improves traffic flow
 - Improves safety
 - No "surprises"!
- **MUTCD defines uniformity of**
 - Color
 - Shape
 - Legend
 - Placement



The MUTCD

- **10 parts**
 - **1 - General**
 - **2 - Signs**
 - **3 - Markings**
 - **4 - Traffic Signals**
 - **5 - Low Volume Roads**
 - **6 - Temporary Traffic Control**
 - **7 - School Areas**
 - **8 - Railroad Crossings**
 - **9 - Bicycle Facilities**
 - **10 - Light Rail**

NCUTCD

- **National Committee on Uniform Traffic Control Devices**
- **Provides expert input to FHWA on MUTCD**
- **Over 200 technical members from across US**
- **LAB is voting member**
- **Bicycle Technical Committee focuses on issues affecting bicyclists**

Submitted by NCUTCD to FHWA for next MUTCD

- **Improved bicycle guide signing:**
 - **Travel mode signs for shared-use paths**
 - **New bicycle guide & wayfinding signs**
 - **Numbered route signs with local agency symbol / logo**
 - **Improved system of route auxiliaries**
 - **Revised name/design for US Bike Rte sign**
 - **Mileposting for paths**

Submitted by NCUTCD to FHWA for next MUTCD

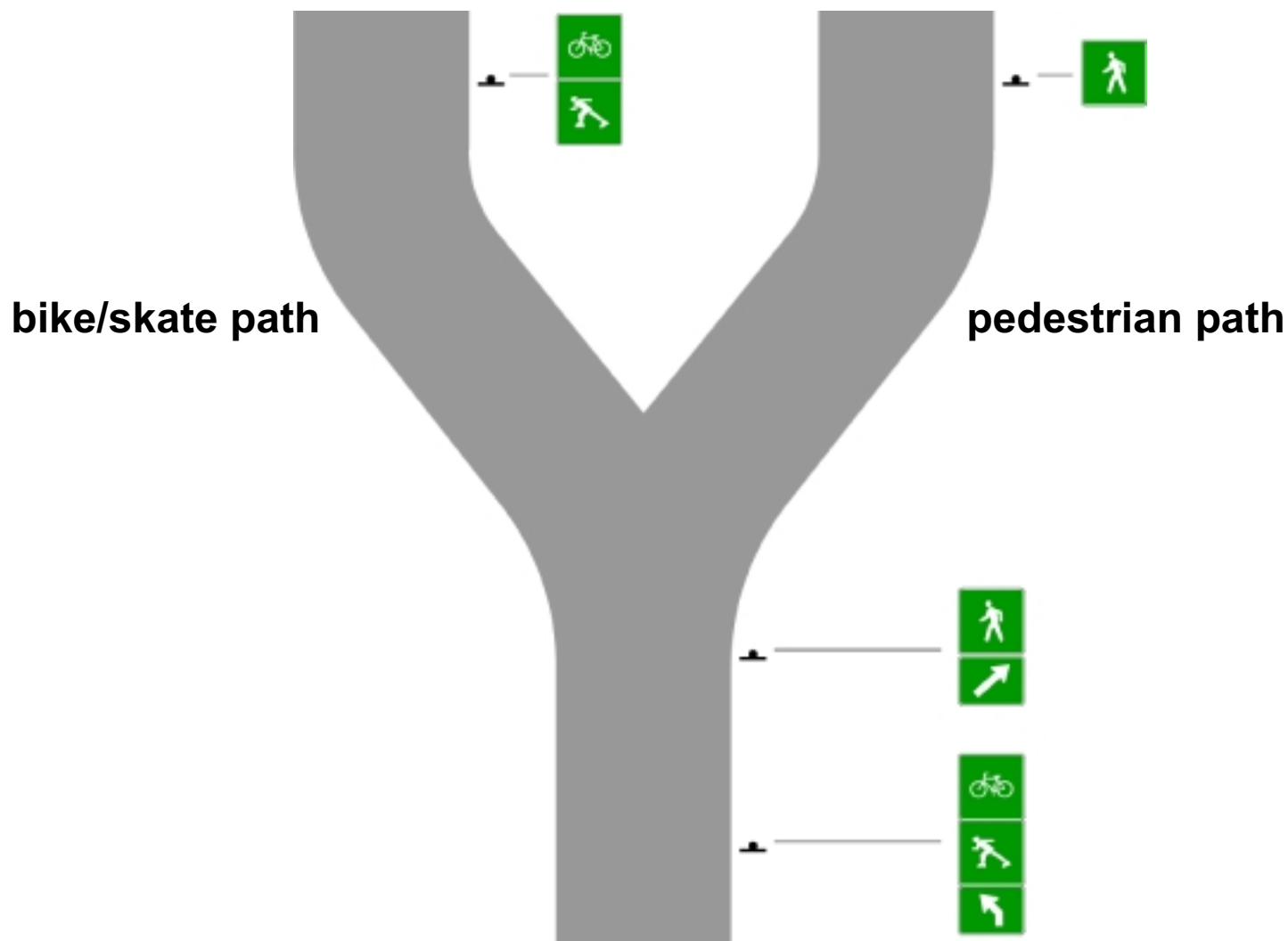
- **Other improvements:**
 - **Bike Lane sign - recommended but not mandatory**
 - **Pedestrian walking speed**
 - **Other minor "clean-ups"**

Mode Signs for Paths

- Addresses different modes on paths
- New prohibition signs for skaters, equestrians

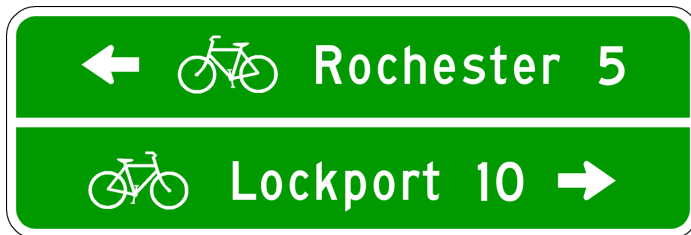


Mode Signs for Paths



Bicycle Guide & Wayfinding Signing

- **System of bicycle-specific direction / distance signing**
 - **Big improvement from old "BIKE ROUTE"**
 - **Based on systems in other countries, but "Americanized"**



New M1-8a

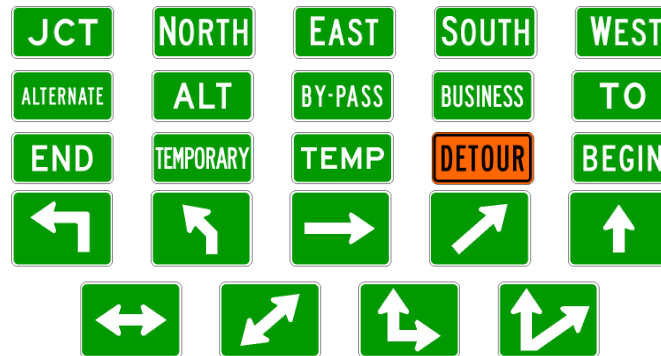
- **Optional numbered bicycle route marker including local agency symbol or logo**



Route Marker Auxiliaries

- Improve signing consistency
- Complete revamp of auxiliaries for bikes
- Replace old M4/M7 plaques with bike-size versions of signs used on other road facilities
- Includes all relevant auxiliaries

- Directions
- Route type
- Arrows



Revised M1-9

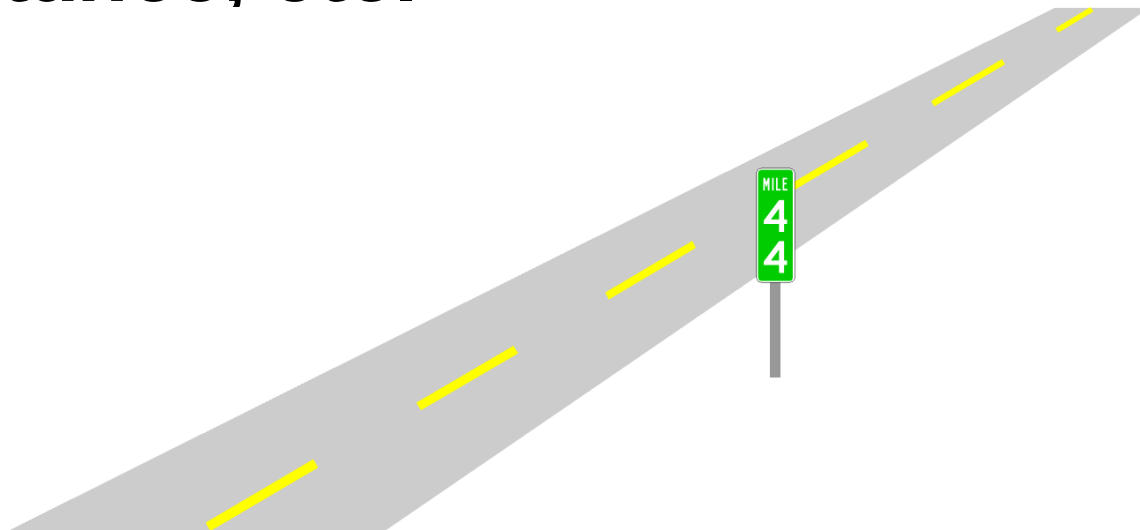
- **Changed design to emphasize bicycle symbol**
- **Changed name to better reflect application**



New name: US Numbered Bicycle Route Sign

Reference Markers (Mileposts) for Paths

- **Similar to standard milepost markers, but scaled appropriately**
- **Provides reference points for incidents, maintenance, travel distance, etc.**



Bike Lane Signing

- **2003 MUTCD requires bike lane signs to be installed along all marked bike lanes**
- **Some agencies wanted more flexibility**
- **Some states don't use bike lane signs**
- **Wording change so that use of bike lane signs is *recommended*, but not always *mandatory***

"Bicycle Trail" vs "Bikeway"

- **Wording in 2003 MUTCD refers to it being applicable to all "bicycle trails"**
- **MUTCD standards & guidelines are not appropriate for unpaved, unimproved trails**
- **Recommended that MUTCD apply to "bikeways" instead of "bicycle trails"**

Pedestrian Walking Speed

- **4 ft/s pedestrian walking speed used for signal clearance timing in MUTCD for decades**
- **50% of pedestrians are slower than 4 ft/s**
- **Study: 85% of pedestrians walk at 3 1/2 ft/s or faster**
- **Recommendations:**
 - **3 1/2 ft/s maximum walking speed**
 - **3 ft/s suggested when appropriate**
- **May require retiming of many signals**

W5-4a

- **Current sign: "BIKEWAY NARROWS"**
- **"Bikeway" not well understood by users**
- **Sign changed to: "PATH NARROWS"**



Pending Issues

(not yet endorsed by NCUTCD)

- **Going beyond "Share The Road":**
 - **Shared Roadway Marking**
 - **Bicycle Lane Use Regulatory Signs**

Beyond "Share the Road"

- **Current Share The Road sign assembly established in MUTCD in 1997**



- **Concerns with current sign design:**
 - **Ambiguous message**
 - **Misunderstood by some road users**
 - **Who defines "sharing?"**

Shared Roadway Marking

- Originally developed in Denver, CO
- Studied in Florida & elsewhere
- New design based on study in San Francisco, CA
- San Francisco study indicated markings were effective in improving road user behavior



Shared Roadway Marking

- **Proposal developed by BTC in 2004**
 - **Based on California MUTCD Supplement**
- **Sent to NCUTCD reviewers spring 2005**
 - **Mostly positive responses**
 - **Some respondents didn't seem to fully understand application / use of marking**
- **Presented to NCUTCD Council June 2005**
 - **Vote 19-11-3**
 - **Simple majority, but not required 2/3**
 - **NO NCUTCD endorsement (yet...?)**

Shared Roadway Marking

- Regardless of NCUTCD action, still under study by FHWA
- Currently regarded by FHWA as **EXPERIMENTAL**
 - following the MUTCD experimental process is strongly recommended
- More experiments could definitely help
- Please don't use the old Denver arrow!



Bicycle Lane Use Regulatory Sign

- **UVC states that bicyclists may "take the lane" if too narrow for safe overtaking**
- **Many road users don't understand this...**
- **BTC proposed a new standard sign for these situations**
 - **Similar to**
 - **SLOWER TRAFFIC
KEEP RIGHT**
 - **PASS WITH CARE**



Bicycle Lane Use Regulatory Sign

- **Still under study by NCUTCD**
 - (No vote yet)
- **Sign can be used by agencies now if local law supports**
 - **It's already MUTCD-compliant**



MUTCD Update Process

- **Experimentation**
 - **Process described in Section 1A.10 of MUTCD**
 - **FHWA approval required for:**
 - **New symbols or combination of symbols**
 - **New colors or application of colors**
 - **Non-compliant devices**
 - **Advantages of FHWA involvement:**
 - **Protection from liability**
 - **More likely for FHWA to accept results**
 - **Expert review / oversight**

MUTCD Update Process

- **Rulemaking**
 - **Proposed changes published in Federal Register**
 - **3-6 month public comment period**
 - **FHWA collects comments**
 - **12-18 months to review & analyze**
 - **Final Rule published in Federal Register**
- **Adoption**
 - **States have 2 years to adopt**
 - **Adopt Federal manual**
 - **State supplement (minor modifications)**
 - **State manual (must be in “substantial conformance”)**

Potential BTC Projects (Long-Term)

- **Improved guidance on design of bike lanes at intersections**
- **Improved traffic control at path-roadway intersections**
- **Signs and markings for rumble strips**
- **Colored bike lanes**
- **Bicycle traffic signals**
- **Advance stop lines**

For More Info...

- **FHWA's MUTCD Website**
 - <http://mutcd.fhwa.dot.gov/>
- **NCUTCD Bicycle Technical Committee**
 - <http://members.cox.net/ncutcdbtc/>