



TRANSPORTATION

Proposed Rule Adoption

Bike Temporary Traffic Control Details

Darren Ujano, P.E., Supervising Engineer | Nov. 15, 2022

Summary of Changes

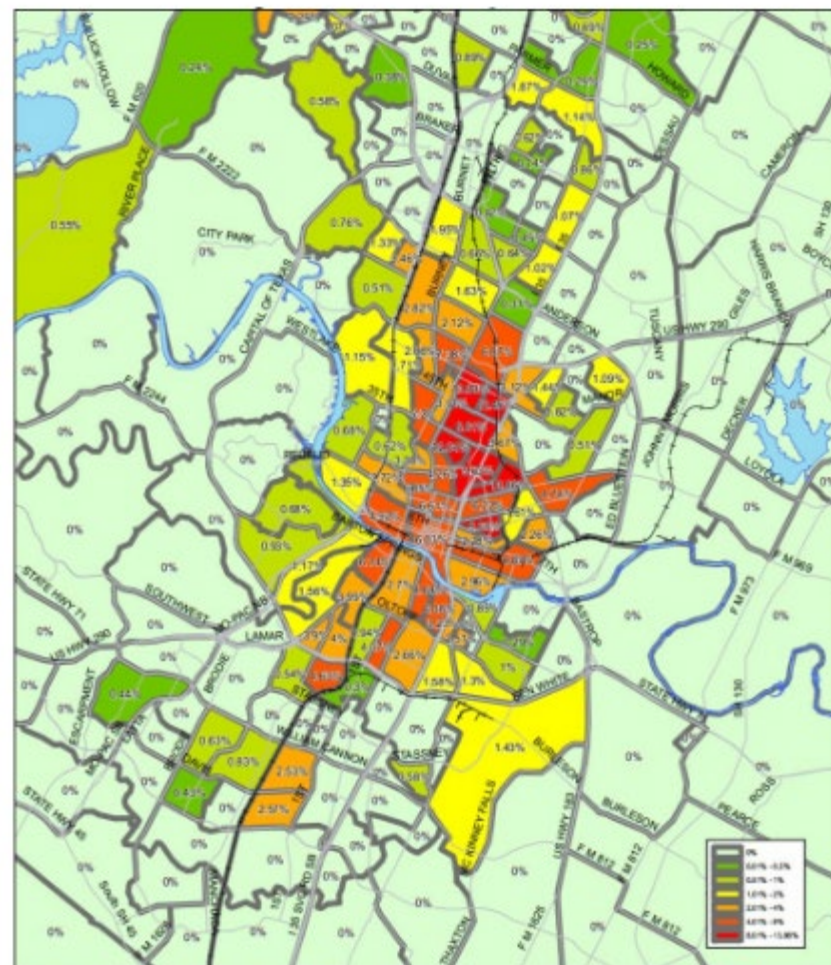
- Brief History of Bike Temporary Traffic Control Details
- Imagine you're the cyclist...
- Summary of Key Changes for New Bike Traffic Control Details
- Go over Details in Detail
- Question



Brief History of Bike Temporary Traffic Control Details

- In 2009, Austin Bicycle Master Plan was incorporated with 2014 updates:
 - *“Austin is a place where people of all ages and abilities bicycle comfortably and safely for transportation, fitness and enjoyment...”*
- 2016 Mobility Bond supported additional infrastructure for bike facilities
- 2016 The Austin Transportation Dept. developed and sealed **Bike Temporary Traffic Control Details** (however, these details were never adopted in the Rules Posting Process)

CITY OF AUSTIN BICYCLE MODE SHARE TO WORK FROM 2011. EXISTING BICYCLING IS CONCENTRATED CENTRAL AUSTIN WHERE THERE IS A HIGH PORTION OF SHORT TRIPS AND MIX OF USES.



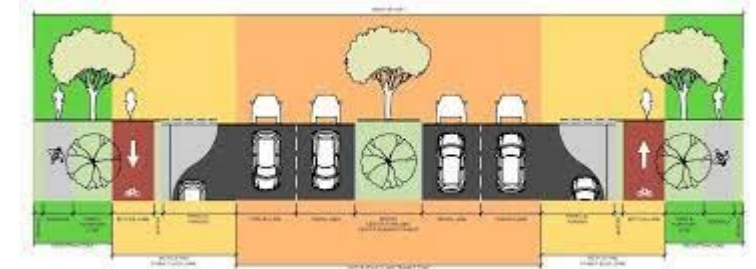
Brief History of Bike Temporary Traffic Control Details

- In 2019, City Council adopted the Austin Strategic Mobility Plan (ASMP)
 - “Austin faces growing demands on our existing transportation network resulting in increased traffic congestion and travel delays”
- Multimodal uses of transportation (construction of bike lanes, urban trails etc.) to achieve 50/50
- Introduces a unique challenge in all cities and states regarding cyclist accommodations
- By 2021, Austin’s overall bicycle network grew to **215 miles**



Brief History of Bike Temporary Traffic Control Details

- In 2022, the newly adopted Transportation Criteria Manual outlined specific guidelines and requirements for Bicyclist Accommodations under Section 8 – Temporary Traffic Control
- Primary highlights are below:
 - Prioritization of cyclist accommodations around work zones
 - Shared Roadway Conditions
 - Merging in the same direction
 - Low-volume roadways with ADT less than 5,000 ADT
 - Posted speed limit of 30 MPH or less
 - Impacted facility is not on the City All Ages and Ability Network (AAA)
 - Engineering Judgement (Length of Work Zone, Grade, Surface Conditions, etc.)

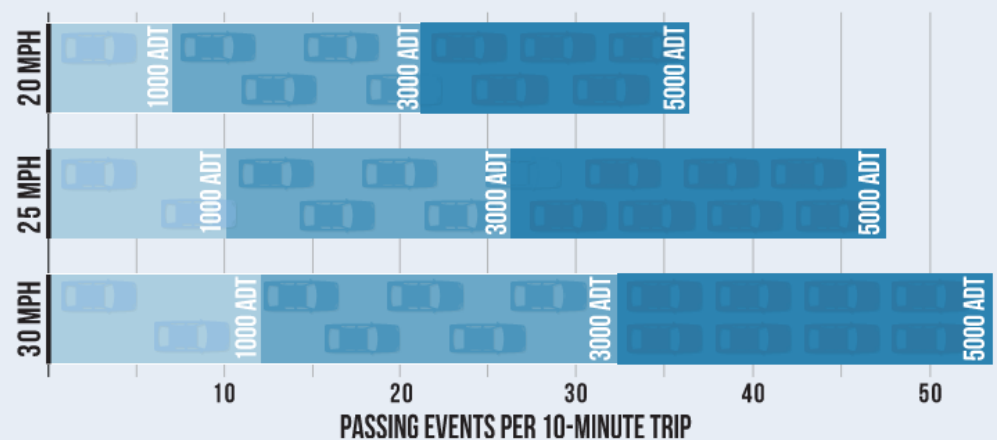


Imagine you're the cyclist and see a work zone

- Would you want to merge with traffic on Lamar or Airport?
 - Lamar has ~29,000 Average Daily Traffic (ATD)
 - Airport has ~20,000 Average Daily Traffic (ATD)
- Hence adoption of roadways with **5,000 ADT or less**
- This can typically fit under ASMP Streets that are Level 1
- ASMP Streets that are **3 and higher are prohibited**
- ASMP Street Level 2 will require research

Conflicts Increase with Speed & Volume

This chart illustrates the number of passing events (at increasing motor vehicle average speed and volume) experienced over a 10-minute period by a bicyclist riding 10 mph. As motor vehicle speed and volume increase, they magnify the frequency of stressful events for people bicycling.



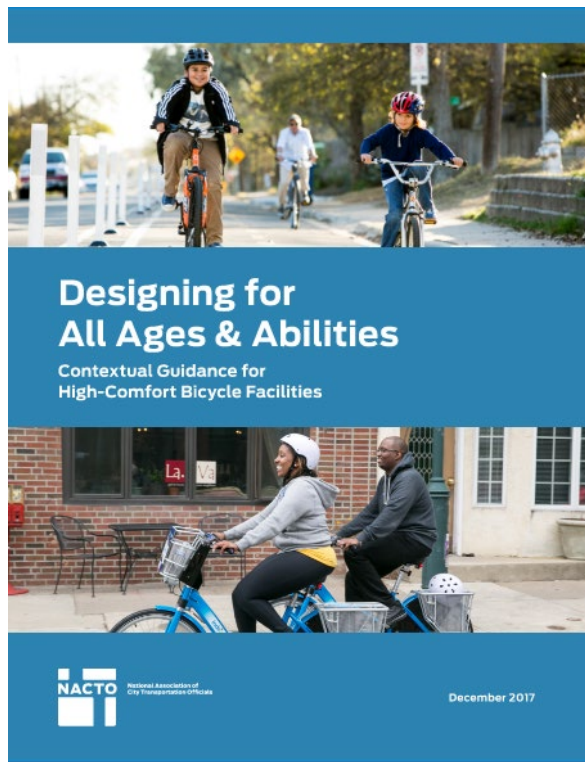
Imagine you're the cyclist and see a work zone

- Would you want to merge on roads that are higher than 30 MPH?
 - Slaughter has speeds up to 45 MPH
- Supported by NACTO and published guidelines from DOTs
 - Higher speeds increase risk of collision
 - Higher speeds increase frequency of vehicles
 - High Cyclist Stress Levels
 - Higher Risk of serious injury
- Cyclist merging can be considered if **less than 30 MPH**



Imagine you're the cyclist and see a work zone

- Would you want to merge into a “shared roadway” with your kids, elderly, etc.?
- Require a dedicated path for All Ages and Ability



Who is the “All Ages & Abilities” User?

To achieve growth in bicycling, bikeway design needs to meet the needs of a broader set of potential bicyclists. Many existing bicycle facility designs exclude most people who might otherwise ride, traditionally favoring very confident riders, who tend to be adult men. When selecting a bikeway design strategy, identify potential design users in keeping with both network goals and the potential to broaden the bicycling user base of a specific street.

Children

School-age children are an essential cycling demographic but face unique risks because they are smaller and thus less visible from the driver's seat than adults, and often have less ability to detect risks or negotiate conflicts.

Seniors

People aged 65 and over are the fastest growing population group in the US, and the only group with a growing number of car-free households.¹⁰ Seniors can make more trips and have increased mobility if safe riding networks are available. Bikeways need to serve people with lower visual acuity and slower riding speeds.

Women

Women are consistently under-represented as a share of total bicyclists, but the share of women riding increases in correlation to better riding facilities.¹¹ Concerns about personal safety including and beyond traffic stress are often relevant. Safety in numbers has additional significance for female bicyclists.

People Riding Bike Share

Bike share systems have greatly expanded the number and diversity of urban bicycle trips, with over 28 million US trips in 2016.¹² Riders often use bike share to link to other transit, or make spontaneous or one-way trips, placing a premium on comfortable and easy-to-understand bike infrastructure. Bike share users range widely in stress tolerance, but overwhelmingly prefer to ride in high-quality bikeways. All Ages & Abilities networks are essential to bike share system viability.

People of Color

While Black and Latinx bicyclists make up a rapidly growing segment of the riding population, a recent study found that fewer than 20% of adult Black and Latinx bicyclists and non-bicyclists feel comfortable in conventional bicycle lanes, fear of exposure to theft or assault or being a target for enforcement were cited as barriers to bicycling.¹³ Long-standing disinvestment in street infrastructure means that these riders are disproportionately likely to be killed by a car than their white counterparts.¹⁴

Low-Income Riders

Low-income bicyclists make up half of all Census-reported commuter bicyclists, relying extensively on bicycles for basic transportation needs like getting to work.¹⁵ In addition, basic infrastructure is often deficient in low-income neighborhoods, exacerbating safety concerns. An All Ages & Abilities bikeway is often needed to bring safe conditions to the major streets these bicyclists already use on a daily basis.

People with Disabilities

People with disabilities may use adaptive bicycles including tri-cycles and recumbent handicycles, which often operate at lower speeds, are lower to the ground, or have a wider envelope than other bicycles. High-comfort bicycling conditions provide mobility, health, and independence, often with a higher standard for bike infrastructure needed.

People Moving Goods or Cargo

Bicycles and tricycles outfitted to carry multiple passengers or cargo, or bicycles pulling trailers, increase the types of trips that can be made by bike, and are not well accommodated by bicycle facilities designed to minimal standards.

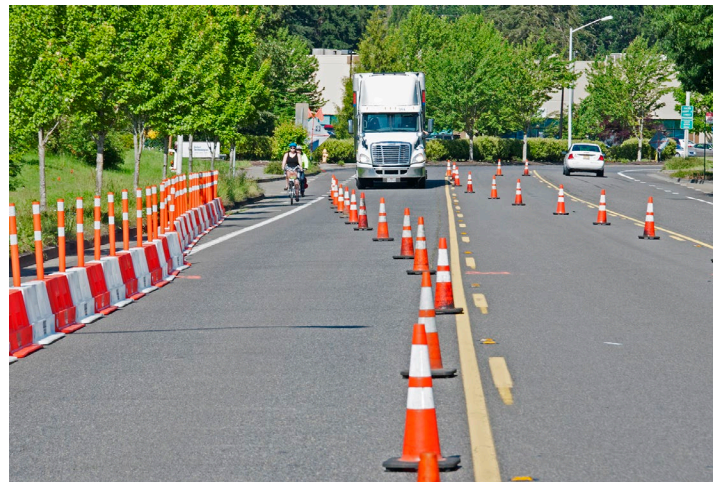
Confident Cyclists

The small percentage of the bicycling population who are very experienced and comfortable riding in mixed motor vehicle traffic conditions are also accommodated by, and often prefer, All Ages & Abilities facilities, though they may still choose to ride in mixed traffic.

Contextual Guidance for Selecting All Ages & Abilities Bikeways				
Target Motor Vehicle Speed ¹	Roadway Context			All Ages & Abilities Bicycle Facility
	Target Max. Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Key Operational Considerations	
Any		Any	Any of the following: high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts ¹	Protected Bicycle Lane
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	Shared Street
≤ 20 mph	≤ 1,000 – 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	Bicycle Boulevard
≤ 25 mph	≤ 500 – 1,500		Low curbside activity, or low congestion pressure	Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane
	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way		Buffered or Protected Bicycle Lane
	≤ 3,000 – 6,000			Protected Bicycle Lane
Greater than 26 mph ¹	Greater than 6,000	Multiple lanes per direction	Low curbside activity, or low congestion pressure	Protected Bicycle Lane, or Reduce Speed
	Any	Single lane each direction		Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed
	≤ 6,000	Multiple lanes per direction		Protected Bicycle Lane, or Bicycle Path
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts	Greater than 6,000	Any	Any	Bike Path with Separate Walkway or Protected Bicycle Lane
		Any	High pedestrian volume Low pedestrian volume	Shared-Use Path or Protected Bicycle Lane

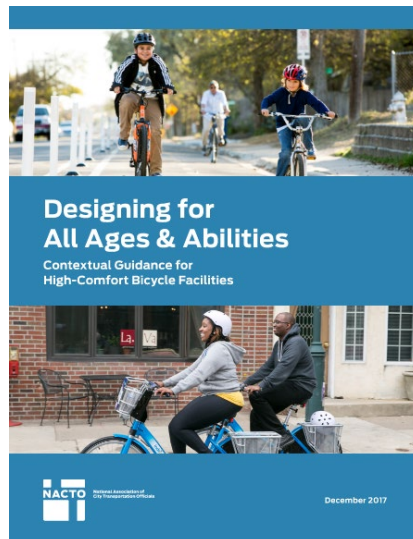
Imagine you're the cyclist and see a work zone

- Would you want to “share the road” with work zone lengths that are unreasonably long?
- Would you want to “share the road” where the grade is too steep? (i.e. Spicewood Springs)
- Would you want to “share the road” where the surface is not acceptable/safe?
- **Engineering Judgement is required**



Summary of Key Changes

- Low-volume roadways with ADT less than 5,000 ADT
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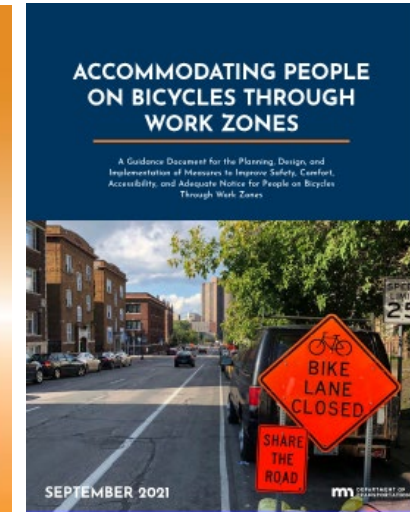
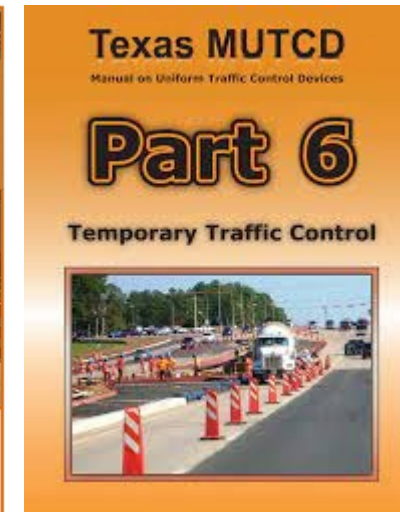
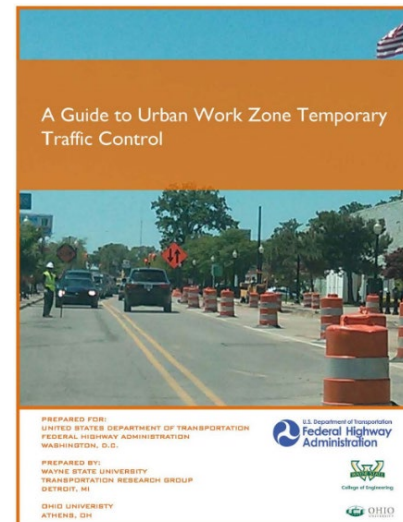


Roadway Design Manual



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GOING OVER DETAILS IN DETAIL



TRANSPORTATION

QUESTIONS



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