BEST PRACTICES REVIEW OF COA PROCEDURES FOR APPLYING MUTCD WARRANTS AND INSTALLING SPEED ZONES

Center for Transportation Research,
University of Texas at Austin

Late Backup

CTR, The University of Texas

- Largest University Contained Transportation Research Agency in the Southwest
- Forty-four year history of transportation research and service
- Located in Austin but faculty/researchers work
  - Nationally
  - Internationally
- Sponsors include TxDOT, US DOT, EPA, DHS, DOD, World Bank, others

Survey of Procedures and Practices

- **To ensure Austin is using the best available procedures, Public Works engaged the Center for Transportation Research at UT-Austin to review COA practices for:**
  - **Determining when we install**
    - Traffic signals
    - All-way stop signs
  - **Establishing speed zones**

Cities Surveyed

- Austin,TX
- San Antonio, TX
- Dallas, TX
- Houston, TX
- Cambridge, MA
- San Jose, CA
- Portland, OR
- Denver, CO
- Seattle, WA

MUTCD History

- **1935** — **First MUTCD published**
- **Frequently updated**
- **Today** — **On-line document, facilitates updating and access**

MUTCD Purpose

- Simplify transportation system **user tasks (Driver, Pedestrian, and Bicyclist)** through Uniformity of Control Devices:
  - Meaning
  - Appearance
  - Application

Texas Legal Considerations

- Two areas of Texas Law deal with MUTCD

- **1. Texas Transportation Code:**
- **TTC § 544.001 – The Texas Transportation Commission must adopt a standards manual** for traffic control devices that conforms to the system approved by the American Association of State Highway and Transportation Officials (AASHTO), which, at this time, is the National MUTCD.
- **TTC § 544.002 – TxDOT and local jurisdictions with the appropriate authority may** place traffic control devices on public roadways if and only if those devices comply with the standards manual adopted by the Texas Transportation Commission.

Texas Legal Considerations (continued)

2. Texas Administrative Code
TAC, Title 43, Part 1, Chapter 25, Subchapter A, Rule §25.1 – Specifies that TxDOT has adopted the 2006 Texas MUTCD as the manual required in TTC § 544.001. *The manual should not preclude the use of sound engineering judgment.*

Austin Legal Requirements for MUTCD

The City of Austin's Code follows the Texas Transportation Code's requirement that local municipalities must adhere to the guidelines and requirements set out in the Texas MUTCD:

§12-1-14 Traffic-Control Devices – City traffic engineers shall install and maintain traffic-control devices in accordance with the Texas Department of Transportation publication "Texas Manual on Uniform Traffic-Control Devices for Streets and Highways," 1980 edition, as amended.

MUTCD Signal Warrant Application

1. All municipalities interviewed used the traffic signal warrants in the National MUTCD.
2. None of the interviewed cities ever installs a signal without checking the warrants.
3. None of the contacted municipalities regularly installs unwarranted signals.

Non-Standard Signal Warrant Applications

City	Unwarranted Installations Per year
Dallas	None during last 20 years
Portland	None during last 10 years
Houston	None during last 10 years
San Antonio	Approximately 1 per year

All-Way Stop Procedures

All surveyed cities use the MUTCD, however

Several have additional procedural guidelines

Non-Standard
All-Way Stop Applications

City	Unwarranted Installations Per year
Austin	None
Portland	None
Cambridge	None
San Antonio	Approximately 2-4 per year
Dallas	Approximately 3-5 per year
San Jose, CA	Not more than 10 per year
Houston	Approximately 4 per year

Dallas All-Way Stop Program

- **If an MUTCD based engineering study does not justify All-Way Stop installation, then the following five program criteria are considered to potentially justify stop installation:**
  - ***the intersecting streets are* residential**
  - **2/3rds of residents within 900' radius sign petition of support.**
  - ***street for which stop control is* requested**
    - **is not designated on the Thoroughfare Plan;**
    - **is not a Fire Department emergency response route; and,**
    - **has a traffic volume of less than 6000 vehicles per day.**

    If AFD/EMS oppose may appeal to the UTC.

Speed Zoning

The United States Department of Transportation (USDOT) provides guidance through research to states and local governments for setting speed limits.

Research indicates arbitrary choice of posted speed limits have minimal impact on driver speed choice or accident rates.

For example see: M. R. Parker, Jr., Effects of Raising and Lowering Speed Limits on Selected Roadway Sections, Report No. FHWA-RD-92-084, Federal Highway Administration, Washington, DC, January 1997.

Speed Zoning (continued)

Legal considerations:

The Texas Administrative Code (43 TAC §25.21) requires that:
"Speed limits on all roadways should be set based on spot speed studies and the 85th percentile operating speed. . ."

City Speed Zoning Procedure Summary

Use 85th-percentile speed in setting speed limits?

Austin	Yes
San Antonio	Yes
Dallas	Yes
Houston	Yes
Cambridge	Yes
San Jose	Yes
Seattle	Yes
Portland	Yes
Denver	Yes

Conclusion

- Applications of the MUTCD for all-way stops and signals, and the 85th-percentile speed for speed zones are procedures well supported by engineering history and experience.
- By adhering to these guidelines, municipalities are setting standards that have been shown to comply with driver expectations, one of the hallmark principles of good traffic engineering.
- We commend the City of Austin for their current policies which comply with these recommendations.