

TEXAS TRANSPORTATION COMMISSION

ALL Counties

MINUTE ORDER

Page 1 of 1

ALL Districts

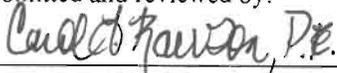
The Texas Transportation Commission (commission) finds it necessary to adopt amendments to §25.23 relating to speed zone studies to be codified under Title 43, Texas Administrative Code, Part 1.

The preamble and the adopted amendments, attached to this minute order as Exhibits A and B, are incorporated by reference as though set forth verbatim in this minute order, except that they are subject to technical corrections and revisions, approved by the General Counsel, necessary for compliance with state or federal law or for acceptance by the Secretary of State for filing and publication in the *Texas Register*.

IT IS THEREFORE ORDERED by the commission that the amendments to §25.23 are adopted and are authorized for filing with the Office of the Secretary of State.

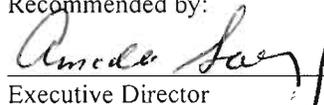
The executive director is directed to take the necessary steps to implement the actions as ordered in this minute order, pursuant to the requirements of the Administrative Procedure Act, Government Code, Chapter 2001.

Submitted and reviewed by:



Director, Traffic Operations Division

Recommended by:



Executive Director

**112228 APR 29 10**

Minute  
Number

Date  
Passed

1 Adoption Preamble

2 The Texas Department of Transportation (department) adopts  
3 amendments to §25.23, Speed Zone Studies. The amendments to  
4 §25.23 are adopted without changes to the proposed text as  
5 published in the March 12, 2010 issue of the *Texas Register* (35  
6 TexReg 2145) and will not be republished.

7

8 EXPLANATION OF ADOPTED AMENDMENTS

9 The rules for the procedures to establish speed limits are  
10 amended to require the posting of an interim speed limit for new  
11 or reconstructed highways. Current language allows for an  
12 interim speed limit but does not require that one be posted.  
13 New language is added to provide a new procedure to follow when  
14 establishing an interim speed limit.

15

16 Section 25.23(a)(1) is amended by clarifying that information  
17 for setting an interim speed limit is included under engineering  
18 and traffic investigations.

19

20 New §25.23(a)(2)(A) clearly states that an interim speed limit  
21 shall be determined and posted before the highway is opened to  
22 traffic. The current rule does not require an interim speed  
23 limit. This change is necessary to ensure that appropriate  
24 speed limits are posted at the time the road opens to traffic.

25

1 New §25.23(a)(2)(B) states that a traffic and engineering  
2 investigation must be conducted. Transportation Code,  
3 §§545.353 - 545.356 require that a traffic and engineering  
4 investigation be conducted prior to changing the speed limit  
5 from the prima facie speed set by Transportation Code, §545.352.  
6 To maintain compliance with the statute the section now makes it  
7 clear that a traffic and engineering study will be conducted to  
8 establish the interim speed limit.

9  
10 New §25.23(a)(2)(C) provides that the traffic and engineering  
11 study must include review of the prima facie speed, the design  
12 speed, and the results of a trial run speed study. This  
13 language clearly states the options that must be considered in  
14 the traffic and engineering investigation. Because the speed  
15 limit needs to be established prior to the stabilization of the  
16 traffic on the road other speed study options, such as reviewing  
17 the speed of those traveling on the road to determine the 85<sup>th</sup>  
18 percentile speed, are not viable options. This provision limits  
19 the required options to those that will allow the setting of an  
20 appropriate speed limit at the opening of the roadway.

21  
22 New §25.23(a)(2)(D) requires that the interim speed limit be  
23 approved by commission minute order or city ordinance if the  
24 traffic and engineering investigation indicates a speed limit  
25 that is less than the prima facie speed limit. This requirement

1 complies with statutory provisions and makes it clear that  
2 lowering the speed from the prima facie limit requires approval  
3 from an entity authorized to establish a speed limit.

4

5 New §25.23(a)(2)(E) provides that advisory speed signs may be  
6 used in conjunction with the interim speed limit if applicable.  
7 Advisory speed signs alert drivers to hazards or conditions in  
8 the roadway that may require reduced speeds. These types of  
9 signs are authorized for any roadway under current 43 TAC §25.22  
10 and §25.25.

11

12 New §25.23(a)(2)(F) provides that once traffic has stabilized an  
13 85th percentile speed study must be conducted using the  
14 provisions of §25.23(b) to determine the appropriate speed limit  
15 for the roadway. This language provides guidance as to when the  
16 interim speed limit should be replaced. The traffic and  
17 engineering investigation used for the interim speed limit is  
18 not intended to provide for a permanent speed zone. This  
19 provision makes it clear that a second speed study using the  
20 85th percentile guidelines must be completed once the traffic on  
21 the new or reconstructed road has stabilized.

22

23 Section 25.23(b) is reorganized for clarity. The language from  
24 §25.23(b)(1) is moved to create new §25.23(b)(1)(A). The  
25 language from §25.23(b)(2)(C), regarding how many and which cars

1 to check in the speed study, is moved to create new  
2 §25.23(b)(1)(B), under the general concepts heading. This  
3 provision refers to all speed studies and not just those  
4 conducted for new and reconstructed highways, therefore it  
5 needed to be removed from under §25.23(b)(2). The language in  
6 §25.23(b)(2)(B) is deleted as the procedure is now included in  
7 §25.23(a). The guidance to check cars as quickly as possible is  
8 relevant to all speed checks conducted regardless of the type of  
9 road.

10

#### 11 COMMENTS

12 No comments on the proposed amendments were received.

13

#### 14 STATUTORY AUTHORITY

15 The amendments are adopted under Transportation Code, §201.101,  
16 which provides the Texas Transportation Commission with the  
17 authority to establish rules for the conduct of the work of the  
18 department.

19

#### 20 CROSS REFERENCE TO STATUTE

21 Transportation Code, §§545.353, 545.3531, 545.3535, 545.354,  
22 545.355, and 545.356.

1 SUBCHAPTER B. PROCEDURES FOR ESTABLISHING SPEED ZONES

2 §25.23. Speed Zone Studies.

3 (a) Overview.

4 (1) Engineering and traffic investigation. This section  
5 includes information concerning interim speed limits for a new  
6 or reconstructed highway and a description of how to conduct an  
7 engineering and traffic investigation as the basis for  
8 establishing a regulatory speed zone along a roadway. This  
9 investigation is commonly called a speed zone study.

10 (2) Interim speed limits for new or reconstructed  
11 highways.

12 (A) An interim speed limit for a new or reconstructed  
13 highway shall be determined and posted before the highway is  
14 opened to traffic.

15 (B) To set an interim speed limit, a traffic and  
16 engineering investigation will be conducted.

17 (C) The traffic and engineering investigation will  
18 include a review of:

19 (i) the statutory prima facie speed applicable to  
20 the highway;

21 (ii) the design speed applicable to the highway;

22 and

23 (iii) a trial run speed study for the highway.

1            (D) To set an interim speed limit at a speed that is  
2 less than the prima facie speed applicable to the highway, a  
3 commission minute order or a city ordinance setting the interim  
4 speed limit is required.

5            (E) Warning signs and advisory speed signs may be  
6 used on a highway with an interim speed limit to alert drivers  
7 to any hazards.

8            (F) When traffic speeds have stabilized on the  
9 highway, an 85th percentile speed study will be conducted under  
10 subsection (b) of this section. The interim speed limit will be  
11 used on the highway until the maximum speed for the highway is  
12 determined following the conclusion of that investigation.

13            (3) [~~+2~~] Scope of study.

14            (A) The speed zone study should cover the entire length  
15 of a potential zone, even though an analysis of the data may  
16 later indicate that the actual limits of the area that requires  
17 zoning are less than the limits of the potential zone.

18            (B) A speed zone study consists of the following  
19 principle areas:

20            (i) determining the 85th percentile speed;

21            (ii) crash study;

22            (iii) developing of strip maps;

23            (iv) speed zone design; and

1 (v) rechecks of speed zones.

2 (b) Determining the 85th percentile speed.

3 (1) General concepts. [~~The maximum speed limits posted~~  
4 ~~as the result of a study should be based primarily on the 85th~~  
5 ~~percentile speed, when adequate speed samples can be secured.~~]

6 (A) The maximum speed limits posted as the result of a  
7 study should be based primarily on the 85th percentile speed,  
8 when adequate speed samples can be secured.

9 (B) Speed checks should be made as quickly as possible,  
10 but it is not necessary to check the speed of every car. In  
11 many cases, traffic will be much too heavy for the observer to  
12 check all cars.

13 (2) Speed checks for new or reconstructed highways.

14 [~~(A)~~] Speed checks on new or reconstructed highway  
15 sections should not be performed until it is apparent that the  
16 traffic speeds have stabilized.

17 [~~(B)~~ ~~As an interim measure, the statewide maximum speed~~  
18 ~~or the design speed of the roadway may be posted on these~~  
19 ~~sections while utilizing warning signs with advisory speed signs~~  
20 ~~to alert drivers to any hazards. In any case, trial run data~~  
21 ~~should be collected and considered by a traffic engineer before~~  
22 ~~interim speed zones are posted. If the interim speed is lower~~  
23 ~~than the statewide maximum speed, then the interim speed must be~~

1 ~~established by city ordinance or Texas Transportation Commission~~  
2 ~~minute order. Once the traffic speeds have stabilized, normal~~  
3 ~~speed zone studies should be completed and evaluated by a~~  
4 ~~traffic engineer before the final speeds are posted.]~~

5 [~~(C) Speed checks should be made as quickly as~~  
6 ~~possible, but it is not necessary to check the speed of every~~  
7 ~~car. In many cases, traffic will be much too heavy for the~~  
8 ~~observer to check all cars.]~~

9 (3) Operation of speed check stations.

10 (A) Normal speed checks should:

11 (i) be made on average week days during off-peak  
12 hours under normal traffic conditions;

13 (ii) be made under favorable weather conditions;

14 (iii) include only "free floating" vehicles (see  
15 subparagraph (B) of this paragraph);

16 (iv) include a minimum of 125 cars in each direction  
17 at each station; and

18 (v) be discontinued after two hours using a radar or  
19 four hours if performed by a traffic counter that classifies  
20 vehicles by type, even if 125 cars have not been timed.

21 (B) The vehicles checked should be only those in which  
22 drivers are choosing their own speed ("free floating").

23 (i) When a line of vehicles moving closely behind

1 each other passes the speed check station, only the speed of the  
2 first vehicle should be checked, since the other drivers may not  
3 be choosing their own speed.

4 (ii) Cars involved in passing or turning maneuvers  
5 should not be checked, because they are probably driving at an  
6 abnormal rate of speed.

7 (C) Trucks and buses should be recorded separately and  
8 should not be included as part of the 125-car total.

9 (4) Location of speed check stations.

10 (A) A complete picture of speeds in an area can only be  
11 obtained through the proper location of speed check stations.  
12 Ideally, speed checks at an infinite number of locations would  
13 be desirable. However, since this is not practical, speed check  
14 stations must be strategically located to show all the important  
15 changes in prevailing speeds.

16 (B) In urban areas and on approaches to cities, speed  
17 check stations:

18 (i) should generally be located at intervals of 0.25  
19 mile or less if necessary to insure an accurate picture of the  
20 speed pattern;

21 (ii) should be located midway between signals or 0.2  
22 miles from any signal, whichever is less, to ensure an accurate  
23 representation of speed patterns;

1 (iii) should take into account the locality and the  
2 uniformity of physical and traffic conditions;

3 (iv) may be determined by trial runs through the area  
4 if volumes are too low or if a recheck of speeds is all that is  
5 needed; and

6 (v) should be checked midway between interchanges on  
7 the main lanes of expressways and freeways.

8 (C) In rural areas, speed check stations:

9 (i) may be at intervals greater than 0.25 mile, as  
10 long as the general speed pattern is followed;

11 (ii) may only be necessary at each end and the middle  
12 point if the characteristics of the roadway are consistent  
13 throughout the entire section; and

14 (iii) may be determined by trial runs through the  
15 area if the characteristics of the roadway are consistent  
16 throughout the entire section and a speed check in that section  
17 indicates that 125 vehicles cannot be checked in the two hours  
18 using a radar or four hours if performed by a traffic counter  
19 that classifies vehicles by type.

20 (5) Measuring speeds.

21 (A) Radar speed meters which operate on the radar  
22 principle are normally used for making speed checks. These  
23 devices operate from the power of an automobile battery and give

1 direct readings of vehicle speeds in miles per hour which are  
2 accurate to within 2 miles per hour.

3 (B) New technologies may be used in determining  
4 vehicular speeds for use in calculating 85th percentile speed if  
5 the measured speeds are accurate to within 2 miles per hour and  
6 the gap between vehicles is 3 seconds or greater. Examples of  
7 new technologies are counter-classifiers with the capability of  
8 classifying vehicles, determining vehicular speeds, and  
9 differentiating the gap between vehicles. These devices may  
10 include video imaging, tube counters, magnetic counters,  
11 inductive counters, etc.

12 (c) Schools.

13 (1) A regular speed zone must not change within the  
14 limits of a school speed zone since posting of a regular speed  
15 zone sign at the point of change would prematurely terminate the  
16 school speed zone. This is due to the fact that speed limits  
17 remain fixed until a revised limit is encountered.

18 (2) Speed checks provide a sound basis for selecting the  
19 proper speed limits for school zones. While it is not common  
20 practice to set speed limits significantly lower than the 85th  
21 percentile speed for regulatory speed zones, exceptions to this  
22 practice are often found at school zones.

23 (3) Factual studies, reason, and sound engineering

1 judgment should govern the final decision on the maximum  
2 deviation from the 85th percentile speed which will provide a  
3 reasonable and prudent speed limit.

4 (4) It is not advisable to set a school speed limit above  
5 35 miles per hour in either rural or urban areas. Lower school  
6 speed limits should be considered when the 85th percentile speed  
7 is below 50 miles per hour.

8 (5) When the results of a speed study indicate an 85th  
9 percentile speed at or below 50 miles per hour, the reduced  
10 school speed limit should not be more than 15 miles per hour  
11 below the 85th percentile speed or normal posted speed limits.  
12 If the 85th percentile speed is 55 miles per hour, the reduced  
13 school speed limit should be 20 miles per hour below the 85th  
14 percentile speed. Any roadway with an 85th percentile speed  
15 greater than 55 miles per hour requires a buffer zone to  
16 transition down to a 35 mile per hour speed limit.

17 (6) Operating School Buffer Zones With School Zones.

18 (A) Establishing buffer zones. In some cases, it may  
19 be appropriate to operate the buffer zone during the same time  
20 periods that the school speed zone operates. This will allow  
21 motorists to travel at the higher posted speeds through both  
22 zones when the slower speeds are not necessary. An example of  
23 this would be highway with a regular posted speed limit of 70

1 mph and a posted school zone speed limit of 35 mph. It would be  
2 appropriate to have a school transition speed zone of 55 mph  
3 that flashes with the 35 mph school zone on either side. This  
4 design makes for better public relations because people are not  
5 encouraged to violate or disrespect the law when driving through  
6 permanently fixed transition zones that are in affect 24 hours a  
7 day. Other situations may not lend themselves to such  
8 transitions zones, and should be left up to engineering  
9 judgment.

10 (B) Sign design.

11 (i) The basic sign design for a school transition  
12 speed limit shall be the same as that used for a regular school  
13 zone speed limit sign.

14 (ii) Where the department is responsible for signing  
15 school zone speeds and school transition speed zones, the  
16 "School Speed Limit XX When Flashing" signs shall be used.

17 (d) Speed zone design.

18 (1) Zone length.

19 (A) The length of any section of zone set for a  
20 particular speed should be as long as possible and still be  
21 consistent with the 85th percentile speeds. These zone lengths  
22 should be shown on the strip map in miles to three decimal  
23 places. Where graduated zones on the approach to the city are

1 at locations where speeds fluctuate, the speed zone should  
2 generally be 0.2 mile or more.

3 (B) School zones are the exception to this rule and may  
4 be as short as reasonable in urban areas, depending on approach  
5 speeds.

6 (i) School zones in urban areas where speeds are 30  
7 miles per hour or less may have school zones as short as 200 to  
8 300 feet.

9 (ii) Where speeds exceed 40 miles per hour, the  
10 minimum school zone length should be 1,000 feet to allow for  
11 normal deceleration.

12 (2) Transitions.

13 (A) The change in speed between two adjacent zones  
14 should not normally be greater than 15 miles per hour, because  
15 the change in speed would be too abrupt for driver observance.

16 (B) If adjacent 85th percentile speeds show an abrupt  
17 change of more than 15 miles per hour, a transition zone of  
18 approximately 0.2 mile or more in length should be used.

19 (3) Urban areas. Texas law states that the maximum speed  
20 limit through an urban district is 30 miles per hour, unless  
21 zoned otherwise by proper authority. A reasonable and prudent  
22 speed limit should be determined and negotiated with the city  
23 and set by city ordinance or resolution or by commission minute

1 order. A section of highway in this category should be speed  
2 zoned by commission minute order only if all negotiations with  
3 the city have proved unsuccessful.

4 (4) Directional differences.

5 (A) The 85th percentile speeds may differ considerably  
6 by direction at some locations. Such conditions are usually  
7 caused by relatively heavy development on one side of the road.  
8 Next to the development, motorists will tend to drive slower  
9 because of interference from traffic to and from the  
10 development.

11 (B) On divided highways, the zone speeds should conform  
12 to the 85th percentile speed even though this may require zoning  
13 for different speeds in opposite directions.

14 (C) On undivided roadways, the zones in opposite  
15 directions should be the same for enforcement purposes.

16 (5) Variation from 85th percentile.

17 (A) The posted speed selected is the nearest value  
18 ending in 5 or 0. The final speed limit may be lowered or  
19 raised by as much as 5 miles per hour from the 85th percentile  
20 speed or trial-run speed (performed if 125 cars cannot be  
21 checked during the two or four hour speed check) based on the  
22 professional judgment of the supervising engineer. Only under  
23 special conditions would the zone speed vary further from the

1 85th percentile. Explanations of such conditions follow.

2 (i) Different results at adjacent speed check  
3 stations. If the 85th percentile speeds for adjacent speed  
4 check stations are approximately the same, they may be averaged  
5 to determine the zone speed. Any 85th percentile speed should  
6 not be included in such averages if it varies more than 7 miles  
7 per hour from the speed derived from the average.

8 (ii) Crash rate greater than average. On a section  
9 of highway having a crash rate greater than the statewide  
10 average crash rate for the same type of roadway section, the  
11 zone speed may be as much as 7 miles per hour lower than the  
12 85th percentile speed. This should be considered more as an  
13 exception than as a rule, and should be done only when  
14 enforcement agencies will assure a degree of enforcement that  
15 will make the speed zone effective.

16 (iii) Light traffic volumes. At locations where  
17 traffic volumes are light and 125 cars cannot be checked in the  
18 two or four hours that the speed check station is operated, the  
19 85th percentile speed may not be reliable. Trial runs need to  
20 be made and documented in the study.

21 (iv) Legislative or congressional action.  
22 Notwithstanding the volume of traffic, if legislative or  
23 congressional action results in the immediate increase in

1 statewide maximum legal speed limits, then reasonable and  
2 prudent speed zones may be established by trial runs and  
3 engineering judgment in lieu of other speed check procedures  
4 provided in this subchapter. Speed zones established through  
5 this process should be rechecked in accordance with the  
6 procedure in subsection (e) of this section.

7 (v) Additional roadway factors. The posted speed  
8 limit may be reduced by as much as 10 miles per hour (12 miles  
9 per hour for locations with crash rates higher than the  
10 statewide average) below the 85th percentile speed or trial-run  
11 speed (performed if 125 cars cannot be checked during the two or  
12 four hour speed check) based on sound and generally accepted  
13 engineering judgment that includes consideration of the  
14 following factors:

15 (I) narrow roadway pavement widths - 20 feet or  
16 less, for example;

17 (II) horizontal and vertical curves - possible  
18 limited sight distance;

19 (III) hidden driveways and other developments -  
20 possible limited sight distance;

21 (IV) high driveway density - the higher the number  
22 of driveways, the higher the potential for encountering entering  
23 and turning vehicles;

1 (V) crash history along the location;

2 (VI) rural residential or developed areas - higher  
3 potential for pedestrian and bicycle traffic; and

4 (VII) lack of striped, improved shoulders -  
5 constricted lateral movement.

6 (B) Local public opinion may also be considered on  
7 farm-to-market and ranch-to-market roads without improved  
8 shoulders (Transportation Code, §545.3535(b)).

9 (C) The final decision on the amount of variation from  
10 the 85th percentile speed for a specific roadway should be based  
11 on the engineering judgment of the supervising engineer.

12 (D) Speed limits should not be posted more than 10  
13 miles per hour (12 miles per hour for locations with crash rates  
14 higher than the statewide average) below the 85th percentile or  
15 trial-run speed (performed if 125 cars cannot be checked during  
16 the two or four hour speed check) since unreasonably low speed  
17 limits have not been shown to be an effective way to control  
18 speeding. Allowing too great a variation would risk losing  
19 motorist respect for speed limits and traffic control devices.

20 (6) Blanket lowering of maximum speed limits. Blanket  
21 lowering of speed limits may be justified to avoid non-  
22 compliance with direct requests from the federal government to  
23 lower the statewide maximum speed limit.

1 (7) Trial runs.

2 (A) For the trial run, an average passenger vehicle  
3 that is representative of most vehicles on the highway and a  
4 reasonably competent driver should be selected.

5 (B) After the 85th percentile speeds and zone lengths  
6 have been selected, several trial runs should be made through  
7 the area in both directions driving at the selected speeds.  
8 This should show any irregularities in the zoning which need  
9 correction.

10 (8) Location of regulatory speed limit signs.

11 (A) Speed zones are legally described to the nearest  
12 thousandth of a mile (5 feet). Regulatory speed limit signs  
13 should be located within approximately 5 feet of the actual  
14 reference marker or milepoint defined in the minute order or  
15 city ordinance or resolution.

16 (B) The locations of regulatory speed zones tied to  
17 speed changes should be examined carefully to ensure that signs  
18 can be erected within the 5 feet variation. If adherence to the  
19 5 feet variation is not possible, the speed zone sign should be  
20 placed as close to the actual location defined in the minute  
21 order or city ordinance or resolution as practical. For  
22 example, if the reference marker or milepoint is located at an  
23 intersection, the regulatory speed limit signs should be located

1 in accordance with standard procedures for placement of  
2 departure signing.

3 (e) Rechecks of speed zones.

4 (1) Introduction.

5 (A) The basic data on which speed zones are established  
6 are subject to change when conditions change, and established  
7 speed zones must not be considered permanent.

8 (B) Physical improvements to the roadway, increased  
9 roadside development, and heavy increases in traffic volumes  
10 justify a recheck of speeds to determine whether the 85th  
11 percentile speed has changed enough to require a change in the  
12 zone speeds.

13 (2) Frequency of rechecks.

14 (A) Periodic rechecks of all zones are desirable at  
15 intervals of about three to five years in urban areas regardless  
16 of roadway improvements, roadside developments, or increases in  
17 traffic volumes. Trial runs or rechecks of every third speed  
18 check station may be made.

19 (B) Rechecks in rural areas are desirable at intervals  
20 of five to ten years. In many instances, trial runs may be  
21 sufficient.

22 (C) If the speed checks or trial runs indicate a need  
23 for revision of the zone, rechecks of speeds should be made at

1 all speed check stations for that particular section.

2 (f) Environmental speed limits.

3 (1) Existing environmental speed limits. Existing  
4 environmental speed limits created at the request of the Texas  
5 Commission on Environmental Quality (TCEQ) may be retained on  
6 the state highway system until such time as:

7 (A) the TCEQ advises the department in writing that the  
8 speed limit is unnecessary; and

9 (B) a speed study performed for the area finds that the  
10 existing environmental speed zone is not reflective of the 85th  
11 percentile speed as determined by procedures detailed in this  
12 subchapter.

13 (2) New environmental speed limits prohibited. As per  
14 Transportation Code, §545.353(j), no new environmental speed  
15 limits may be created on the state highway system.