

## Oklahoma Department of Transportation (ODOT) Responses to NTSB Questions Received December 28, 2022

**NTSB Question #1:** ODOT crews restriped the pavement on SH-99 and SH-22 at the intersection, restriped the white stop bars on the pavement at the stop signs, added two sets of rumble strips in the pavement in advance of the stop signs, and installed some yellow and red flags on the stop ahead and stop signs to help catch drivers' attention. *Confirm with ODOT that this was directly related to the crash and not part of a pre-existing effort to improve safety.*

**ODOT Answer:** These safety improvements were directly related to improving the visibility of the junction after the March 22nd accident. After ODOT and the City of Tishomingo met, Field District 3 was charged with implementation of any short-term measures to help with overall safety of the Junction of SH-22 and SH-99/US377. *Ron Brown, D3E.*

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**NTSB Question #2:** Were plans to reconfigure the intersection *in place prior to the crash or directly because of the crash? If it was prior to the crash, please provide the reasons why these changes were proposed (if it is an intersection that needs to be changed to meet new regulations, please provide the new regulation and the old regulation.)*

**ODOT Answer:** Prior to May of 2020, ODOT D3 Traffic Engineers, (Jeffcoat and Malave) had different conversations with the ODOT Johnston Co. Superintendent (Harner) about this junction. Both former Traffic Engineers requested speed studies. Malave had preliminary discussions with Traffic Division about potential design changes or roundabouts prior to May of 2020. I became District Engineer in May of 2020 and the District Staff did not have any detailed discussions about this intersection until after this tragic accident in March of 2022. *Ron Brown, D3E.*

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**NTSB Question #3:** Please confirm that ODOT Commissioners are considering lowering the speed from 50 mph to 45 for state highways 22 and 99.

**ODOT Answer:** Approved by Commission in June of 2022 and installed by District 3 in June of 2022. *Ron Brown, D3E.*

FOR PRESENTATION AT COMMISSIONER MEETING OF JUNE 6, 2022  
AGENDA ITEM NO: 71

SUBJECT: Speed Zone Revisions

a) Various Locations – Commission District III

1. Along SH 22 in Johnston County including the City of Tishomingo Length  
65 MPH Beginning at a point 0.46 mile east of the SH 22 & SH 1  
junction, extending easterly 2.16 miles to a point 0.58 mile  
west of Western Avenue  
PRESENTLY ZONED/POSTED 65 MPH (NO CHANGE) 2.16 miles  
55 MPH Beginning at a point 0.58 mile west of Western Avenue,  
extending easterly 0.18 mile to a point 0.40 mile west of  
Western Avenue

PRESENTLY ZONED/POSTED 65 MPH (CHANGE) 0.18 mile  
45 MPH Beginning at a point 0.40 mile west of Western Avenue,  
extending easterly 1.07 miles to a point 0.50 mile west of  
the SH 22 & SH 99 junction

PRESENTLY ZONED/POSTED 50, 55 MPH (CHANGE) 1.07 miles

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TOTAL APPROXIMATE LENGTH ZONED 3.41 miles

2. Along US 377 in Johnston County including the City of Tishomingo Length  
65 MPH Beginning at the Johnston & Marshall County line, extending  
northerly 4.44 miles to a point 0.81 mile south of the US 377 &  
SH 22 junction

PRESENTLY NOT ZONED

PRESENTLY POSTED 65 MPH (ZONING CHANGE) 4.44 miles  
55 MPH Beginning at a point 0.81 mile south of the US 377 & SH 22  
junction, extending northerly 0.26 mile to a point 0.55 mile south of  
the US 377 & SH 22 junction

PRESENTLY ZONED 50, 55 MPH

PRESENTLY POSTED 55 MPH (ZONING CHANGE) 0.26 mile  
45 MPH Beginning at a point 0.55 mile south of the US 377 & SH 22  
junction, extending northerly 0.55 mile to the US 377 & SH 22  
junction

PRESENTLY ZONED 50, 55 MPH

PRESENTLY POSTED 50 MPH (CHANGE) 0.55 mile

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TOTAL APPROXIMATE LENGTH ZONED 5.25 miles

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**NTSB Question #4:**

- a) What are the differences between the five types of rankings: expected collisions, excess crashes, cumulative percentile, adjusted mainline injury rate, and severity index? Why do they use different rankings? Have they been normalized so they can be compared?
- b) Why didn't ODOT's ranking include crashes from 2003, 2011, and 2021?
- c) The report stated, "Based on the partial data it had on the intersection, the ODOT crash analysis division ranked this intersection in comparison to 200 other intersections in ODOT Division 3." When does ODOT evaluate an intersection: when it
  - i. has a high number of crashes
  - ii. ODOT evaluates all their intersections as part of their regular inventory
  - iii. this was pulled for NTSB for our request
- d) For the column of "Categories", what do this mean: "Top 25 Division 3", "Top 200 Division 3" "Top 25 Statewide Rural Highways". What does "Top X" mean? Out of how many?
- e) For the column "SH22 and SH 99 Ranking" – what is the significance of the ranking and how is it used for decisions? Is there a threshold for ODOT to take action (i.e., redesign)? What would those actions be?

**ODOT Answer:**

- a) What are the differences between the five types of rankings: expected collisions, excess crashes, cumulative percentile, adjusted mainline injury rate, and severity index? Why do they use different rankings? Have they been normalized so they can be compared?
- i.* They are all variations of performance measures laid out by the Highway Safety Manual (2010 AASHTO)
  - ii.* The best explanation for the use of different rankings is due to large amounts of turnover in the positions responsible for compiling the rankings. With differences of opinion on which performance measure should be used for ranking. Our current State Highway Safety Engineer is the 5th person in that position since 2010.
  - iii.* They have not been normalized, so they cannot be directly compared across ranking types.
- b) Why didn't ODOT's ranking include crashes from 2003, 2011, and 2021?
- i.* While Collisions from 2003 predate the ODOT Collision Digest Rankings for which we have electronic record of, the 2010 digest in Table 1 is evaluated on collision data from 2002-2009
  - ii.* 2011 Collisions are present in the 2012 Digest up to the 2016 Digest. For the 2011 and 2003 collisions, individual collisions might not be present if they were not appropriately reported to DPS
  - iii.* 2021 Collisions had not been included in any rankings yet because that data year had yet to be closed out by FARS. The process for a collision to occur be reported and be entered into our collision analysis database has historically had a lag time of 6-8 months. So any analysis and ranking with complete 2021 data could not have occurred until late fall of 2022.
- c) The report stated, "Based on the partial data it had on the intersection, the ODOT crash analysis division ranked this intersection in comparison to 200 other intersections in ODOT Division 3." When does ODOT evaluate an intersection: when it a) has a high number of crashes b) ODOT evaluates all their intersections as part of their regular inventory c) this was pulled for NTSB for our request.
- i.* ODOT utilizes the Collision Digest to show intersections with high number of crashes. ODOT would have ranked this intersection against all other intersections in division 3 (or rural) and reported on just the Top 25 or 200 depending on the year and performance measure selected. The Collision Digest is sent to the Districts for their evaluation and inclusion in the ODOT work plan when funds available.
  - ii.* The Digest Rankings occur yearly, Further evaluation of any intersection can come about from appearance on a digest ranking list or by specific request from the Division or other party.
  - iii.* If this is referencing a look at the 2021 data rankings, then that specific years data was pulled and evaluated from incomplete data as a part this request.
- d) For the column of "Categories", what do this mean: "Top 25 Division 3", "Top 200 Division 3" "Top 25 Statewide Rural Highways". What does "Top X" mean? Out of how many?
- i.* Collisions for intersections are ranked based on the performances measure listed for that year from the highest value to lowest. The top 25 or 200 is where the ranking list was cut off for reporting that year, i.e., 1-25 highest or 1-200 highest. That is out of the total number of intersections within the rest of that category description. So the years Division 3 is listed it is all intersections on highways in that Division/District of our state, with Johnston county being in division 3. The years that Rural highways is listed then it is the ranking of all

intersections on highways not in urban areas. The lower the ranking number, the higher the priority for investigation and determining solution to lower collisions.

- e) For the column “SH22 and SH 99 Ranking” – what is the significance of the ranking and how is it used for decisions? Is there a threshold for ODOT to take action (i.e. redesign)? What would those actions be?
- i. That is to show where the subject intersection of SH 22 and SH 99 fell within the specific ranking categories. For most years it did not make the list, so there were at least 25 or 200 intersections that rated higher (performed worse) based on that years performance measure for evaluation.
  - ii. There is no specific threshold for action, but those intersections at the top of the list would be given first consideration for possible action on improvements. Actions could vary from further study, new signage, striping, signalization, clearance of view obstructions, geometric changes, etc depending upon the location and conditions.  
*Marty Farris, State Highway Safety Engineer. Reviewed by Ron Brown, D3E and Lauren January, State Traffic Engineer.*