Memorandum

CITY OF DALLAS

DATE July 19, 2024

TO Honorable Mayor and Members of the City Council

SUBJECT **Responses to Questions from the Vision Zero Briefing on April 3, 2024**

The following are responses to questions posed by City Council Members during the April 3, 2024 City Council briefing on Vision Zero:

1. Council Member Blackmon: What percent of Dallas roadways are owned by the City versus the Texas Department of Transportation (TxDOT)?

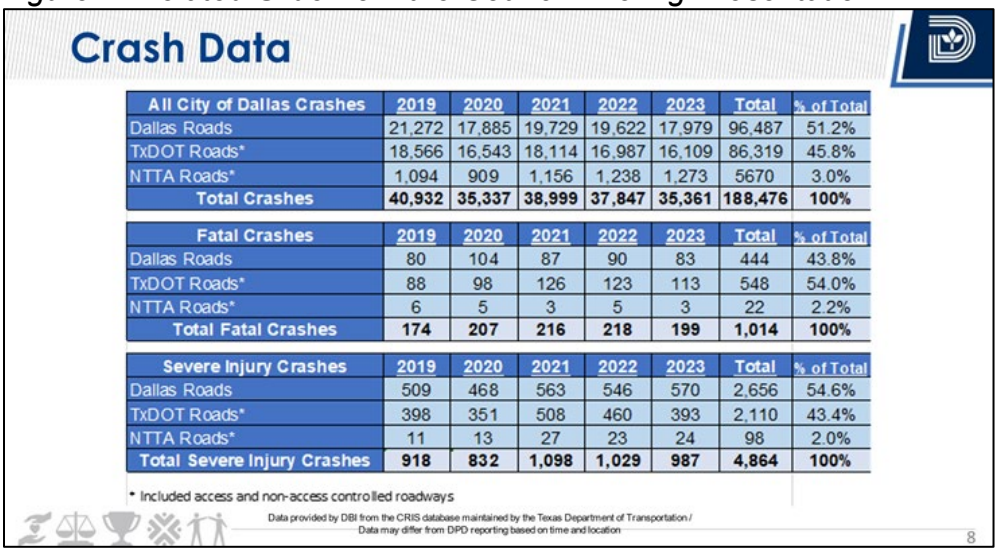
Table 1 shows the number and percentage of roadway centerline miles in Dallas that are owned by the city, the state (TxDOT), and the North Texas Tollway Authority (NTTA). This information was intended to be compared to the crash data figures in slide 8 of the Council Briefing presentation. For comparison purposes, that slide has been provided as Figure 1.

Table 1. Roadway Miles in Dallas by Roadway Owner

Ownership	Roadway Centerline Miles	Percent
City	4,150.10	80.19%
TxDOT	955.07	18.45%
NTTA	70.09	1.35%
TOTAL	5,175.26	100.00%

Source: City of Dallas PMP Centerline GIS file. The calculation does not include alleys or private streets, as the data in the Council Briefing presentation to which this is being compared did not include crashes on privately-owned roads, and a very small number of crashes occur in alleys.

Figure 1. Related Slide from the Council Briefing Presentation



Crash Data

All City of Dallas Crashes	2019	2020	2021	2022	2023	Total	% of Total
Dallas Roads	21,272	17,885	19,729	19,622	17,979	96,487	51.2%
TxDOT Roads*	18,566	16,543	18,114	16,987	16,109	86,319	45.8%
NTTA Roads*	1,094	909	1,156	1,238	1,273	5670	3.0%
Total Crashes	**40,932**	**35,337**	**38,999**	**37,847**	**35,361**	**188,476**	**100%**

Fatal Crashes	2019	2020	2021	2022	2023	Total	% of Total
Dallas Roads	80	104	87	90	83	444	43.8%
TxDOT Roads*	88	98	126	123	113	548	54.0%
NTTA Roads*	6	5	3	5	3	22	2.2%
Total Fatal Crashes	**174**	**207**	**216**	**218**	**199**	**1,014**	**100%**

Severe Injury Crashes	2019	2020	2021	2022	2023	Total	% of Total
Dallas Roads	509	468	563	546	570	2,656	54.6%
TxDOT Roads*	398	351	508	460	393	2,110	43.4%
NTTA Roads*	11	13	27	23	24	98	2.0%
Total Severe Injury Crashes	**918**	**832**	**1,098**	**1,029**	**987**	**4,864**	**100%**

* Included access and non-access controlled roadways

Data provided by DBI from the CRIS database maintained by the Texas Department of Transportation / Data may differ from DPD reporting based on time and location

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The comparison of these two data sets reveals that a disproportionate number of fatal and severe injury crashes occur on TxDOT-owned roadways (18.45% of roadway lane miles on which 45.22% of fatal and severe injury crashes occurred) and NTTA-owned roadways (1.35% of roadway lane miles on which 2.04% of fatal and severe injury crashes occurred). However, in drawing a conclusion it should be noted that the majority of City-owned roadways are local, neighborhood streets, which are low volume and low speed, and therefore much less likely to experience severe crashes. Conversely, all TxDOT and NTTA roadways in Dallas are higher speed and higher volume. Therefore, it is difficult to say whether, all things equal, one agency's roadways are more dangerous than another agency's roadways. It does, however, illustrate that it will require all roadway agencies working together to achieve Vision Zero.

2. Council Members Willis and Blackmon: How much funding is needed to achieve Vision Zero goals by 2030?

Vision Zero is a strategy that encompasses engineering in addition to other components. Key engineering/infrastructure improvements that current literature has shown to have proven safety benefits and that staff believe would need to be implemented in order to make substantial progress towards the goal of Vision Zero, are listed below. These are based on the Federal Highway Administration's Proven Safety Countermeasures and the Safe Systems Approach, which calls for roadway designers to anticipate human error by separating users in space and time, and accommodate human injury tolerances by reducing speeds and reducing impact forces.

- Continue to fill all sidewalk gaps identified in the Sidewalk Master Plan
- Continue to fill identified gaps in streetlights
- Continue the process of converting city owned/operated and Oncor-owned lights to LED
- Continue to implement Leading Pedestrian Intervals at traffic signals
- Install pedestrian countdown timers at signalized intersections where missing
- Conduct access management arterial roads (e.g., close median openings (forced U-turn), make driveways right-in/right-out, consolidate driveways)
- Continue to adjust the timing of traffic signals to incorporate any changes needed to left-turn phasing, pedestrian crossing time, and to promote speed limit compliance
- Continue to upgrade the safety components traffic signals, such as replacing the side-mounted signals downtown with overhead signals, installing left-turn signals where warranted, adding additional signal heads over travel lanes where needed, etc.)
- Continue to replace all traffic signal heads that lack reflective backplates with signal heads with reflective backplates

- Continue the effort to evaluate a reduction in the number of vehicular travel lanes or travel lane width and implement as appropriate, to reduce conflict points, slow speeds, and increase space for vulnerable travelers like pedestrians and bicyclists
- Convert a number of stop-controlled or signalized intersections to roundabouts, as feasible
- Install Rectangular Rapid Flashing Beacons (RRFBs) or Pedestrian Hybrid Beacons (PHBs) where there are large gaps between controlled crossings on arterial roads and there is a desire or need for pedestrians to cross the road

For the purposes of this discussion, a rough estimate of $3 billion was developed that corresponds to these individual tasks. Portions of this cost have previously been presented to City Council. For example, the presentation given to the Transportation & Infrastructure Committee in April 2021 on the Sidewalk Master Plan said it would cost $1 billion to fill all missing sidewalk gaps in the City and an additional $24.5 million annually to maintain existing sidewalks over 40 years, or $980 million, for a combined total of $2 billion. The presentation given to the Transportation & Infrastructure Committee in March 2024 on Oncor Streetlights communicated that it would cost up to $122 million to upgrade all remaining non-LED lights to LED.

With the Safe Systems approach to Vision Zero, education and enforcement are also critical to creating a culture of safe road users and have costs that are more challenging to quantify.

3. Council Member Willis: Are there studies that show a correlation between posting a 25-mph sign versus a 30-mph sign on reducing speeds and/or crashes.

Research has shown that just 5 mph can make a significant difference as to whether a pedestrian is killed or severely injured if involved in a collision with a motor vehicle. A study by the Institute for Road Safety Research found that if a pedestrian is hit by a vehicle going 20 mph, the likelihood that they will be killed or severely injured is 10%, but when the vehicle is going 30 mph, the likelihood increases to 40%. If the vehicle is going 40 mph, the likelihood further increases to 80%.

Studies have shown that reducing speed limits on low-volume, low-speed roads like local residential streets to 25 mph has resulted in improvements to safety.

- Traffic fatalities in the City of Seattle decreased 26% after the city implemented comprehensive, city-wide speed management strategies and countermeasures inspired by Vision Zero. This included setting speed limits on all non-arterial streets at 20 mph and 200 miles of arterial streets at 25 mph.[2]
- When New York City lowered its default city-wide speed limit from 30 to 25 mph in 2014, crash evaluations found that total crashes were reduced by an average of 39% on streets that fell within the statutory default speed limit change (unposted

streets) compared to streets where the speed limit was unchanged (those with posted limits). [1, 2, 3]

After Boston reduced its default speed limit from 30 mph to 25 mph in 2017, a study found that lowering the speed limit was associated with reductions of 2.9%, 8.5% and 29.3% in the odds of vehicles exceeding 25 mph, 30 mph and 35 mph, respectively.[4]
The default speed limit, also known as *prima facie* speed limit, is the presumed speed limit unless a speed zone has been established and an alternative speed limit established via city or state legislation and the posting of speed limit signs. *Prima facie* speed limits are established by state law (Section 545.352 of the Texas Transportation Code) and are typically what regulate speed on neighborhood streets. Collector and arterial streets typically have a speed limit that has been established by ordinance; therefore, changes to the *prima facie* speed limit would not affect changes to the speed limit on these streets.

Previous attempts to champion a reduction in the *prima facie* speed limit on residential roads in Texas from 30 mph to 25 mph have not been successful at the legislative level. The Department of Transportation and Office of Government Affairs are working to increase awareness of the benefits of lowering default speed limits.

5. Council Member Resendez: What is the frequency of fatal and severe injury crashes by road type? Is there data identifying crashes on residential roads versus non-residential roads?

Two different analyses were conducted to answer this question. The first analysis (A) evaluates the number of fatal and severe injury crashes based on the class of roadway that it occurred on. The second analysis (B) evaluates the number of fatal and severe injury crashes based on the predominant type of land use in the area around the crash.

A. Table 2 identifies the number and percentage of fatal and severe injury crashes that occurred on different classes of roadways in Dallas, ordered from the roads that have the most access restrictions (interstates) to the roads with the least access restrictions (local roads and non-trafficways). The source of the roadway classification is the Federal Functional Classification System maintained by the Texas Department of Transportation.

   The highest percentage of crashes occurred on principal arterials and minor arterials (45.21%), roads that serve high traffic volumes and long trip distances across neighborhoods (e.g., Preston Road, Hampton Road, Ferguson Road) .[5] Roughly one-third of fatal and severe crashes occurred on interstates, freeways, and expressways (e.g., IH 35E, US 75, the section of Loop 12 between IH 35E and SH 408).

Table 2. Percent of Fatal and Severe Injury Crashes Between 2015 and 2023, by Road Classification:

	Road Classification	Fatal & Severe Crashes (N)	Fatal & Severe Crashes (%)
1	Interstate	2,181	21.46%
2	Freeways and Expressways	1,185	11.66%
3	Principal Arterial	2,611	25.70%
4	Minor Arterial	1,982	19.51%
5	Major Collector	1,205	11.86%
6	Minor Collector	17	0.17%
7	Local	764	7.52%
8	Non-trafficway	216	2.13%
	TOTAL	10,161	100.00%

Source: Crash data is from the Texas Department of Transportation Crash Reduction Information System. The source of the data is crash reports filed by law enforcement agencies across the state.

It should be noted that the totals for interstates, freeways, and expressways includes crashes that occurred on the frontage/service roads; the reason being that the latitude and longitude data for many of the crashes on service/frontage roads put them in the middle of the interstate/freeway. Using the “Road Part” field in the crash data, it was determined that 5.66% of the severe crashes on interstates, freeways, and expressways in fact occurred on the adjacent service/frontage road.

B. Table 3 identifies the number and percentage of fatal and severe injury crashes by land use context, based on the predominant land use within 150 feet of the crash site. The land use data is derived from the Dallas County Appraisal District property tax records, which identifies properties as Residential or Commercial. For the purposes of this analysis, a crash was assigned as Residential or Commercial based on whether the majority of properties within 150 feet of the crash site were Residential or Commercial. If a crash had equal amounts of Residential and Commercial properties around it, it was assigned Commercial because that is the higher-intensity use.

Crashes that occurred on the “main lanes” or entrance and exit ramps of interstates or freeways were not assigned as Residential or Commercial, because the main lanes do not have direct access from nearby properties; therefore, the nearby land use would not impact operations and safety. These crashes are defined as “Freeway Crashes” in Table 3. Non-trafficway crashes (e.g., crashes that occurred in private parking lots) were also not assigned Residential or Commercial, as these crashes did not contain the latitude and longitude data needed to map the crashes and conduct the analysis.

Table 3. Percent of Fatal and Severe Injury Crashes Between 2015 and 2023, by Adjacent Land Use:

Predominant Land Use Within 150 Feet of Crash	Fatal & Severe Crashes (N)	Fatal & Severe Crashes (%)
Commercial	5,935	58.41%
Residential	1,095	10.78%
Freeway Crashes	2,915	28.69%
Non-trafficway Crashes	216	2.13%
TOTAL	10,161	100.00%

Commercial land uses tend to be clustered along higher-speed and higher-volume roads like principal arterials and minor arterials that run along the perimeter of residential neighborhoods, either because of zoning restrictions or because these roads offer greater business visibility. Higher speeds are associated with higher crash severity. This correlation, rather than commercial land uses being inherently more dangerous than residential uses, likely explains why the majority of fatal and severe crashes occurred in areas with commercial land uses.

Final Thoughts

Serious crashes are preventable, and no one should be killed or seriously injured on our roads. That is the fundamental belief behind Vision Zero. Improving the safety of Dallas streets will require investment across City departments. It will take the participation of partner agencies, the State legislature and lawmakers, and companies that operate large numbers of vehicles. Vision Zero invites every Dallasite to do their part to safely share the roads.

If you have any questions or concerns, please contact Ghassan “Gus” Khankarli, PhD, PE, PMP, CLTD, Director of the Department of Transportation, at ghassan.khankarli@dallas.gov or 214-671-9957.

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