Fehr & Peers

Memo

Date: January 26, 2026

To: Jessica Brown; Rafter J Ranch HOA

From: Michael Adamson, PE, RSP$_1$; Fehr & Peers

Subject: Rafter J Ranch Neighborhood Traffic Calming Study

This memorandum provides recommendations on improving pedestrian safety and traffic calming within the Rafter J Ranch neighborhood in Teton County, WY. The following sections explore the relationship between vehicle speed and pedestrian kinetic energy risk, speed trends within the Rafter J Ranch neighborhood, as well as potential speed reduction policy and engineering countermeasure recommendations to implement within the neighborhood.

Specific concerns brought about by the neighborhood Home Owners Association (HOA) included:

- Safety of several crossings along Big Trail Drive, including crossings serving daycare and high volumes of children.
- Safety of current roadway design around parks across neighborhood. Many neighborhood parks have roads encircling them, with vehicles often opting to use the uncontrolled legs of the circle to avoid stopping at stop signs.

Research Basis for Traffic Calming

Relationship Between Speed and Fatality Risk

Kinetic energy risk refers to the danger posed by the energy of motion, specifically in crashes where it is transferred rapidly leading to severe injury or death. Pedestrians and bicyclists are particularly vulnerable to kinetic energy. Research performed by the US Department of Transportation in March 2000 showed that, as vehicle speed increases, the likelihood of a pedestrian being killed in a crash with that vehicle increases exponentially. This research has since been confirmed and supplemented by research performed by a variety of universities nationwide. **Figure 1** shows a graphic used by the Institute of Transportation Engineers (ITE) to illustrate this risk as vehicle speed increases. This figure clearly demonstrates that, **in areas where vehicles are likely to interact regularly with pedestrians or bicyclists, vehicle speed limits and 85th percentile speeds[1] should be maintained low to mitigate potential risk.**

[1] Further detail on typical industry practice with regards to 85th percentile speed is provided on Page 3.



Figure 1. Risk of Pedestrian Death in Relation to Impact Speed (adapted by ITE from San Francisco MTA Vision Zero Action Plan, 2015).

Speed Limit Setting

The Rafter J Ranch Neighborhood currently has a proposed CCR amendment (as of January 2026, with amendment voting finalized in early February) to set the speed limit on all roads within the neighborhood, other than Big Trail Drive, to 15 miles per hour (mph). Big Trail Drive would maintain its current 25 mph speed limit. These lower speed limits are consistent with the speed risk trends shown previously in **Figure 1** and guidance provided by the Federal Highway Administration (FHWA) and the National Association of City Transportation Officials (NACTO) as part of their speed limit setting handbooks.[2] These national entities have provided guidance to set speed limits based on the surrounding context, including setting speeds below 25 mph in areas with regular pedestrian and bicycle use and adjacent active mode facilities. Rafter J Neighborhood easily fits this context, with the additional variables of several parks encircled by the roadway network and a high density of children.

[2] https://highways.dot.gov/sites/fhwa.dot.gov/files/Speed-Limit-Setting-Handbook.pdf

Speed Study

85th Percentile Speeds

It is typical industry practice to design against the 85th percentile speed of drivers when deciding on engineering and policy countermeasures. A speed study was conducted by the Rafter J Ranch neighborhood HOA on Big Trail Drive and Tensleep Drive near about 750 feet west of their intersections with US 26/189 from August 16, 2023 through September 28, 2023. These locations do put the speed counters a little outside of the neighborhood proper, which could represent slightly different speed conditions compared to if they were counted within the neighborhood itself. However, given the speed differences observed in this data and observations provided by HOA members, it is still anticipated that this speeding behavior trend continues within the neighborhood itself.

The following sub-sections summarize the speed trends on these two roadways.

Big Trail Drive

Figure 2 shows the average 85th percentile speed by time of day during weekdays and weekends on Big Trail Drive. In these periods, all results show higher speeds than the **25 mph** speed limit, with 85th percentile speeds being **10 mph** above the speed limit on average. Per the previously discussed kinetic energy risk, this average 85th percentile speed of **35 mph** represents an increase in risk of pedestrian serious injury or fatality of up to 30-40% when compared to the established speed limit.

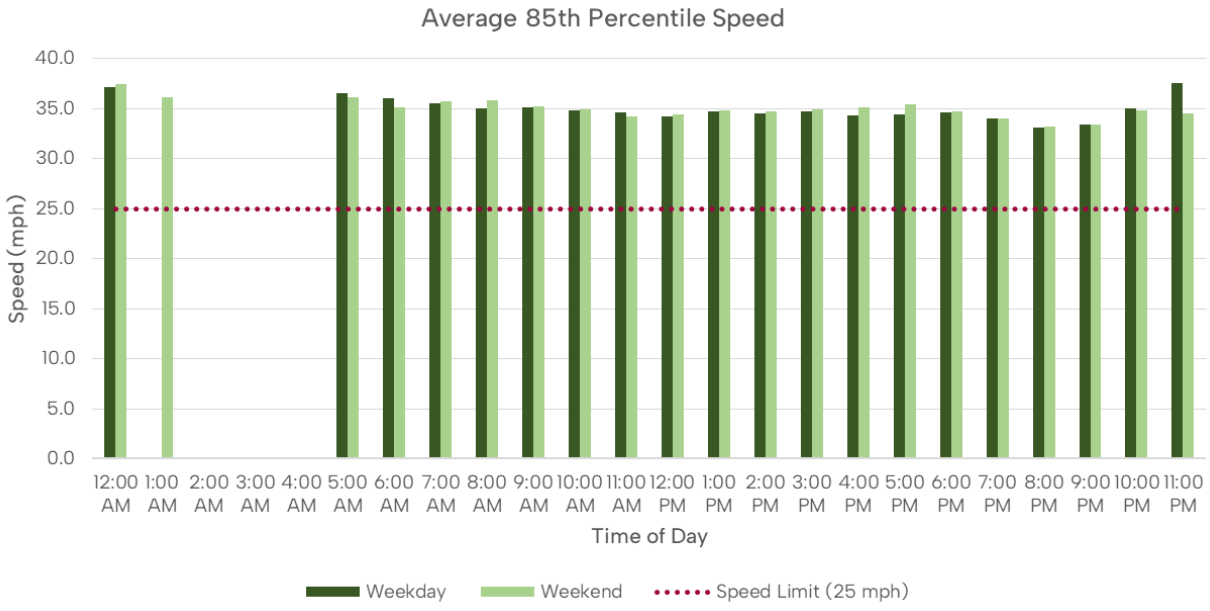


Figure 2. Average 85th Percentile Speed on Big Trail Drive, 2023.
Note: Vehicle data was consistently limited from 12 AM to 4 AM; where data was too limited to show clear trends, those trends were not provided.

Tensleep Drive

Figure 3 shows the average 85th percentile speed by time of day during weekdays and weekends on Tensleep Drive. Although this street remains a connective street within the neighborhood, it has a proposed CCR amended **15 mph** speed limit per neighborhood policy. All results show higher speeds than this proposed speed limit, with an average difference of **14.7 mph**. Per the previously discussed kinetic energy risk, this average 85th percentile speed of **30 mph** represents an increase in risk of pedestrian serious injury or fatality of up to 30–40% when compared to the established speed limit.

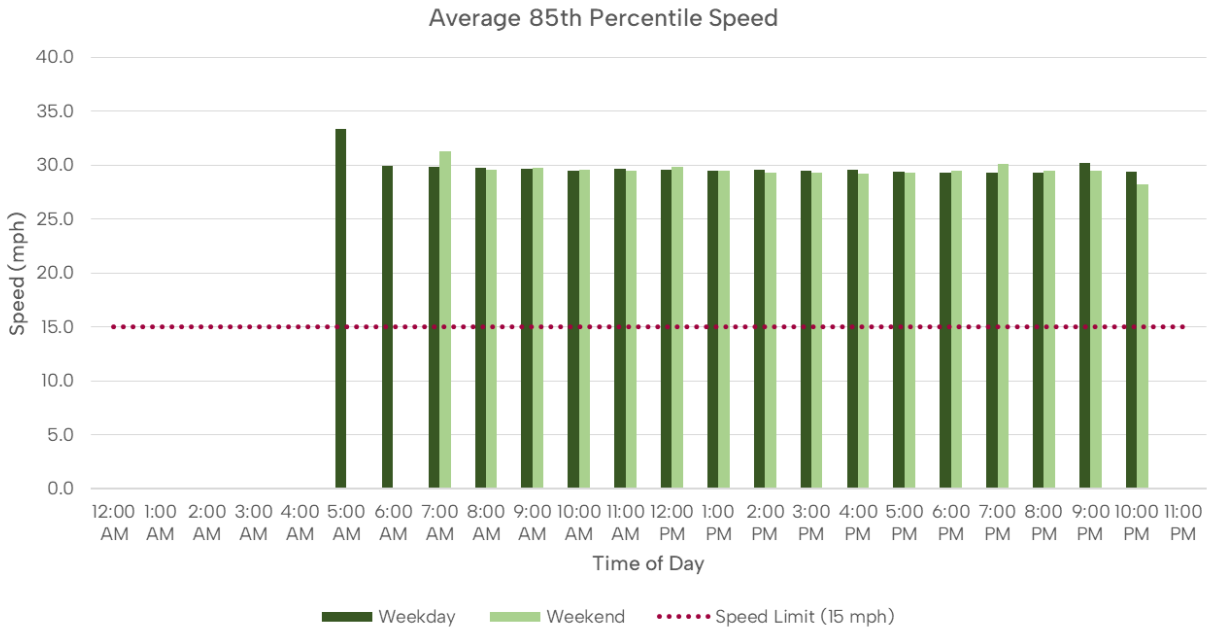


Figure 3. Average 85th Percentile Speed on Tensleep Drive, 2023.
Note: Vehicle data was consistently limited from 11 PM to 6 AM; where data was too limited to show clear trends, those trends were not provided.

Recommendations

The speed studies performed in the Rafter J Ranch neighborhood show 85th percentile speeds well above the established speed limits within the neighborhood, resulting in a much greater risk of pedestrian and bicyclist serious injury or fatality should a crash occur. Considering these conditions, the following policy and engineering countermeasures are recommended for the HOA's consideration:

CCR Amendments

- It is recommended that the HOA continue with the CCR amendment (and if not approved, the board should educate the voters on the importance of a lower speed limit) to implement a 15 mph speed limit on all neighborhood roads outside of Big Trial Drive, including providing additional speed limit signage on Big Trail Drive, Tensleep Drive and Homestead Drive
- It is recommended that the HOA consider reducing the speed limit on Big Trail Drive to 15 mph west of Appaloosa Dr

Engineering

- It is recommended that speed tables be considered at all pedestrian crossings (raised crossings) over Big Trail Drive, including signage, striping and providing a marked crossing with speed table at the crossing just south of the Flat Creek Bridge.
- It is recommended that speed tables be provided at the crossings over Tensleep Drive south of Hay Sled Drive and just west of US 26/189.
- It is recommended that speed feedback signs be provided at all crossings on Big Trail Drive and approaching each park throughout the neighborhood.
- It is recommended that speed humps or tables be provided at the entry points to each park circle across the neighborhood.
- All speed humps or tables should be designed with snowplow and emergency vehicle access in mind, as has been done in other similar neighborhoods.
- Where sight distance or pedestrian visibility at crossings, intersections or curves would not be adversely impacted, it is recommended that the HOA consider ways to narrow the visual field (such as allowing tall vegetation in select areas) along Big Trail Drive to encourage lower speeds and more careful driving.

These recommendations are for planning purposes only, and additional engineering study will need to be performed to determine the exact design and implementation of each countermeasure. Example images of these countermeasures have been provided in **Attachment A**.

Attachment A – Example Images of Countermeasures

Speed Hump/Table Designed for Snow Plow Access



Example Speed Hump



Example Speed Table



Example Speed Table Integrated with Crossing (Raised Crossing)

Speed Feedback Signage

