Intersection Analysis

Battle Intense at Hansel Dr/High Eschelon &
Battle Intense at Venturer Ln/Keeneland Dr

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Director of Public Works & Engineering Services

BACKGROUND

October 2019

Mr. Nichols requested additional stop controls at the subject intersections on October 3rd

February 2020

Study results were presented to the City Council on February 6th. The intersections did not meet warrants for all-way stop controls. Recommendations included pavement marking revisions and a restudy in spring. The restudy did not occur due to COVID 19.

December 2023

Mr. Nichols restated his request for additional stop controls on December 7th

February 2024

Intersections were restudied and results are presented to Council on February 1st

BACKGROUND

TMUTCD (2B.07) Multi-Way Stop Control:

- Can be used as a safety measure at intersections if certain traffic conditions exist.
- Should be used where traffic volumes on the intersecting roads is approximately equal.
- Shall be based on a traffic engineering study for justification.

TMUTCD (2B.07) Multi-Way Stop Warrants:

A. As an interim measure where traffic control signals are justified.

B. Where five or more reported crashes in a 12-month period might have been preventable with a multi-way stop installation.

C. Where minimum traffic volumes are met as follows:

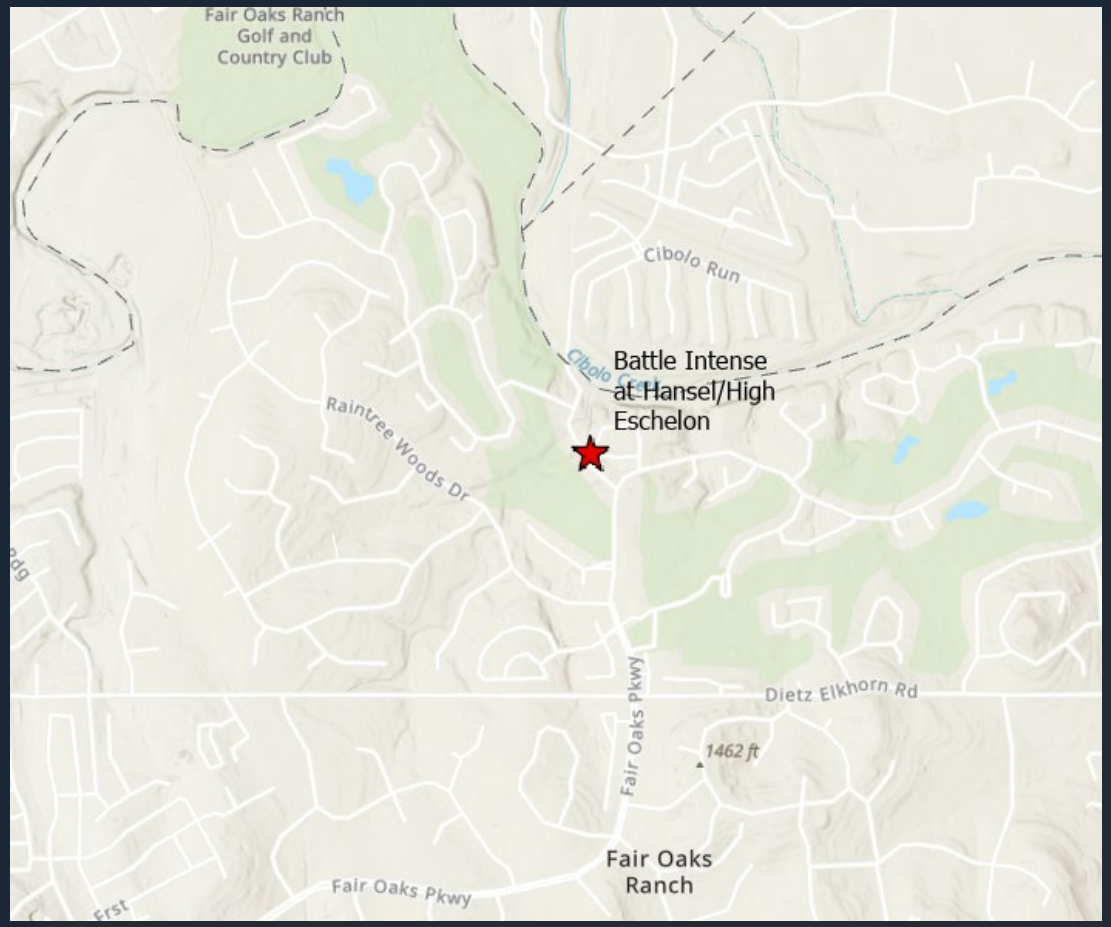
   1. Major street approaches average at least 300 vehicles per hour for any 8 hours of an average day; and

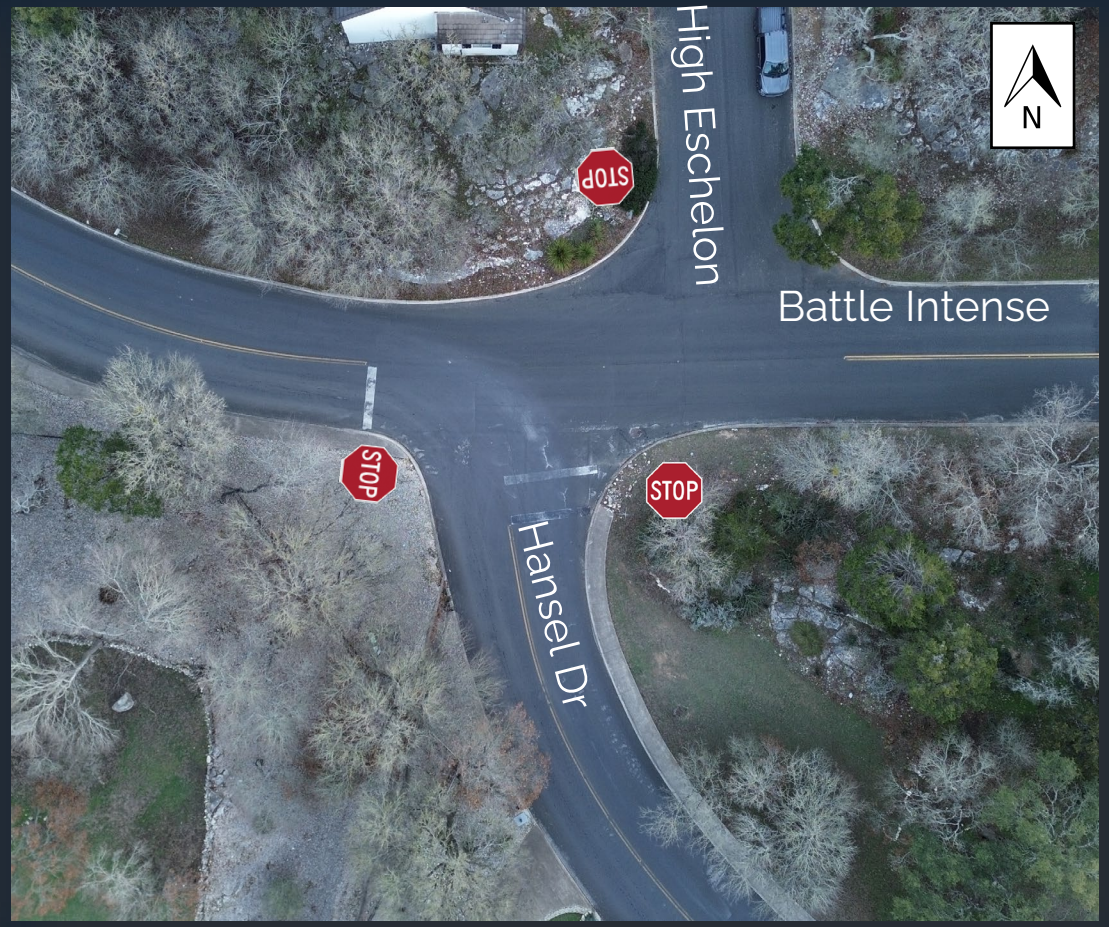
   2. Minor street approaches (total of both approaches) average at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

   3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values.

Battle Intense & Hansel/High Eschelon





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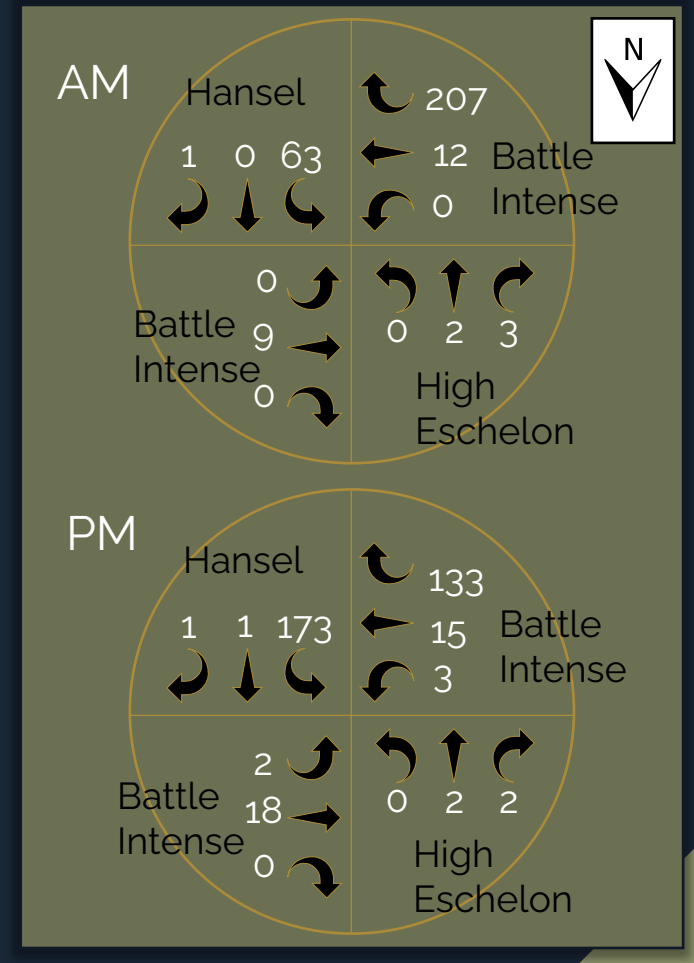


Battle Intense & Hansel/High Eschelon

Results of All-Way-Stop Warrant Analysis

A. Does Not Meet Warrant A
   - Traffic signal not warranted so cannot be an interim measure

B. Does Not Meet Warrant B
   - Only 1 non-intersection crash reported (2017)

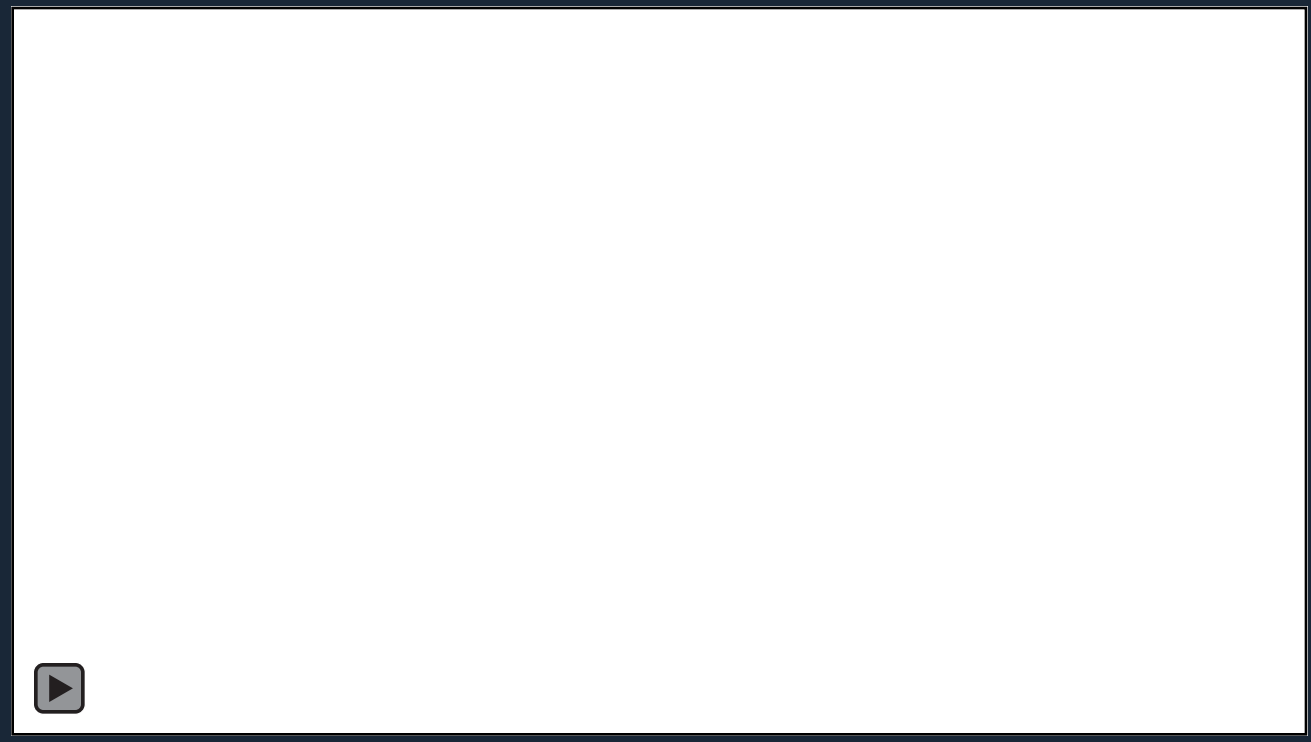
C. Does Not Meet Warrant C
   - Traffic volumes are very low

D. Does Not Meet Warrant D
   - Full reduction factors were considered

Battle Intense & Hansel/High Eschelon

Special Considerations

- ✓ Non-Aligned Streets
- ✓ Sight Distance Limitations (City has trimmed back vegetation)
- ✓ 3-Way Stop Condition
- ✓ Driver Expectation
- ✓ Pedestrian Movements
- ✓ Grades of Approaches



Battle Intense & Hansel/High Eschelon

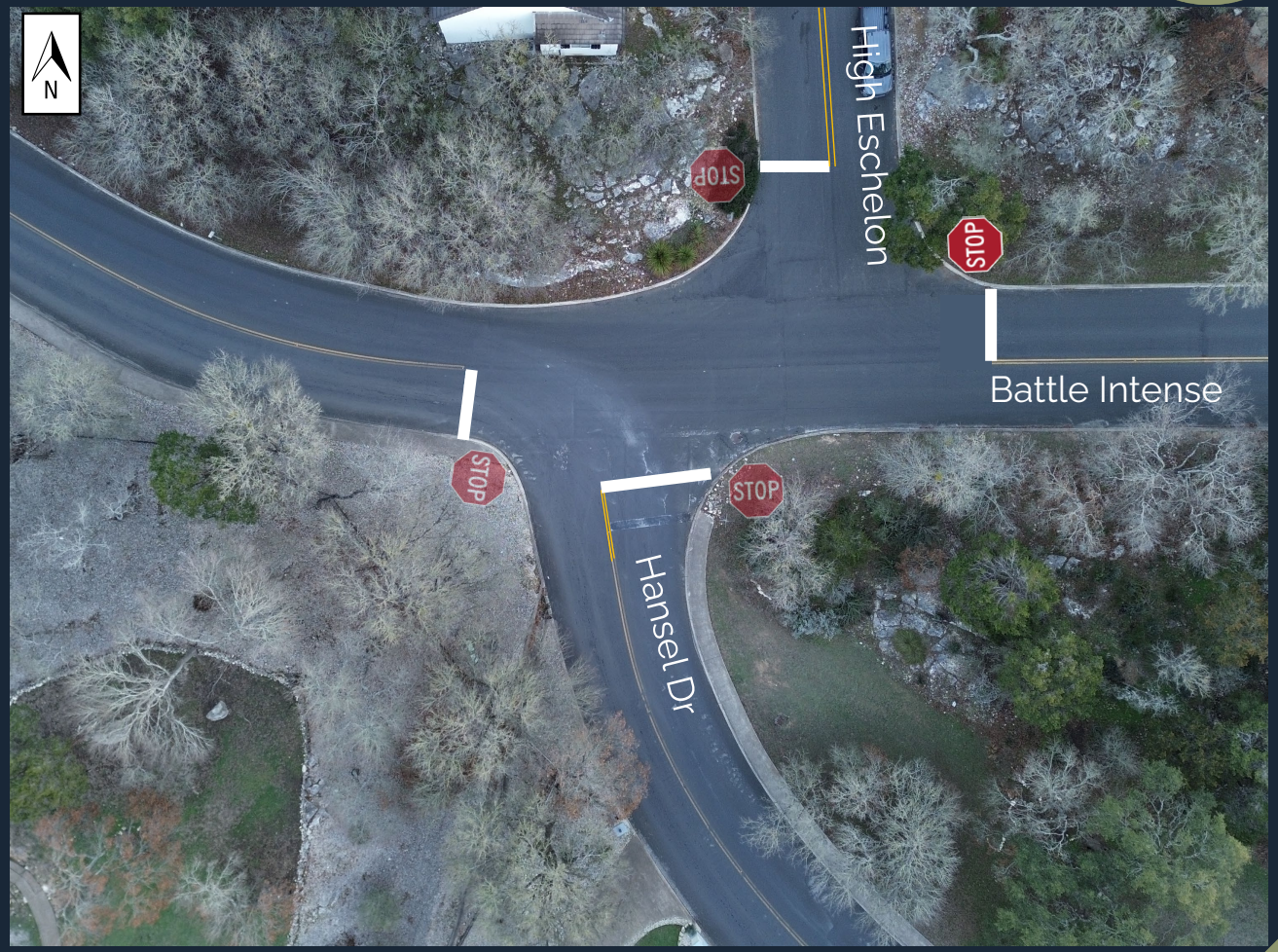
Traffic Engineering Study Results

- Does not warrant based on observed left-turn conflicts
- Does not warrant based on observed pedestrian activity
- Does not warrant based on comparison of cross-street operating characteristics
- Does not warrant based on traffic volumes
- Does warrant based on limited sight distance

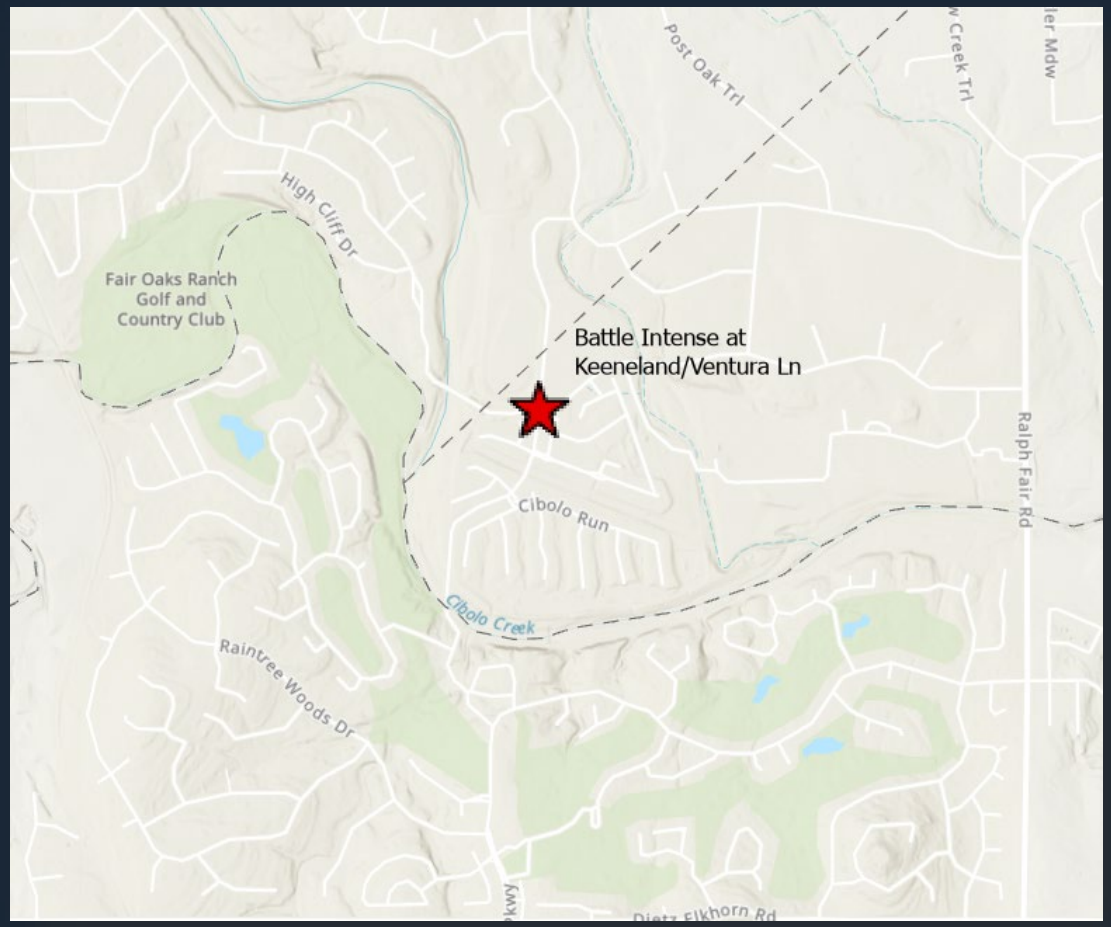
Battle Intense & Hansel/High Eschelon

Proposed Mitigation Measures

- Install Stop Sign on Westbound Approach
- Enhance Existing Pavement Markings and Install Stop Bars on SB and WB Approaches
- Continue to Trim Existing Vegetation to Improve Visibility



Battle Intense & Keeneland/Venturer



Battle Intense & Keeneland/Venturer Lane

Battle Intense & Keeneland/Venturer Lane

Results of All-Way-Stop Warrant Analysis

A. Does Not Meet Warrant A
   - Traffic signal not warranted so cannot be an interim measure

B. Does Not Meet Warrant B
   - Only 2 intersection-related crashes reported (2023)

C. Does Not Meet Warrant C
   - Traffic volumes are very low

D. Does Not Meet Warrant D
   - Full reduction factors were considered

Battle Intense & Keeneland/Venturer Lane

Special Considerations

- ✓ Wider Street (Keeneland)
- ✓ Higher Speeds (Keeneland)
- ✓ Sight Distance Limitations
- ✓ Pedestrian Movements (Including School Bus Drop-Off at Intersection)
- ✓ Unchannelized Left Turns

Battle Intense & Keeneland/Venturer Lane

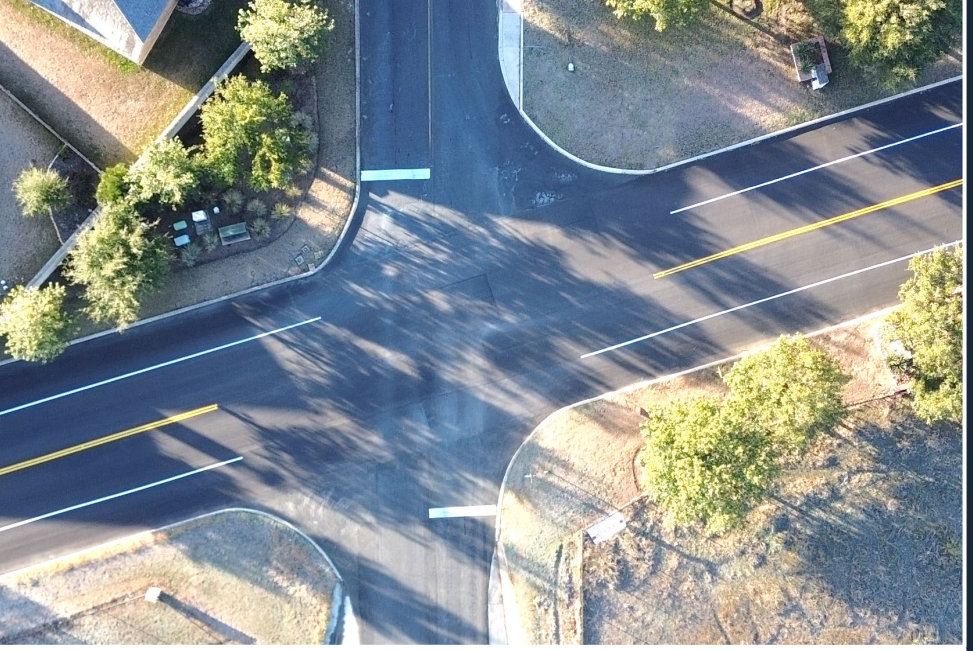
Traffic Engineering Study Results

- Does not warrant based on observed left-turn conflicts
- Does not warrant based on observed pedestrian activity
- Does not warrant based on approach sight distances
- Does not warrant based on comparison of cross-street operating characteristics
- Does not warrant based on alignment of cross streets

Battle Intense & Keeneland/Venturer Lane

Proposed Mitigation Measures

- Continue to trim existing vegetation to improve visibility
- Install radar feedback devices on Keeneland to reduce speeding (similar to Battle Intense)



Questions?