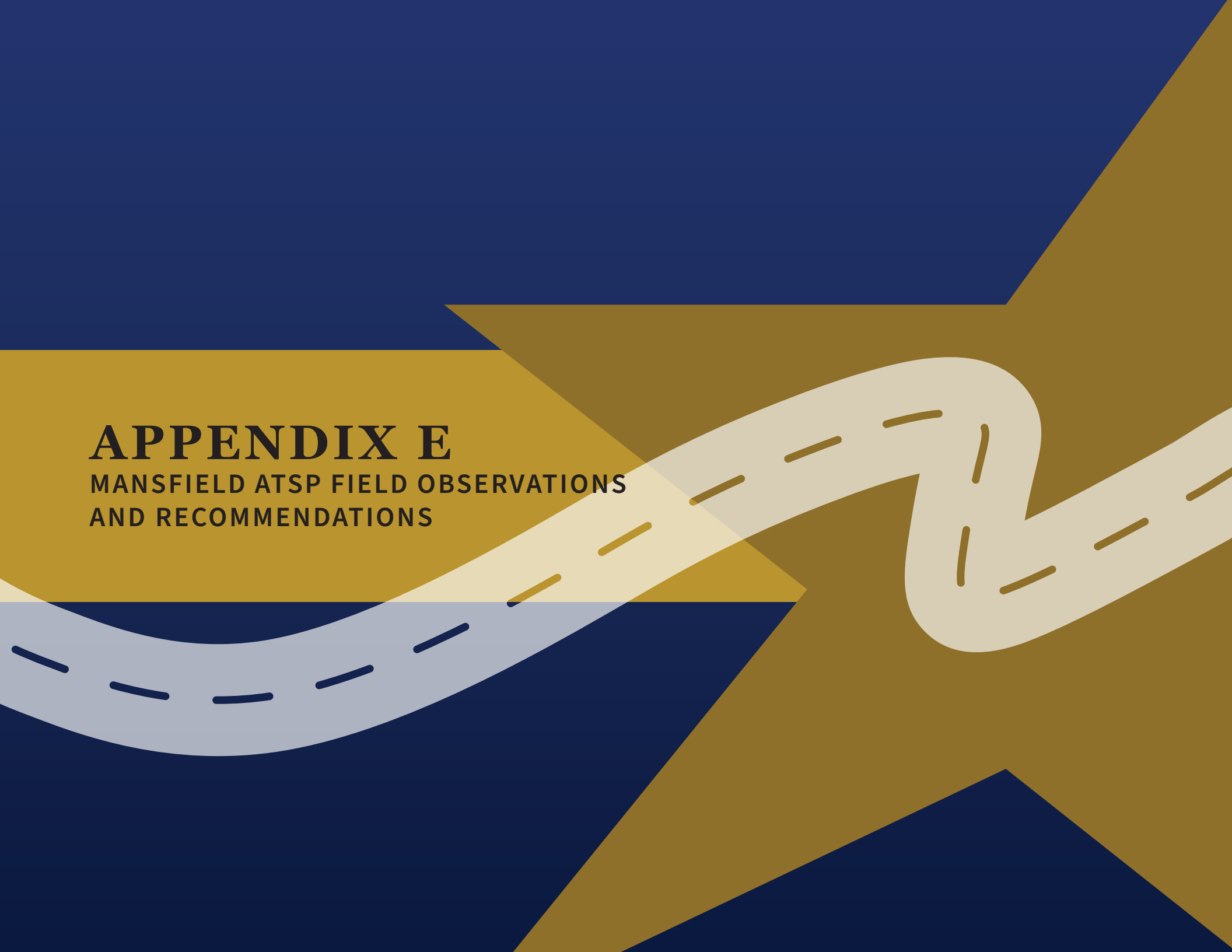




APPENDIX E

MANSFIELD ATSP FIELD OBSERVATIONS
AND RECOMMENDATIONS

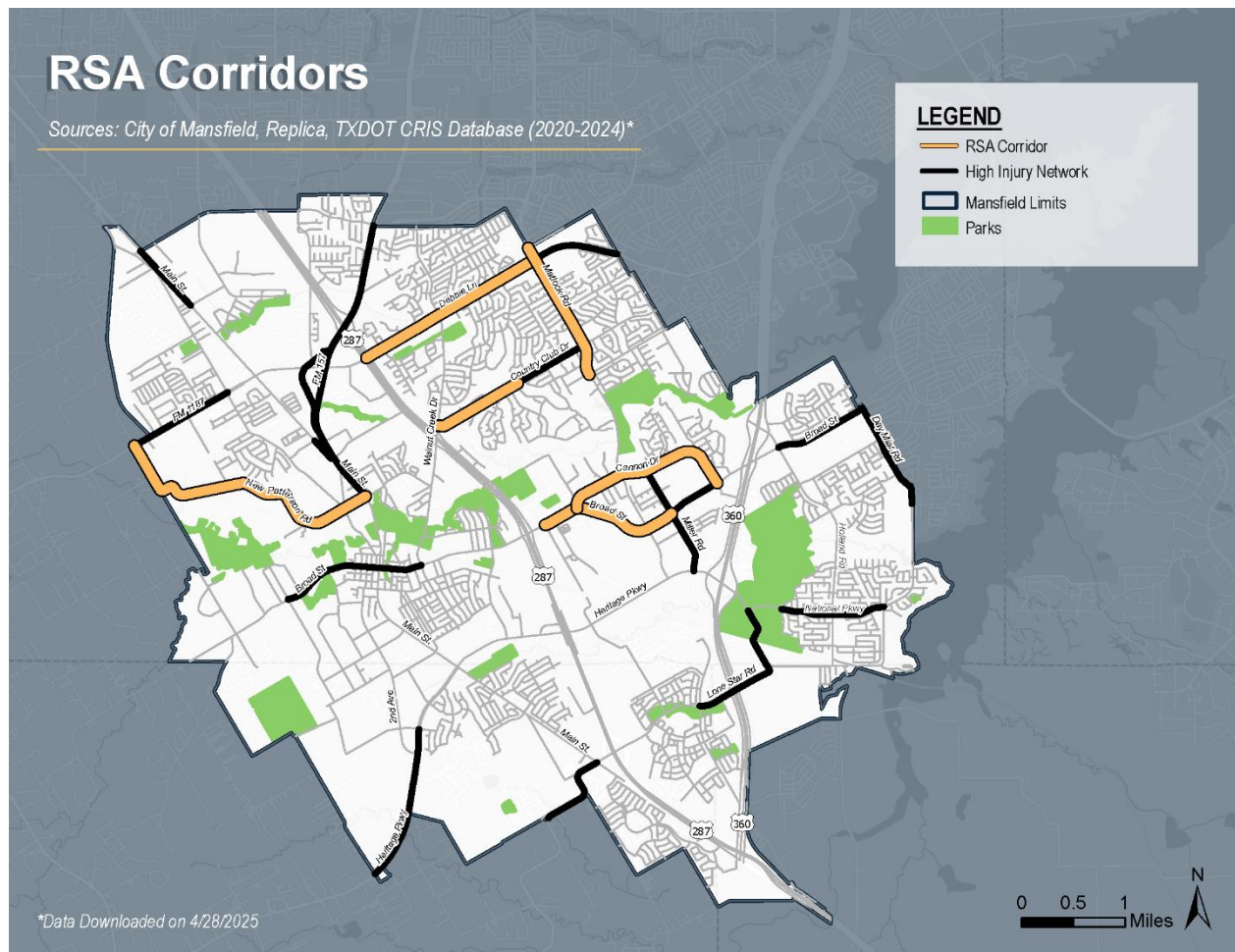
MEMORANDUM

To: City of Mansfield
From: Monica Powell, AICP, RSP₁
Date: November 5, 2025
Subject: Mansfield ATSP – Field Observations and Recommendations

OVERVIEW

A High Injury Network (HIN) is a method used to identify roads with the highest rates of severe injury and fatal crashes. Over the five-year study period, 2020 – 2024, Mansfield has identified its HIN. Mansfield’s HIN contains 19 roadway segments and 7 intersections. To begin addressing safety issues on the HIN, 6 corridors were created, referred to as roadway safety audit (RSA) corridors. Road safety countermeasures and recommendations were solidified following in-field observations to assess existing conditions and crash history at the locations. The study corridors and intersections are shown below in Figure 1.

Figure 1. Mansfield ATSP Study Corridors



The following memorandum provides a summary of the field observations and recommendations for each of the six corridors as part of the Active Transportation and Safety Plan (ATSP) for the City of Mansfield. The following table lists the study corridors and relevant information about each one.

Table 1. Mansfield ATSP Study Corridors

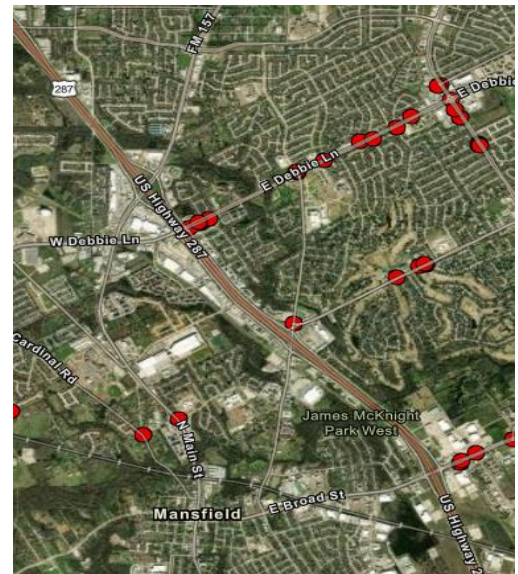
Corridor Limits	Speed Limit	Volume (AADT)	Function Class	Cross Section	Total Crashes	Crash Severity		
						K	A	B
Newt Patterson Rd. from N Main St. to Matlock Rd.	20-30	800	Collector	2 lane, undivided	63	0	4	15
Debbie Ln. from US HWY 287 to Matlock Rd.	45	31,400	Arterial	4 lanes, divided	348	1	3	58
Matlock Rd. from Mansfield Webb Rd. to Ragland Rd.	45	26,800	Arterial	4-lanes, divided	268	2	3	40
Country Club Rd. from N Walnut Creek Dr. to Fairhaven Dr.	40	14,500	Collector	4 lanes, divided	96	0	2	18
E Broad St. from N Mitchell Rd. to N Miller Rd.	45	21,400	Arterial	6 lanes, divided > 4 lanes, divided	290	0	4	52
Cannon Dr. from E Broad St. to E Broad St.	40	5,200	Collector	4 lanes, undivided > 2 lanes, undivided	170	0	5	36

IN-FIELD DATA COLLECTION

On September 29, 2025, the project team conducted in-field observations of the selected corridors and intersections to understand existing conditions, crash locations, and other factors. The in-field observations were conducted on foot and by vehicle, as needed.

Field observation data was collected via mobile phones using the ArcGIS Field Maps app (*Figure 2*). This allowed the team to log photos and notes into the mobile app to geo-tag the field observations to their corresponding locations. The observations were grouped in two categories: 1) corridor-wide and 2) location-specific for each of the study corridors.

Figure 2. Field Observation Crash Data Points and Notes



1. NEWT PATTERSON ROAD

The section of Newt Patterson Rd. between FM1187 and N Main St. spans 2.77 miles. This collector road contained 63 crashes during the study period, including 0 fatalities (K), 4 suspected serious injury crashes (A), and 15 suspected minor injury crashes (B). Both sides of the Newt Patterson corridor are primarily rural roads, but are lined with some residential and are met with retail at the intersection of Newt Patterson Rd. and North Main St.

CORRIDOR WIDE AND SEGMENT OBSERVATIONS AND RECOMMENDATIONS

➤ Install Additional Lighting

During the study period, 21 crashes occurred when the lighting was dark. Additional lighting is recommended to ensure visibility throughout the corridor. This enhancement provides better visibility for drivers and pedestrians, allowing both road users to navigate the corridor more effectively. Lighting is necessary at several locations, including the intersections of Cardinal Rd., North St., and Newt Patterson Rd., and the multiple 90-degree curves along the corridor.

➤ Trim Vegetation

Overgrowth of vegetation along the corridor can obscure the road's view, reduce the road width, and block lighting, which poses a safety risk for pedestrians and drivers.

Multiple 90-Degree Curves

➤ **Enhanced Delineation on Horizontal Curves**

With the lack of sight visibility along the curving roads, installing wider markings and edge line rumble strips with resurfacing can significantly enhance road safety. Clearer and more prominent markings can help drivers better navigate the road curvature.

New Haven Dr. to Turnstone Dr.

➤ **Flashing Chevron Signage**

Very poor sight distance was observed around curves. Due to the lack of visibility in the road curvature, it is recommended that flashing chevron signage be added to give drivers an indicator of the curve. Placing edge lines will also allow road users to more easily navigate the curve's shape. (Figure 4)

Royal Ct. to Turnstone Dr.

➤ **Realign Curve to Lessen the Angle of the Curve**

Very poor sight distance looking east was observed. Changing the horizontal curve radius will allow for better sight distance. (Figure 3)

Figure 4. Flashing Chevron Signage Recommended



Figure 3. Sight Distance Issues Looking East



INTERSECTION OBSERVATIONS AND RECOMMENDATIONS

Cardinal Rd. – North St. – Newt Patterson Rd.

➤ **Install roundabout**

With an existing large 5-legged intersection, a roundabout is recommended to add a roundabout to control traffic flow and reduce speeds. (Figure 5)

Newt Patterson Rd. and North Main St.

➤ **New Signal Heads**

It is recommended to do a full signal rebuild, including new signal heads, crosswalks, directional ramps, curbs, and backplate lighting. (Figure 6)

➤ **Upgrade Crosswalks to Continental Style**

To ensure visibility of the crosswalk, it is recommended to upgrade the existing striping to be continental style. (Figure 6)

➤ **Directional Curb Ramps**

It is recommended to install directional curb ramps for ADA-compliant pedestrian crossings. These ramps will provide safe and convenient transitions between sidewalks and crosswalks for pedestrians, including those using wheelchairs, strollers, or other mobility aids. (Figure 6)

➤ **Install Additional Lighting**

Proper lighting makes both pedestrians and vehicles more visible to each other, reducing the likelihood of accidents, particularly during nighttime or low-light conditions. To reduce the number of crashes, it is recommended to install additional lighting. (Figure 6)

Figure 5: Proposed Roundabout



Figure 6. Full Signal Rebuild Needed, Upgrade Crosswalks, Directional Curb Ramps



2. DEBBIE LANE

The section of Debbie Ln. from US Highway 287 to Matlock Rd. spans 2.73 miles. This segment is a four-lane divided roadway with a posted speed limit of 45 mph. It is an arterial roadway primarily backing residential properties with commercial uses at both intersections of the corridor's entrance/exit. The Debbie Lane corridor is connected to 2 major throughfares – Walnut Creek Dr. and Matlock Rd. An average of 31,400 vehicles travel daily on this section of Debbie Ln.

INTERSECTION OBSERVATIONS AND RECOMMENDATIONS

Debbie Ln. and US HWY 287

➤ Trim Vegetation

To improve sight distance, it is recommended to trim the vegetation that hangs over the roadway. Overhanging vegetation obstructs drivers' views, particularly when looking north, increasing the risk of accidents. Trimming this vegetation will enhance visibility, allowing for safer and more informed driving decisions. (*Figure 7*)

Figure 7. Trim Vegetation



Driveway Between US HWY 287 and Breckenridge Rd.

➤ Hooded Left Turn

Poor sight distance from both sides occurs at this intersection. Converting the open median into a direction median is recommended, creating a hooded left turn for the west- and eastbound left turns. (Figure 8)

Debbie Ln. and Breckenridge Rd.

➤ Conduct a Traffic Signal Warrant Study

Due to the observed speeding, high crash count, and long distance between nearby signals, it is recommended to signalize this intersection.

Figure 8. Poor Sight Distance Looking West – left; Looking East – right | Hooded Left Turn Recommended



Debbie Ln. and Walnut Creek Dr.

➤ Positive Offset Left Turn

Currently, there is poor sight distance at the intersection. It is recommended to create a positive offset for the left turn lane to improve sign visibility when turning.

➤ **Add Retroreflective Backplates**

It is recommended to add retroreflective backplates to the existing signals. This enhances visibility for road users, reducing crash risk, and enhancing safety for all road users. (Figure 9)

➤ **Add “Yield to Pedestrians” Signage**

To ensure the safety of pedestrians crossing the roadways, it is recommended to add signage to yield to pedestrians. This is recommended to be added to all four existing slip lanes at the intersection.

➤ **Add Detectable Surfacing to Ramps**

To enhance pedestrian safety, it is recommended that the ramps be upgraded to include raised pavement markers that indicate when a pedestrian is nearing the intersection. This upgrade is also necessary to be ADA-compliant.

➤ **Analyze Signal Timing**

It has been observed that there are vertical and horizontal sight distance issues for road users in the southbound lane. This causes potential conflicts with the northbound left turn that must yield to southbound oncoming traffic. To remedy this, it is recommended to examine the signal timing and potentially add a protected left-turn phase to the signal timing. (Figure 10)

Figure 9. Add Retroreflective Backplates & Update Signage and Wet Pavement Markings



Figure 10. Sight Distance Issues



Debbie Ln. and St. Charles Dr.

➤ Update Signage and Pavement Markings

To make the crosswalk safer for pedestrians, it is recommended to upgrade the existing markings to wet-reflective pavement markings.

➤ Conduct Traffic Signal Warrant Study

Due to the observed speeding, high crash count, and long distance between nearby signals, it is recommended to signalize this intersection. (Figure 11)

Debbie Ln. and Fairfax Dr.

➤ Clear trees

To improve sight distance, it is recommended to clear the tree that obstructs the view. The tree is currently blocking drivers' lines of sight, making it difficult to see oncoming traffic or pedestrians, particularly when approaching the intersection and vehicles making a left turn. Clearing the tree will enhance visibility, reduce the risk of collisions, and allow for safer and more efficient movement through the area. (Figure 12)

➤ Replace Street Name Sign

The street name sign is missing. It is recommended to replace the sign name to be more to road users for navigation. (Figure 13)

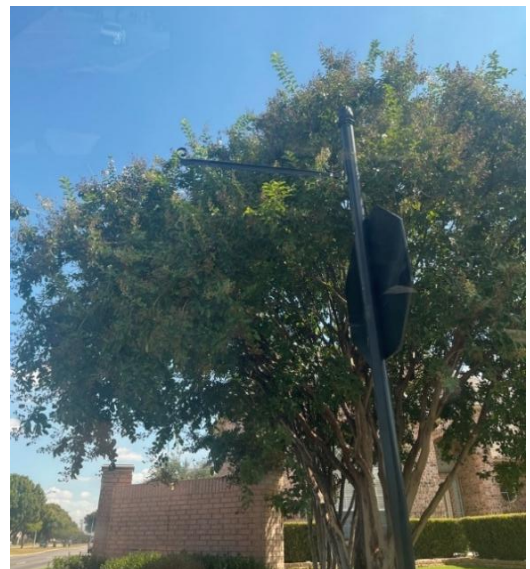
Figure 12. Clear Trees



Figure 11. Conduct Traffic Warrant Study



Figure 13. Replace Street Name Sign



➤ **Add Lighting**

Proper lighting makes both pedestrians and vehicles more visible to each other, reducing the likelihood of accidents, particularly during nighttime or low-light conditions. To reduce the number of crashes, it is recommended to install additional lighting.

➤ **Add Eastbound Left Turn Lane Storage Lane**

The current median does not have a left turn storage lane, causing disruption in the flow of traffic. It is recommended to add an eastbound left turn storage lane into the existing median

➤ **Install Hooded Left Turn Lane**

Currently, the sight distance is poor for vehicles making a right turn traveling eastbound. It is recommended to install a westbound hooded left-turn lane to allow vehicles to turn left into Fairfax Dr. but not turn left out.

Jersey Mike's/Walmart Neighborhood Market Exit

➤ **Install Dual Hooded Left Turn Lane**

It is recommended to install an east- and westbound dual-hooded turn lanes. This addition significantly enhances transportation safety by providing dedicated lanes for turning vehicles. This reduces the risk of rear-end and side-impact collisions, minimizes conflicts at busy intersections, and creates safer conditions for both drivers and pedestrians.

3. Matlock Road

The study section of Matlock Rd. from Mansfield Webb Rd. to Ragland Rd. spans 1.38 miles. This segment is a four-lane divided arterial is located on the east side of the city. There is a posted speed limit sign of 45 mph. This segment of Matlock Rd. is classified as an arterial roadway connected to two major thoroughfares – Debbie Ln. and Country Club Dr. It carries a daily volume of 26,800 vehicles.

CORRIDOR WIDE AND SEGMENT OBSERVATIONS AND RECOMMENDATIONS

➤ **Add Landscaping in Parkway**

Adding landscaping vertical elements in the parkway, such as trees and shrubs, can naturally slow down vehicles by creating visual friction. These elements make the road feel narrower and more visually complex, encouraging drivers to reduce their speed instinctively.

INTERSECTION OBSERVATIONS AND RECOMMENDATIONS

Matlock Rd. & Mansfield Webb Rd.

➤ **Add Retroreflective Backplates**

It is recommended that retroreflective backplates be added to the existing signals. This will enhance road users' visibility, reduce crash risk, and improve safety.

➤ **Refresh Crosswalks**

To improve visibility of the pedestrian crosswalk, it is recommended to refresh the striping of the crosswalk. This will help guide pedestrians to safe crossing points and alert drivers to expect pedestrian traffic.

➤ **Update Pedestrian Push Buttons**

The existing pedestrian push buttons are not in ADA compliance as they do not provide audible cues for the user. (Figure 14)

➤ **Upgrade to Directional Ramps**

Directional curb ramps are recommended to improve accessibility and ensure compliance with ADA standards. These ramps will provide safe and convenient transitions between sidewalks and crosswalks for pedestrians, including those using wheelchairs, strollers, or other mobility aids.

Figure 14. Update Needed to Pedestrian Push Buttons and Refreshing of Crosswalk



➤ **Relocate Crosswalk**

It is recommended to relocate the crosswalk to the north leg. This relocation will also require the relocation of the cabinet to remove the existing barrier for pedestrians on the sidewalk. This will enhance ADA compliance for use of the sidewalk. (Figure 15)

➤ **Close Access Point Near Gas Station**

Consider closing the access point or adding “X” marking and “Do Not Block Intersection” signage. This will increase the flow of traffic and reduce crashes. (Figure 16)

➤ **Close Sidewalk Gap on Southwest Corner**

The existing sidewalk is incomplete; therefore, it is recommended to construct new sidewalk to fill the gap.

Matlock Rd. & Debbie Ln.

➤ **Add Tattletale Lights**

Red light running has been observed in this area. To make the area safer, tattletale lights or additional forms of enforcement are recommended to indicate that there is a red light.

➤ **Add Retroreflective Backplates**

It is recommended to add retroreflective backplates to the existing signals. This enhances visibility for road users, reducing crash risk, and enhancing safety for all road users.

➤ **Add Yield for Pedestrian Markings in All Slip Lanes**

There are 4 slip lanes at this intersection. To enhance safety for pedestrians, it is recommended to add necessary signage and pavement markings to yield to pedestrians (Figure 17).

Figure 15. Relocate Crosswalk and Remove Cabinet



Figure 16. Close Access Point



Intersection Near Bank of America and Wingstop Entrance

➤ **Clear Tree and Utility Pole**

At this intersection, a tree and a utility pole are blocking the sight distance for a right turn (*Figure 18*). Clearing these items is recommended to improve sight distance.

➤ **Clear Sidewalk**

There is overgrown vegetation making it difficult for pedestrians to use the sidewalk (*Figure 19*). It is recommended to clear the sidewalk of vegetation.

Figure 17. Yield to Pedestrian Markings Needed



Figure 18. Clearance Needed



Figure 19. Clear Sidewalk



Matlock Rd. and Brittany Ln.

➤ **Install Hooded Left Turn Lane**

Currently, the sight distance is poor. It is recommended to install a hooded left-turn lane for the northbound and southbound lanes. (Figure 17)

Matlock Rd. and Country Club Dr.

➤ **Add Retroreflective Backplates**

It is recommended to add retroreflective backplates to the existing signals. This enhances visibility for road users, reducing crash risk, and enhancing safety for all road users.

➤ **Add Detectable Surfacing to Ramps**

To enhance pedestrian safety, it is recommended to upgrade the ramps to have raised pavement markers to indicate that the pedestrian is nearing the intersection. This upgrade is also necessary to ensure ADA compliance. (Figure 18)

Figure 17. Install Hooded Left Turn Lane



Figure 18. Detectable Surfacing Needed



Matlock Rd. and Fairhaven Dr.

➤ Install Dual-Hooded Left-Turn Lane

Poor sight distance was observed in both directions (Figure 19). To control access, the median should be closed and converted to a north- and southbound dual-hooded left turn lane.

Figure 19. Poor Sight Distance Observed (Looking East – left; Looking West – right)



Matlock Rd. and Ragland Rd.

➤ Add Flashing Yellow Arrow

Currently, there is a left turn on a green signal. A flashing yellow arrow is recommended in place of the left turn on green ball. The flashing yellow arrow better communicates that left-turning drivers must yield to oncoming traffic and pedestrians. (Figure)

➤ Add Retroreflective Backplates

It is recommended that retroreflective backplates be added to the existing signals. This will enhance road users' visibility, reduce crash risk, and improve safety. (Figure)

➤ Upgrade to Directional Ramps

Directional curb ramps are recommended to improve accessibility and ensure compliance with ADA standards. These ramps will provide safe and convenient transitions between sidewalks and crosswalks for pedestrians, including those using wheelchairs, strollers, or other mobility aids.

(Figure)

Figure 24. Add Flashing Yellow Arrow and Retroreflective Backplates



Figure 24. Upgrade to Directional Ramps



4. COUNTRY CLUB DRIVE

This section of Country Club Dr. from Walnut Creek Dr. to Fairview Dr. spans 1.63 miles. This is a four-lane divided collector roadway connected to one major thoroughfare. Country Club Dr. is primarily lined with residential properties with a school and golf course along the corridor. Country Club Dr. has a posted speed limit of 40 mph. There is an average daily volume of 14,500 vehicles that travel on this segment. There were 417 crashes that occurred during the study period, 2020-2024, along the South Main St. corridor. Of these crashes, there were 0 fatalities (K), 6 resulted in serious injuries (A), and 65 in minor injuries (B). Additionally, 8 crashes involved a pedestrian or bicyclist.

INTERSECTION OBSERVATIONS AND RECOMMENDATIONS

Country Club Dr. and Walnut Creek Dr.

➤ Increase Left-Turn Storage

It has been observed that the existing hooded left turn is underutilized. It is recommended that the left turn lane queue spacing is increased to allow for better flow of traffic. In order to create the additional storage, the hooded left turn lane to the east will need to be closed.

Country Club Dr. and Kingston Dr.

➤ Clear Trees

There are currently trees partially blocking the view. To improve sight distance, it is recommended to clear the existing trees so it is easier and safer for drivers to see westbound traffic. (Figure 20)

Figure 20. Recommended to Clear Trees to Improve Sight Distance



Country Club Dr. and Fairhaven Dr.

➤ Clear Brick Wall

Sight distance is poor looking east. Consider moving the existing fence closer to the front corner to improve line of sight. (Figure 21)

Alley (Between Fairhaven Dr. and Fairhaven Dr.)

➤ Install Hooded Median

Currently, the sight distance is poor. It is recommended to install a hooded left-turn lane for the eastbound left lane.

➤ Relocate Fence

Currently there is poor sight distance at this intersection. It is recommended to relocate or clear the fence to allow for better sight distance (Figure 22)

Figure 21. Clear Brick Wall

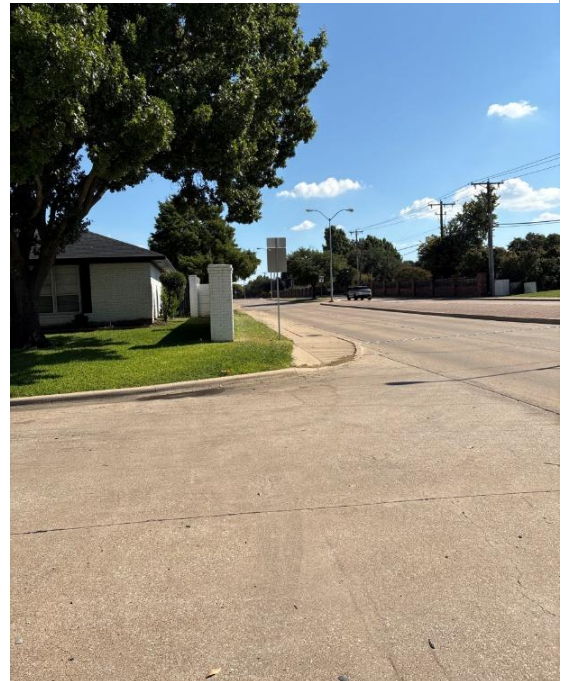
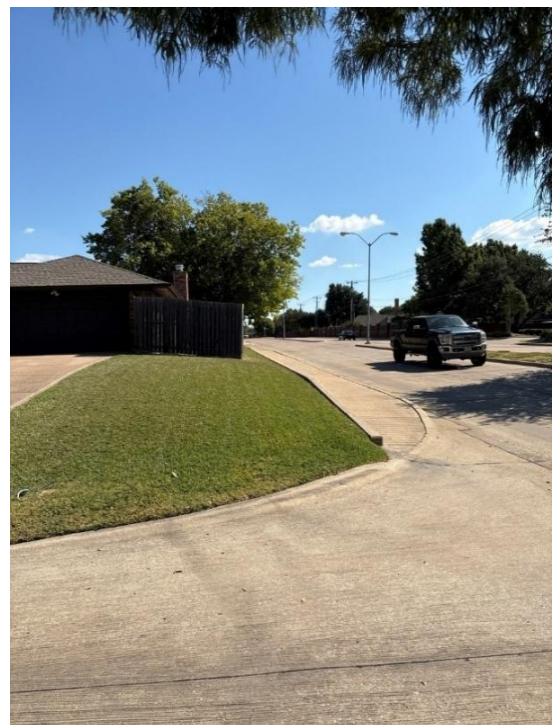


Figure 22. Relocate Fence



5. E BROAD STREET

The section of E Broad St. from N Mitchell Rd. to N Miller Rd. spans 1.89 miles. This arterial segment carries an average 21,400 cars daily. In this segment of East Broad Street, it is a six-lane divided roadway that transitions to a four-lane divided roadway. There are posted speed limit signs of 45 mph. During the study period there were 290 total crashes. 4 resulted in suspected serious injuries and 52 suspected minor injuries. There were 290 crashes during the study period of 2020-2024. Of these crashes, there were no fatalities, and 4 resulted in serious injuries (A), 52 in minor injuries (B). Pedestrians or bicyclists were involved in 3 crashes.

CORRIDOR WIDE AND SEGMENT OBSERVATIONS AND RECOMMENDATIONS

McAlister's' Driveway (Between Regency Pkwy. and Cannon Dr.)

➤ Install Dual-Hooded Left Turn Lane

Currently, the sight distance is poor. It is recommended to install a dual-hooded left turn lane for the eastbound and westbound turn lanes.

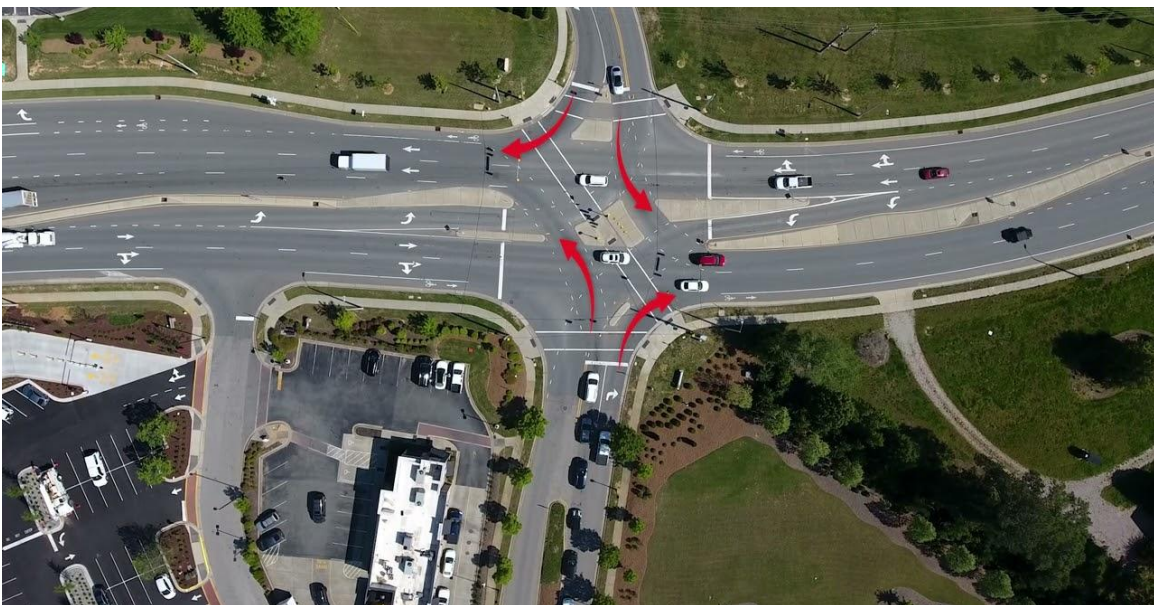
INTERSECTION OBSERVATIONS AND RECOMMENDATIONS

Broad St. and N Mitchell Rd.

➤ Thru-Cut Intersection, Restrict Thru Movement

There is an existing traditional 4-way traffic signal. It is recommended to convert this signal into a signalized thru-cut intersection to prevent angled crashes. A thru-cut intersection is similar to a hooded left-turn median opening; however, it also allows left turns from the minor road.

Figure 23. Thru-Cut Intersection



➤ **Add “Yield to Pedestrian” Signage and Markings**

There is currently no indicator of pedestrians. It is recommended to add a Yield sign. This sign acts as a visual cue, making drivers more aware of potential pedestrian activity, especially in areas with high foot traffic or where pedestrians might be less visible.

Broad St. and Regency Pkwy.

➤ **Protected Right Turn with Flexi-Posts**

Flexi-posts create a physical barrier that clearly delineates the protected right turn lane, reducing the likelihood of motorists encroaching into the lane from adjacent lanes. This improves safety by separating turning traffic from through traffic more effectively. It is recommended to create a protected right-turn lane.

(Figure 24)

➤ **Add Lighting**

Proper lighting makes pedestrians and vehicles more visible to each other, reducing the likelihood of accidents, particularly during nighttime or low-light conditions. It is recommended that lighting be added to the south leg.

Broad St. and Cannon Dr.

➤ **Upgrade to Flashing Yellow Arrow**

Currently, the left-turn lane has signage to yield on green. However, it is recommended to upgrade the signal to flashing yellow arrow to be more apparent to drivers to yield on the left turn. (Figure 25)

Broad St. and Matlock Rd.

➤ **Add Retroreflective Backplates**

It is recommended to add retroreflective backplates to the existing signals. This enhances visibility for road users, reducing crash risk, and enhancing safety for all road users. (Figure)

Figure 24. Protected Right Turn with Flexi-posts for Westbound Vehicles



Figure 25. Upgrade Signage to Flashing Yellow Arrow



➤ **Add Tattletale Lights**

Red light running has been observed in this area. To make the area safer, tattletale lights or additional forms of enforcement are recommended to indicate that there is a red light.

Broad St. and N Miller Rd.

➤ **Upgrade to Directional Ramps**

Directional curb ramps are recommended to improve accessibility and ensure compliance with ADA standards. These ramps will provide safe and convenient transitions between sidewalks and crosswalks for pedestrians, including those using wheelchairs, strollers, or other mobility aids.

(Figure)

➤ **Protected Left Turn Lane**

By providing a designated lane for left-turning vehicles, conflicts with oncoming traffic, pedestrians, and cyclists are reduced, lowering the likelihood of accidents. (Figure)

➤ **Add Retroreflective Backplates**

It is recommended to add retroreflective backplates to the existing signals. This enhances visibility for road users, reducing crash risk, and enhancing safety for all road users. (Figure)

Figure 31. Upgrade to Directional Ramps



Figure 32. Convert to Protected Left Turn Lane and Add Retroreflective Backplates



6. CANNON DRIVE

The Cannon Dr. section from E Broad St. to E Broad St. spans 1.70 miles. This corridor is a four-lane divided roadway that transitions to a two-lane undivided. This segment is connected to one major throughfare – N Miller Rd. Cannon Dr. is primarily residential. There is a High School, an Elementary School, and some neighborhood retailers also along the corridor. There is a posted speed limit of 40 mph. This is a collector roadway that carries an average volume of 5,200 vehicles daily. During the study period, there were 170 crashes that occurred during the study period, 2020-2024, along the East Broad St. corridor. Of these crashes, 0 fatalities (K) occurred, 5 resulted in serious injuries (A), and 36 resulted in minor injuries (B). A pedestrian or bicyclist was involved in 1 crash.

CORRIDOR WIDE AND SEGMENT OBSERVATIONS AND RECOMMENDATIONS

Broad St. to Broad St.

➤ **Stripe Crosswalks on Named Roadways**

To increase pedestrian safety, it is recommended to stripe crosswalks. This helps guide pedestrians to the safest crossing points, reducing the likelihood of them crossing at unsafe, unmarked locations. This will also alert drivers to expect pedestrian traffic.

➤ **Refresh Striping**

It is recommended to restripe the entirety of the corridor to improve lane alignment, enhance traffic flow, and increase safety for all users.

➤ **Install Sidewalks throughout the Corridor**

It is recommended that sidewalks be created along the corridor to improve pedestrian safety. This would create a safe, designated space for pedestrians to walk.

Matlock Rd. to Creekwood Dr.

➤ **Update to 3-Lane Undivided**

The existing lanes are wide compared to a typical lane, which may encourage drivers to speed. It is recommended to restripe Cannon Dr. to be three 12-foot lanes, providing a two-way left-turn lane in the center. This will also add the benefit of allowing left-turning vehicles to move out of the thru-lane, improving traffic flow.

Pavillion at Creekwood to Creekwood Dr; from Creekwood Dr. to Canon Dr. Extension

➤ **Add Sidewalks**

Sidewalks provide a designated space for pedestrians, keeping them separated from vehicular traffic and reducing the risk of collisions. It is recommended to add sidewalks along the corridor.

Cannon Dr. Extension to Broad St.

➤ Add Lighting

Proper lighting makes both pedestrians and vehicles more visible to each other, reducing the likelihood of accidents, particularly during nighttime or low-light conditions. To reduce the number of crashes, it is recommended to install additional lighting.

INTERSECTION OBSERVATIONS AND RECOMMENDATIONS

Cannon Dr. and Broad St.

➤ Upgrade to Flashing Yellow Arrow

Currently, the left-turn lane has signage to yield on green. However, it is recommended to upgrade the signal to flashing yellow arrow to be more apparent to drivers to yield on the left turn. (Figure 26)

Cannon Dr. and Carlin Rd.

➤ Add Lighting

Proper lighting makes both pedestrians and vehicles more visible to each other, reducing the likelihood of accidents, particularly during nighttime or low-light conditions. To reduce the number of crashes, it is recommended to install additional lighting.

Crosswalk at Willie Brown Elementary

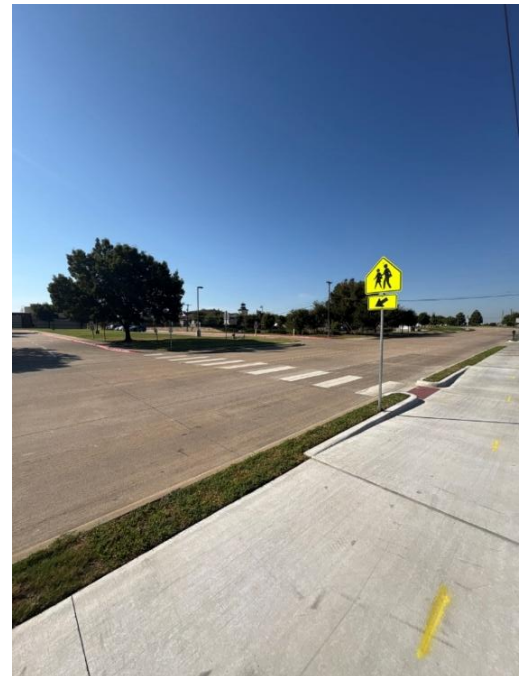
➤ Install Rectangular Rapid Flashing Beacon

To create a safer crossing for pedestrians, it is recommended to install a Rectangular Rapid Flashing Beacon, allowing pedestrians to have a designated crossing space. Flashing beacons also draw attention to pedestrian crossings, making them more visible to motorists, especially in low-light conditions or areas with high traffic volumes such as on Cannon Dr. with a volume of 5,200. (Figure 27)

Figure 26. Replace Signage for Flashing Yellow Arrow



Figure 27. Upgrade Signage to Rectangular Rapid Flashing Beacon



Cannon Dr. and Matlock Rd.

➤ **Add Retroreflective Backplates**

It is recommended to add retroreflective backplates to the existing signals. This enhances visibility for road users, reducing crash risk, and enhancing safety for all road users.

➤ **Add Flashing Yellow Arrow**

A flashing yellow arrow clearly communicates to drivers that they must yield to oncoming traffic and pedestrians before making a left turn, reducing the likelihood of collisions compared to traditional green ball signals. It is recommended to add a flashing yellow arrow at this intersection. (Figure 28)



Figure 28. Flashing Yellow Arrow Needed

➤ **Upgrade to Directional Ramps**

Directional curb ramps are recommended to improve accessibility and ensure compliance with ADA standards. These ramps will provide safe and convenient transitions between sidewalks and crosswalks for pedestrians, including those using wheelchairs, strollers, or other mobility aids. (Figure 36)

➤ **Install Protected Left Turn Lane**

Sight distance at this intersection is poor. It is recommended to add a protected left turn to make a safer turn since there is limited visibility. By providing a designated lane for left-turning vehicles, conflicts with oncoming traffic, pedestrians, and cyclists are reduced, lowering the likelihood of accident. (Figure 37)



Figure 36. Upgrade Directional Ramps



Figure 37. Install Protected Left Turn Lane

Cannon Dr. and Miller Rd.

➤ Install Mini- Roundabout

To slow traffic speed and improve traffic flow, it is recommended to install a mini-roundabout. This intersection being 3-legged, a mini roundabout will offer a more organized way for traffic to follow and encourage vehicles to slow down as they navigate. This is particularly useful with the intersection being in a residential area, ensuring a safer space for pedestrians as well. (Figure 29)



Figure 29. Install Mini-Roundabout

Crosswalk by High School at Arbors Dr.

➤ Upgrade to Rectangular Rapid Flashing Beacon

To create a safer crossing for pedestrians, it is recommended to install a Rectangular Rapid Flashing Beacon, allowing pedestrians to have a designated crossing space. Being near a high school with lots of pedestrians, this is especially important. Flashing beacons also draw attention to pedestrian crossings, making them more visible to motorists, especially in low-light conditions or areas. (Figure 30)

➤ Relocate Fence

The fence currently blocks the sight distance looking east. It is recommended to relocate the fence to improve sight distance. (Figure)



Figure 30. Upgrade to Rectangular Rapid Flashing Beacon



Figure 40. Relocate Fence



Figure 41: Steep Grading, Install Roundabout

Cannon Dr. and Creekwood Dr.

➤ Install Roundabout

Steep grading currently exists at this intersection, causing poor sight distance for southbound traffic (Figure). It is recommended to install a roundabout here to mitigate the likelihood of speeding and establish a traditional intersection at Creekwood Dr. A roundabout would efficiently reduce speeding at this location while also providing additional land currently occupied by the eastbound right slip lane.

Cannon Dr. and Cannon Dr.

➤ Install Dual-Hooded Left Turn Lane with Flexi-posts

Currently, there is poor sight distance looking North (Figure 31). To enhance safety for left turns, it is recommended to install a dual-hooded left-turning lane with flexi-post. A dual-hooded left-turning lane guides vehicles into the turning lanes. The addition of flexi-posts further enhances safety by providing a flexible yet durable barrier that helps to clearly delineate the lanes, preventing improper lane changes.



Figure 31. Install Dual-Hooded Left Turn

