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Federal Highway Administration

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September 18, 2025

In Reply Refer To:
HDA-TX

Mr. Keith Brooks, Director of Public Works
Ms. Alicia Winkelblech, Director of Transportation
City of Arlington
101 W. Abram Street,
Arlington, TX 76010

Dear Mr. Keith and Ms. Alicia,

Enclosed for your use is the Center Street and Cooper Street Pedestrian and Bicycle Road Safety Assessment conducted by the Federal Highway Administration with assistance from the North Central Texas Council of Governments and other local partners. The report includes several recommendations for improving pedestrian and bicyclist safety along Center Street and Cooper Street from Randoll Mill Road to Division Street. Thank you for the City's interest in improving pedestrian safety for these corridors, hosting the assessment, and providing the staff from multiple departments.

Sincerely,

Ed Burgos,
Safety and Traffic Operations Specialist
FHWA Texas Division

cc:
Daniel Burnham, City of Arlington
Kevin Kokes, NCTCOG
Catherine Richardson, NCTCOG

Road Safety Audit
Center Street and Cooper Street
Arlington, TX

DECEMBER 2024

Facilitated by: Amelia (Millie) Hayes, P.E., PTOE, RSP_{2I}
FHWA Texas Division

U.S. Department of Transportation
Federal Highway Administration

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Background

In 2021 the North Central Texas Council of Governments (NCTCOG) and the Federal Highway Administration (FHWA), along with regional stakeholders, created a regional Pedestrian Safety Action Plan (PSAP) that was adopted by the Regional Transportation Council. Texas is a FHWA pedestrian Focus State and Dallas and Fort Worth were Focus Cities until the late 2021. As part of the PSAP efforts to improve pedestrian safety throughout the NCTCOG region, pedestrian safety focused Road Safety Audits (RSA) were identified as a tool to help road owners identify possible improvements along priority corridors. FHWA agreed to facilitate several RSAs under the Focused Approach to Safety, including the Cooper Street and Center Street corridors in Arlington.

The FHWA Office of Safety established RSAs to improve the overall safety performance of roadways. An RSA is a comprehensive formal safety performance evaluation on an existing or future road segment or intersection performed by an independent and multidisciplinary team. RSAs are a low-cost proactive approach to safety that considers all road users and identifies opportunities to enhance safety and reduce the number and severity of crashes. A pedestrian-focused Road Safety Audit is a specialized type of RSA intended to focus on pedestrian safety issues. In addition to pedestrians, the RSA documented here also considered safety and operational conditions for motor vehicles, bicyclists, and transit vehicles, and other users.

The RSA was conducted from February 28 to March 3, 2023.

Road Safety Audit Team

- City of Arlington:
  - Manisha Joshi
- TxDOT:
  - Anthony White
- FHWA:
  - Ed Burgos
  - Stephen Ratke
  - Amelia (Millie) Hayes

Figure 1: RSA Team

RSA Location

Figure 2: Cooper and Center Streets location map.

The corridors are located in central Arlington. North Cooper Street and North Center Street are thoroughfares that extend through much of Arlington; however, our RSA Team limits were between Randol Mill Road to the north and Division Street (SH 180) to the south due to time limitations. On Cooper Street, the uses along the street are mixed but mainly commercial on the north and south ends, with mostly single-family residential uses in the middle with some multi-family units. Cooper Street generally has three lanes in each direction with a raised median. North Center Street acts as a southbound one-way (coupled with Mesquite Street as northbound one-way just one block to the east). The uses along Center Street are mainly residential, with multi-family residential on the north end, schools on north end and middle, with business district on the south end just beyond our RSA limits. Center Street generally has three lanes.

Kickoff Meeting

The kickoff meeting for the RSA was held at the Arlington Public Library on Tuesday, February 28, 2023 at 9am. The meeting included staff from the City of Arlington Department of Transportation and Public Works, Arlington Police Department, TxDOT, and FHWA. The list of attendees is in Appendix A. FHWA began the meeting by providing a refresher on RSAs and explaining how the RSA would be conducted. FHWA presented on the pedestrian safety focused RSAs being led by NCTCOG. City of Arlington presented information about the Cooper Street and Center Street corridors for the RSA Team to consider. An open discussion with all attendees was then conducted, which gave the Team more specifics to consider during the review.

Figure 3: Kickoff meeting attendees

Site Visits

The following site visits were conducted:

Tuesday, February 28:

- Lunchtime observations (includes Speer Elementary School lunchtime observations from 11:30pm to 12:30pm)
- Corridor drive through from 1:30pm to 2:30pm
- Afternoon and PM peak observations from 3:15pm to 6pm (includes Speer Elementary school dismissal observations from 3:15pm to 4:15pm)
- Night observations from 7:30pm to 9:30pm

Wednesday, March 1:

- AM peak observations from 7am to 9:15am (includes Speer Elementary school arrival observations from 7:15am to 8:30am)
- Lunchtime observations from 11:30am to 1pm (includes Kooken Elementary School lunchtime observations from 11:30 am to 11:45am, and 12:10pm to 12:30pm)

- Afternoon and PM peak observations from 3:15pm to 4:30pm (includes Kooken Elementary school dismissal observations from 3:25pm to 4pm)

Thursday, March 2:

- AM peak observations from 7:30am to 10am (includes Kooken Elementary school arrival observations from 7:30am to 9:20am)
- Corridor drive through from 10am to 10:15am

Closeout Meeting

A closeout meeting was held at the Arlington Public Library on Friday, March 3 at 10am. The RSA Team reviewed the observations made in the field and covered the most important recommendations for feedback from City representatives, along with information the Team requested feedback on to develop the final report. During the closeout meeting, no major issues were identified by the City, and the results of the recommendations are detailed in this report.

Figure 4: Closeout meeting attendees

The Positives

While the Cooper Street and Center Street corridors were identified for an RSA due to concerns about pedestrian and bicyclist safety, it is important to note that there are many positive aspects to the corridor that help it function well in providing an important transportation link in the City of Arlington. Few congestion or capacity issues were observed during peak periods. The RSA Team observed signal optimization, with good vehicle progression throughout the corridor.

Many pedestrians were observed using the corridor, particularly traveling between multifamily residential and retail/commercial buildings in the area. Sidewalks were continuous, and some locations had approximately 3 feet of buffer between sidewalk and roadway. One location had leading pedestrian intervals (LPI), which is an FHWA Proven Safety Countermeasure and best practice.

Signs were visible and well maintained. During the night review, signs were very visible and retroreflective. Lighting of the roadway overall was good, with minimal interference from trees and other vegetation.

Primary Concerns

As identified in the selection of the RSA location and the kickoff meeting, the primary concern for this corridor is the occurrence of motor vehicle crashes with pedestrians and bicyclists. A map of pedestrian and bicyclist crashes in the area is shown below.

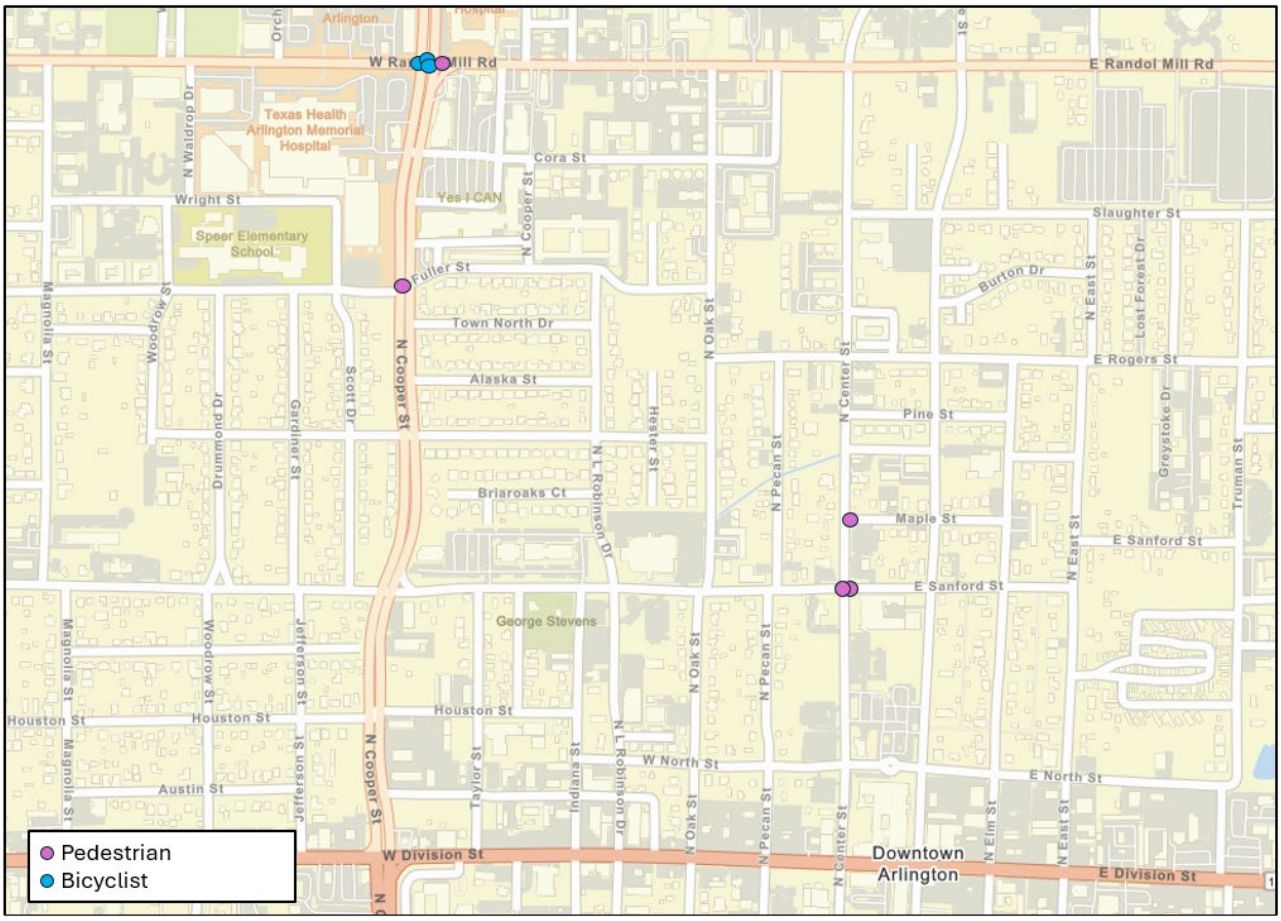

Figure 5: Pedestrian and Bicyclist crash map of the corridor. (Source: TxDOT Crash Record Information System, 2013 - 2022)

As shown in the map above, pedestrian crashes are overrepresented at Cooper/Randol Mill and bicycle crashes are overrepresented on Cooper Street. In the kickoff meeting and in subsequent interviews, the RSA Team heard feedback that driver speeding was prevalent in both Cooper and Center Street corridors, and that drivers often did not yield to pedestrians even in marked crosswalks within active school zones. The RSA Team also heard feedback that bicyclists often avoid Center and Cooper Streets corridors when possible due to safety and comfort concerns, but the location of certain destinations (e.g. grocery stores and other retail near Cooper/Randol Mill) often required some travel on Cooper Street.

During our field reviews, the RSA Team also observed drivers traveling over the posted speeds. Speeding become more prevalent since 2020. During the COVID-19 pandemic, many areas experienced decreased traffic volume due to lockdowns, remote work, and reduced commuting. Lower traffic density can sometimes lead to increased speeding as drivers feel less constrained by other vehicles.

Following our field reviews, the RSA Team conducted a review of Texas Peace Officer's Crash Reports (CR-3s) of the pedestrian and bicyclist crashes in the corridors. The trends that we found in the CR-3s generally were consistent with our observations and did not change our recommendations and are explained further when applicable below.

General Recommendations

The RSA Team identified several recommendations for the entire Cooper Street and Center Street corridors based on the primary concerns identified above and other observations identified during the RSA. The recommendations below are presented in no order of priority but do note the relative expected timeline for implementation:

- Consider implementing speed management practices. In the kickoff meeting and in subsequent interviews, the RSA Team heard feedback that most drivers tend to exceed the posted speed of 35 miles per hour. To improve pedestrian and bicyclist safety, agencies need to be able to control speed. Drivers are much more likely to yield to pedestrians at lower speeds, and pedestrians can more easily judge gaps to cross at slower speeds. In the event of a crash, lower speeds decrease the likelihood of death or serious injury of all users, particularly pedestrians and bicyclists. The City should consider best practices below to manage speed.
    - Consider adopting a Safe System Approach. The Safe System Approach aims to eliminate fatal and serious injuries for all road users, through a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels. From a roadway infrastructure perspective, a Safe System Approach involves managing the circumstances of crashes such that the kinetic energy imposed on the human body be kept at levels that are tolerable in terms of survivability and degree of harm. Mixing uses between high-speed vehicular traffic and walking/biking violates a Safe System Approach.
    - At a network level, the City must decide which streets are needed to give more priority to people walking and biking (and thus slower speeds) and

those where motor vehicles may have more priority (where investments in separating walking and biking from the roadway may be required).
    - Observations and comments were very consistent about speed issues on both corridors but are also not unique to the City's arterial streets. Solutions should be considered at a network level approach, which could be undertaken within the City's Safe Streets and Roads for All (SS4A) funded planning grant.
    - More tailored recommendations for each corridor will follow later in the report, but in general, recent research highlights how the road "look and feel" influence the speed that drivers select. Key factors include:
        - Presence of people outside vehicles
        - Perceived width of the roadway at the driver's eye height
        - Distance from the roadside to buildings, number of doors, other indicators of activity
- Consider crosswalk improvements at intersections. The City should consider the following improvements for pedestrian expectancy and accessibility.
    - Consider TxDOT's new standard for right-turn islands. At some intersections, drivers turning right turned at high speeds. Due to the high speeds and longer crossing length in these locations, the RSA Team observed pedestrians having difficulties in crossing. During future improvement projects, the City could also consider TxDOT's new standard for right-turn islands, which tightens the right-turn and provides improved visibility for crossing pedestrians. The new standard also features hatching and pavement markings for passenger vehicle paths, while overall curb return allows for truck off-tracking. Timeline: Long-term.

Figure 6: Design of right-turn islands like this one (southeast corner of Center Street and Randol Mill Road) allow for high-speed turns with reduced yielding to pedestrians

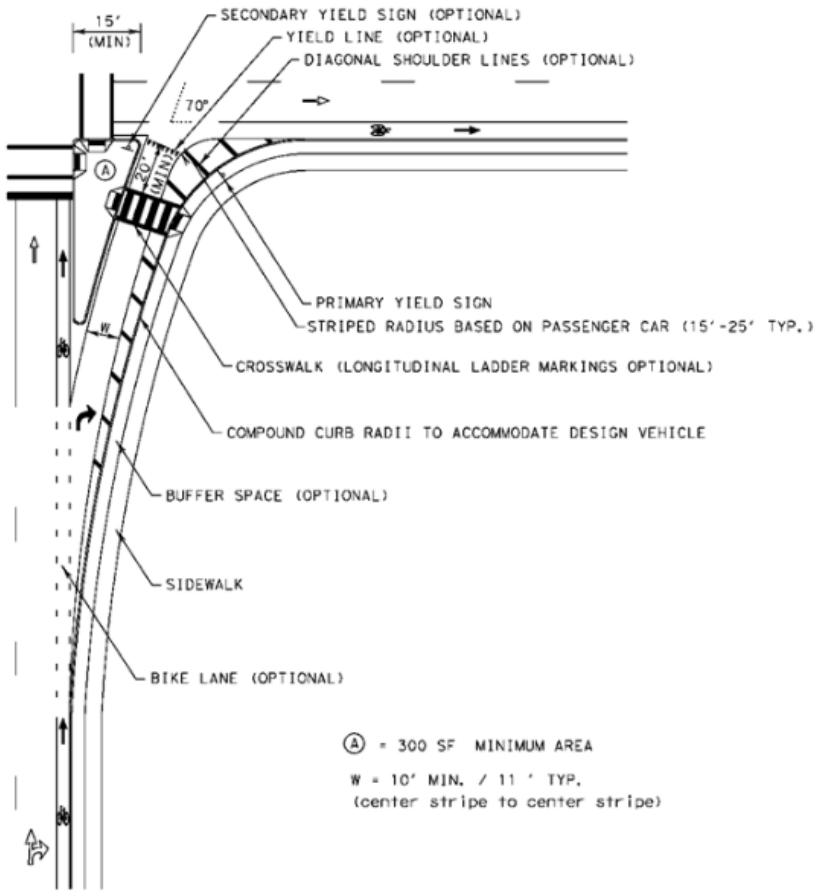

Figure 7: Right-turn slip lane design (TxDOT)

- Consider raised crosswalks. The City should also consider raised crosswalks at these locations to slow turning vehicles. Raised crosswalks of even 2 to 3 inches in these locations could help control speed of turning movements and emphasizes the need to yield to people walking. Raised crosswalks have been successfully implemented in several locations in Austin and are becoming a more regular treatment for speed management and pedestrian safety across the US. Timeline: Medium-term.

Figure 8: Example of a raised crosswalk on a turn lane joining an Interstate frontage road in Austin, TX (Source: Google Street View)

- Consider continental pavement markings. Several marked crosswalks present are the old standard of two transverse lines. For TxDOT's roadways, the most current TxDOT standard for crosswalk pavement markings is the longitudinal crosswalk markings (continental style) which have higher visibility and help drivers detect pedestrians – particularly at night. During future projects (resurfacing or restriping), install high-visibility longitudinal crosswalk pavement markings, per TxDOT traffic standard PM(4)-20 and City of Arlington's Uniform Traffic Control Devices Policy Manual. Consider developing a process for determining where to use continental style striping in areas other than school zones. Timeline: Short- to medium-term.
- Consider increased WALK times. At many intersections, pedestrian WALK intervals were less than 7 seconds. The City should allow for WALK signals of at least 7 seconds per the Manual of Uniform Traffic Control Devices (MUTCD). Timeline: Short-term.
- Consider wider crosswalks. Most locations appeared to have crosswalk widths of the 6-foot minimum. Other locations would benefit from even

wider crosswalks that encompass more of the walking paths and approach pavement of the sidewalk. Timeline: Short-term.

- Consider lighting improvements to enhance pedestrian visibility. This could include improvements to light pole placement and use of positive contrast. In design of lighting systems, contrast is the measurable visible difference between a target and the target's background. Positive contrast results in the target being brighter than its background and negative contrast results in the target being darker than its background, as illustrated in Figure 9. See FHWA's Pedestrian Lighting Primer and FHWA's Informational Report on Lighting Design for Midblock Crosswalks for additional information regarding proper light pole location. In the RSA Team's review of crash reports, we observed that right-turn crashes at Randol Mill/Cooper Street were caused by drivers failing to yield right-of-way to pedestrians. Lighting improvements, particularly a positive contrast of the pedestrians struck within crosswalks, would have helped addressing the vulnerability of pedestrians during dark conditions and improving the safety and security of all road users spanning different ages and abilities. Timeline: Medium-term.

Figure 9: Negative versus positive contrast (Source: FHWA Pedestrian Lighting Primer, 2022.)

  - Install marked crosswalks at some locations. Marked crosswalks were not provided in some locations, particularly Center/Division. The RSA Team observed people crossing in all the locations without a marked crosswalk. Pedestrians have a reasonable expectation for traditional intersections with marked crosswalks across all legs. Timeline: Short-term.
- Refresh pavement markings. In some locations, pavement markings were minimal or not visible, particularly at night. Refreshing the pavement markings, especially at Cooper Street/Randol Mill Road, would better inform drivers. Timeline: Short-term.
- Consider redesign of sidewalks across driveways to encourage driver yielding to pedestrians. Throughout the corridor, the sidewalks ramp down to street level at driveways. This creates a "rollercoaster effect" for pedestrians. The design prioritizes vehicle movement and allows for turns at high speeds, which decreases likelihood of drivers yielding to pedestrians. Timeline: Long-term.

Figure 10: Driveway design resembling intersection at Cooper/Fuller

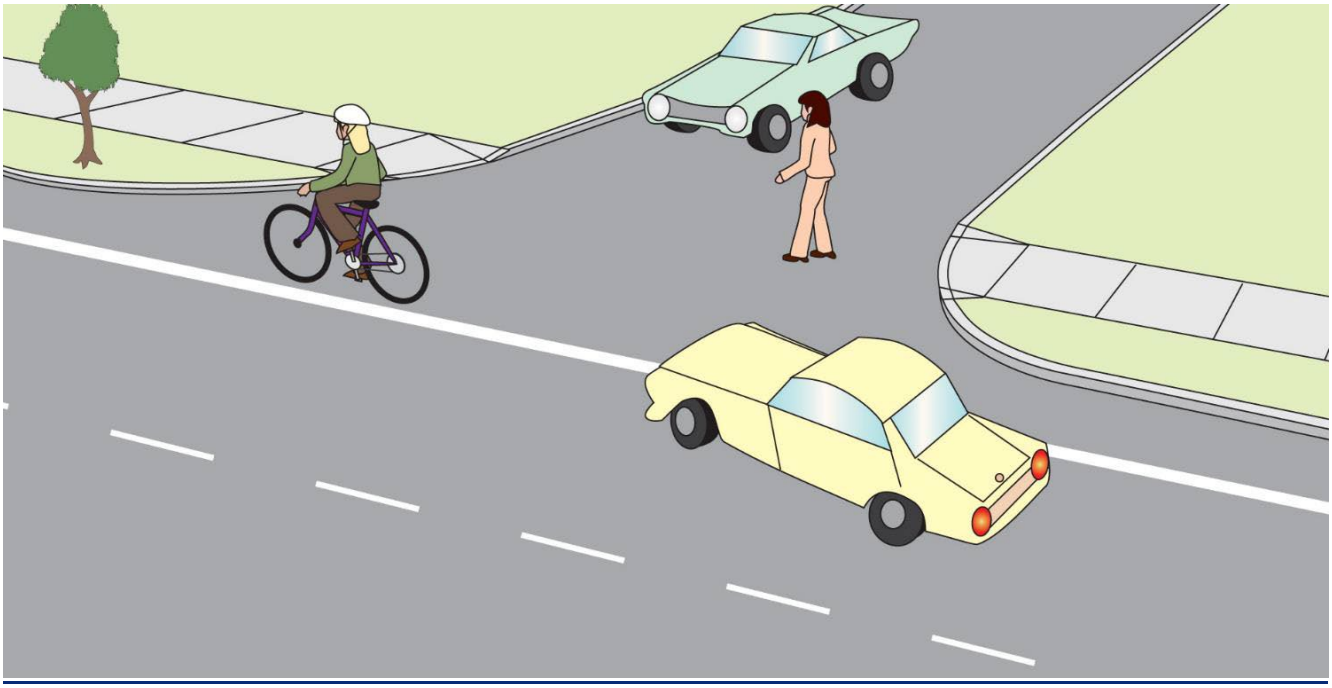

Figure 11: Driveways built like intersections encourage high-speed turns (Source: FHWA)

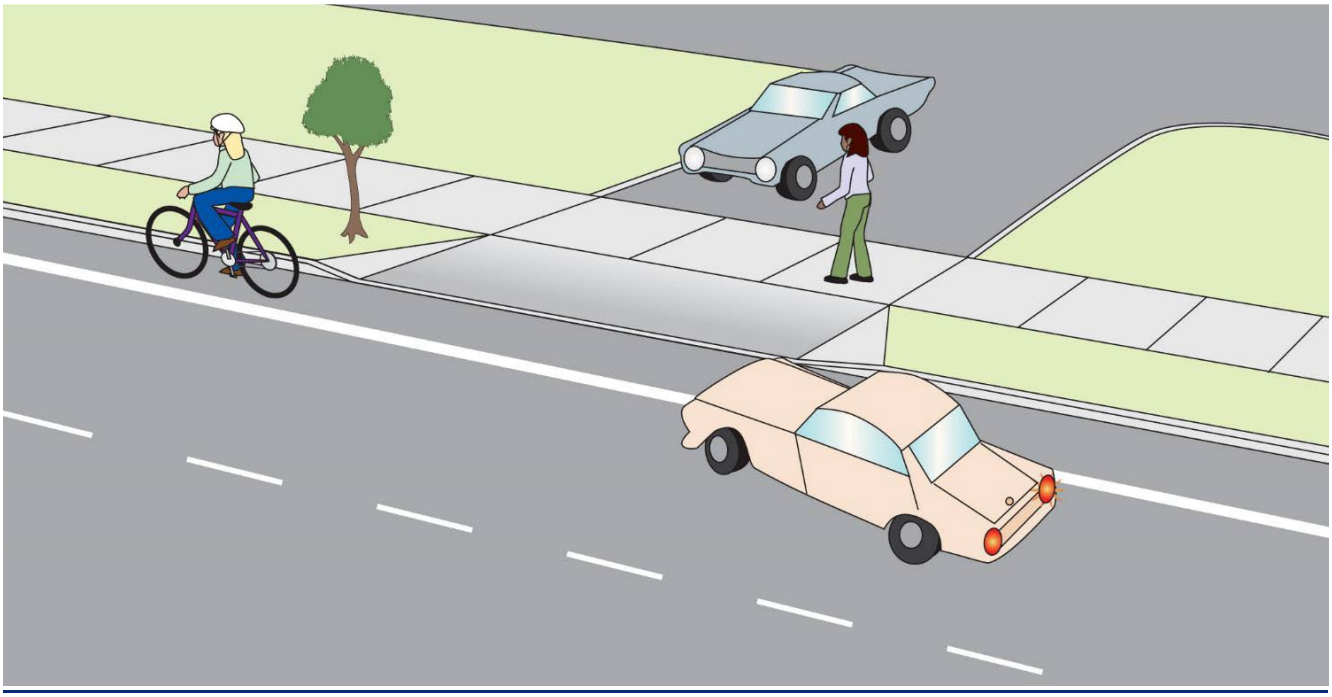

Figure 12: This design makes it clear to drivers that they are crossing a sidewalk and encourages low-speed turns (Source: FHWA)

- Upgrade accessibility to current standards. The corridor is primarily served by diagonal single curb ramp designed corners, while dual ramp directional designs are now preferred. Some locations appeared particularly outdated. Additionally, the sidewalks should be a minimum of six feet wide, free of obstructions, with wider areas needed when businesses front the street closely. Some of the pushbuttons are not fully accessible, with locations that are out of the way, at inappropriate height, or lack a level landing area. Timeline: Medium- to long-term.

Location Specific Issues and Recommendations

Location: Cooper Street

Cooper Street generally has three lanes in each direction with a raised median. The RSA Team observed higher speeds as traffic flowed relatively freely from Randol Mill Road to Division Street (Sanford Street signal appeared synced with Division Street). Pedestrian activity was highest on the northern portion of the corridor and was consistent during the various times of our field reviews. As discussed in the General

Recommendations section above, the “look and feel” of the corridor resembled a higher speed facility, particularly in more open stretches like the west side south of Fuller Street, where the native prairie restoration area is present.

- **Observation**: Many bicycle users were observed throughout the corridor, with usage ranging from taking a lane or riding on the sidewalk. Nearly all bicyclists chose to use the sidewalk except when needing to pass other cyclists or pedestrians.

Figure 13: With other users on the sidewalk, pedestrians and cyclists trying to pass didn't have enough space to do so on the sidewalk and often passed in this manner

Recommendation: Determine preferred bicycle accommodation. Consider changes to cross-section that include a high quality separated bike facility per FHWA’s Bikeway Selection Guide. As discussed in the General Recommendations, at a network level, the City must decide which streets are needed to give more priority to people walking and biking (and thus slower speeds) and those where motor vehicles may have more priority (where investments in separating walking and biking from the roadway may be required).

Considering stakeholder feedback and the Bikeway Selection Guide, the City should determine its preferred bicycle accommodation type. With the available space observed in the field, the following could be preferred alternatives over the current shared use lanes, in increasing order of protection and safety for vulnerable road users:

- One 10 ft sidewalk/sidepath, or
- One 10 ft sidewalk/sidepath with separation of ~5 ft, or
- Add trees in the separation (and/or other landscaping that can influence slower speeds by drivers by creating visual friction)

The RSA Team's review of crash reports supports our recommendation for a wider facility to help cyclists. The majority of the bicyclist crash reports reviewed were on the east side of Cooper Street, and most use we saw during our field reviews was also on the east side. However, the City should study further and consider the larger network in determining the exact location.

Figure 14: Example of separated bike lane option recommended with 5-6 lane roadway section (Source: Active Tyler: Active transportation Plan for the Tyler, TX Area MPO)

- **Observation**: The pedestrian phases parallel to Cooper rest in DON'T WALK. **Recommendation**: The City should consider pedestrian phases parallel to Cooper on recall. The City should consider configuring pedestrian phases on recall for all crosswalks parallel to Cooper Street, which would allow pedestrians to have a WALK intervals during every cycle. Ideally, the City should extend the WALK and flashing DON'T WALK clearance to take the entire minimum green time of every phase for Cooper in the cycle. It appears that the vehicular green is long enough in most cycles that a pedestrian phase would fit without constraining the signal cycle length, so there would be no negative impacts to vehicular traffic. Timeline: Short-term.

Location: Cooper Street at Randol Mill Road

Approaching Randol Mill Road intersection, Cooper Street has three through lanes in each direction, and double left-turn lanes and right-turn lane in each direction. Randol Mill Road has two lanes in each direction, and the intersection approaching Cooper Street also has right- and left-turn lanes in each direction. The RSA Team generally observed higher speeds in this location.

- **Observation**: The RSA Team's discussions with Arlington PD indicated that there are drainage issues on southbound Cooper Street, in the #3 lane approaching Randol Mill Road. Per Arlington PD, the ponding is particularly an issue when colder temperatures create icy conditions in this lane. **Recommendation**: The RSA Team did not observe this directly, but the City should look further into this issue.
- **Observation**: The RSA Team observed few drivers yielding to pedestrians at this intersection, particularly at westbound Randol Mill Road to northbound Cooper Street movement. The RSA Team's review of crash reports found that all but one pedestrian crash at this intersection was at this quadrant. **Recommendation**: As discussed in the General Recommendations section above, the City should consider right-turn island similar to the new TxDOT design, in combination with raised crosswalk, to slow turning vehicles and improve yielding to people walking. As discussed in the General Recommendations section above, the City should consider lighting improvements to enhance pedestrian visibility. Timeline: Medium-term if Randol Mill project extends to this intersection, otherwise medium- to long-term.
- **Observation**: The Right Turn Only sign was missing on the westbound approach. Also on the westbound approach, a sign post was empty, and it was unclear what sign wasn't present. The Cooper St Next Signal sign was missing on the eastbound (a sign was present on the westbound approach but not eastbound). North of Randol Mill Road, the Signal Ahead sign southbound was off-center, and a light pole heavily leaning toward roadway. **Recommendation**: Install missing signs and ensure they are placed correctly.
- **Observation**: The RSA Team observed pedestrian accessibility issues. The westbound pedestrian countdown timing not being shown (shown on eastbound

movement but not on westbound movement). Upraised hand signal had LED bulbs missing or not working correctly. The pedestrian pushbutton on the northwest corner of the intersection was very high. The City had recognized the safety benefits of Leading Pedestrian Intervals (LPIs) which were observed in this location; however, there are additional accessibility concerns that should be considered. **Recommendation**: The City should improve ped accessibility in this location by repairing countdown on ped signals and relocating pushbuttons. If the LPI phase and walk phase entirely precedes the adjacent green through signal phase, accessible pedestrian signals may be required so that people who are blind or visually impaired are able to have an audio cue on when to start crossing.

- **Observation**: Pavement markings were faded. Lane arrow pavement markings bad, especially for Right-Turn Only lanes Pavement markings on the concrete sections are especially difficult to see, and in poorer condition than the asphalt patch in that location. **Recommendation**: The City should refresh pavement markings. Given the higher prevalence of pedestrian crashes at this intersection during our RSA Team's crash report review, the City might also consider continental striping of the crosswalk to increase visibility. Since concrete sections in this location are in poorer condition than adjacent asphalt patch, the City should verify that concrete is being prepared correctly prior to pavement marking installation.

Location: Cooper Street at Fuller Street

At the intersection, Cooper Street is three lanes with one left-turn lane in each direction. A marked crosswalk is present on the north side of the intersection to cross Cooper Street. Fuller Street is one lane in each direction at its crossing with Cooper Street and is stop-controlled on the Fuller Street approaches. Marked crosswalks are present on the east and west sides of the intersection to cross Fuller Street.

Speer Elementary School is located one block west of the northwest quadrant of the intersection, adjacent to a City-owned surface parking lot. Single-family residential was mostly located on the west of Cooper Street, and multifamily residential is to the east. The RSA Team observed a steady flow of pedestrians crossing both Cooper Street and

Fuller Street, particularly at school's main morning arrival and main afternoon dismissal. Most school-bound pedestrians appeared to live in the multifamily housing complexes on the east side of Cooper Street and north of Fuller Street. In the vicinity of Speer Elementary School, including on Cooper Street, school zone 20 mph posted speeds are present on school days from 7am to 8:30am, 11am to 12:30pm, and 3pm to 4pm. School zone restrictions for one-way operations are present on school days on Fuller Street between Cooper Street and Woodrow Street between 7am to 8:30am and 3pm to 4pm.

- **Observation**: South of Fuller Street, northbound on Cooper Street has a horizontal curve that made visibility an issue. The RSA Team heard feedback from school crossing guards that visibility of school zone signage may be an issue. Recommendation: Verify whether signage is visible. If there are visibility issues, consider an overhead signage for the crosswalk. Timeline: Short-term.
- **Observation**: The RSA Team observed poor sight distance on WB Fuller due to skew and curve, which causes pedestrian conflicts with drivers intruding into crosswalk. Recommendation: Verify sight distance and consider trimming vegetation. Timeline: Short-term.
- **Observation**: There is no pedestrian refuge for the marked crosswalk on Cooper Street, and pedestrians have seven lanes to cross. The RSA Team observed most drivers failing to yield to pedestrians in the crosswalk. The RSA Team also observed that during school zone hours, the majority of drivers ignored crossing guards' instructions when making U-turns on the north side. **Recommendation**: The City could consider a wider median to provide a full refuge. In the interim, consider other countermeasures such as in-street pedestrian crossing sign (TxMUTCD R1-6) or centerline hardening such as the example in Figure 15. Timeline: Short-term for interim solutions, medium-term for pedestrian refuge.

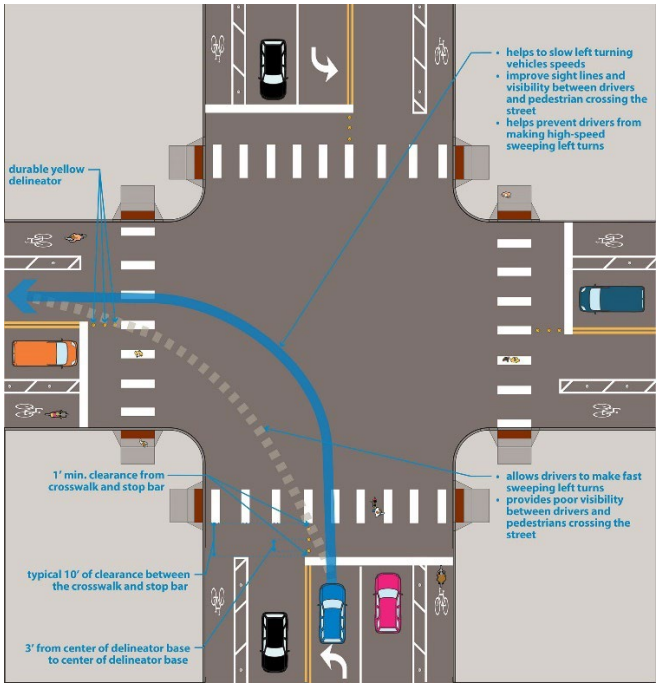

Figure 15: Delineator hardened centerlines (source: City of Minneapolis Street Design Guide)

- **Observation**: During discussions in the field with Speer Elementary staff, The RSA Team learned that a student's injury crash in fall 2022 changed dropoff/pickup procedures to help improve safety for the students. However, school leadership stated that there are recurring issues with driver behavior and requested assistance with enforcement on a random basis. The RSA Team observed traffic circulation issues on Fuller Street due to NO DOUBLE PARKING signs not been heeded, particularly during dismissal times. **Recommendation**: The City should coordinate with Arlington ISD and Speer Elementary regarding this issue. During the discussion, City transportation staff provided their contact information to help connect Speer leadership with appropriate PD staff. Timeline: Short-term.
- **Observation**: In the northwest quadrant of the intersection, a steel plate spanned the drainage inlet to the City's surface parking lot. The steel plate was bowed. **Recommendation**: Replace steel plate to ensure level walking path. Timeline: Short-term.

Location: Cooper Street at Sanford Street

This portion of the corridor is primarily residential, with a county office building on the northeast quadrant of the intersection. At the intersection, Cooper Street is three lanes with one left-turn lane in each direction. Sanford Street has one through lane and one left-turn lane in each direction. The intersection is signal-controlled and marked crosswalks (two transverse lines) are present on all four sides of the intersection. The RSA Team observed a steady flow of pedestrians crossing Cooper Street and Sanford Street.

- **Observation**: The pedestrian phases parallel to Cooper rest in DON'T WALK. **Recommendation**: The City should consider pedestrian phases parallel to Cooper on recall. At this location, pedestrian phases were pushbutton actuated. The City should consider configuring pedestrian phases on recall for all crosswalks parallel to Cooper Street, which would allow pedestrians to have a WALK intervals during every cycle. Timeline: Short-term.
- **Observation**: During night reviews, the southeast corner of this intersection was very dark. **Recommendation**: Verify lighting in this area. Timeline: Short-term.
- **Observation**: Yield sign on NE corner was very faded needs replaced. **Recommendation**: Replace sign no longer meeting retro reflectivity requirements. Timeline: Short-term.
- **Observation**: At this intersection, the only sidewalks present were at the county facility on the northeast corner and a small segment on the northwest corner; continuous sidewalk on Sanford Street was not provided. The RSA Team noted that the sidewalk at the county facility had evidence of drainage issues (sediment had collected on sidewalk). **Recommendation**: Consider adding sidewalk for continuity. Sidewalks should be a minimum of six feet wide and set back with a buffer when possible. Indirect, meandering paths should be avoided; consider straight sidewalks for usability and more direct paths. Timeline: Medium- to long-term.

Location: Cooper Street at Division Street

This portion of the corridor is commercial/retail, with City of Arlington Public Safety Center on the southeast corner of the intersection. Approaching the Division Street

intersection, Cooper Street has three through lanes in each direction, and double left-turn lanes and right-turn lane in each direction. Division Street has two lanes in each direction with a two-way left-turn lane. At the intersection, eastbound Division Street has two through lanes and one right- and one left-turn lane, and westbound Division Street has two through lanes and one left-turn lane. Right-turn islands were present in the southeast and northwest quadrants of the intersection. Just south of the intersection is the Union Pacific Railroad at-grade rail crossing.

- **Observation**: The RSA Team observed the poorest pavement markings in this location. **Recommendation**: Refresh pavement markings. Timeline: Short-term.
- **Observation**: Drivers made right-turns at high speeds, especially in the quadrants with the right-turn islands. The RSA Team observed minimal to no driver yielding to pedestrians. **Recommendation**: From the General Recommendations section above, the City should consider possible raised crosswalks and right-turn island designed to slow speed (30 degrees). Timeline: Medium-term.
- **Observation**: There were conflicts between the Flashing Yellow Arrow and pedestrian WALK maneuver. **Recommendation**: When deploying the Flashing Yellow Arrow, omit on pedestrian WALK maneuver on eastbound and westbound movements. For pedestrian safety, consider protected only when there is a pedestrian call at this and any other Flashing Yellow Arrow locations. Timeline: Short-term.
- **Observation**: Pedestrian WALK phase appeared shorter than minimum 7 seconds in the MUTCD. Recommendation: The City should assess whether the WALK phase is timed correctly. Note that the secondary test (far curb test) may apply for some of the pushbuttons located further away. Timeline: Short-term.
- **Observation:** Westbound Yield sign was incorrectly placed. **Recommendation**: Sign should be slightly moved to appropriate location. Timeline: Short-term.

Location: Center Street

North Center Street acts as a southbound one-way (coupled with Mesquite Street as northbound one-way just one block to the east). The uses along Center Street are mainly residential, with multi-family residential on the north end, schools on north end

and middle, with business district on the south end just beyond our RSA limits. Center Street generally has three lanes.

- **Observation**: Similar to the Cooper Street section, bicyclists were observed throughout the corridor. Despite signage and pavement markings allowing for shared lane use by cyclists, all bicyclists observed chose to use the sidewalk.

  Recommendation: Determine preferred bicycle accommodation. Consider changes to cross-section that include a high-quality bike facility per FHWA Bikeway Selection Guide. As discussed in the General Recommendations, the City should consider the network-level implications, particularly since Center and Mesquite Streets operate in southbound and northbound, respectively. Due to the largely under-capacity conditions observed during the RSA Team's site reviews, the City could consider studying reconfiguration of lanes on Center Street (or possibly Center and Mesquite Streets) while accommodating a bicycle facility within the same footprint. Considering stakeholder feedback and the Bikeway Selection Guide, the City should determine its preferred bicycle accommodation type. With the available space observed in the field, the following could be preferred alternatives over the current shared use lanes:
  - Removing a motor vehicle lane and adding two-way bike facility.
  - Removing a motor vehicle lane and adding a one-way bike lane (southbound bike lane on Center Street with possibly northbound bike lane on Mesquite Street).
  - Converting Center Street to two-way operation and including a bike facility.

Location: Center Street at Randol Mill Road

Just north of this location, outside of our RSA limits, North Center Street carries two-way traffic and splits to carry only southbound one-way traffic. Northbound one-way traffic is carried by North Mesquite Street just one block to the east. At the intersection, commercial buildings are on the north side of Randol Mill with single-family residential further north in the two-way portion. Single-family residential is on

the south side of Randol Mill Road. Center Street has three lanes, and Randol Mill Road has two through lanes and one turn lane to southbound Center Street in each direction.

- **Observation**: The RSA Team observed misaligned center and right lanes when traveling southbound on Center Street through the intersection. **Recommendation**: The City should consider pavement marking extensions through intersections ("puppy tracks") to better guide drivers as they navigate through the intersection. Timeline: Short-term.
- **Observation**: The RSA Team observed multiple instances of wrong-way driving, with drivers turning right from westbound Randol Mill Road onto northbound Center Street. While a westbound Lane Use Designation sign was present on the sign mast, there were also several other signs that might cause the sign to be overlooked by the driver. **Recommendation**: The City should consider additional countermeasures to prevent wrong-way driving in this location, many of which are present in other locations. Possible countermeasures include retroreflective marking on poles holding Do Not Enter signs, light up Do Not Enter signs, refreshed pavement marking arrows, or raised pavement markings with retroreflective red coloring denoting wrong-way movement. Timeline: Short- to medium-term, depending on the possible solution.
- **Observation**: On the northwest side (adjacent to the medical office), there was a significant drop-off present, and water from the parking lot was draining into the roadway. Recommendation: Provide fill material to level up to prevent ponding on the roadway. Timeline: Short-term.
- **Observation**: The RSA Team observed ped accessibility issues. The pedestrian pushbuttons on the southwest side of the intersection were not aligned, and had been installed on the wrong side of pole. **Recommendation**: The City should improve pedestrian accessibility in this location by relocating pedestrian pushbuttons. Timeline: Short-term.
- **Observation**: Sidewalk is discontinuous on portions south of Randol Mill. **Recommendation**: Consider adding sidewalk for continuity. Sidewalks should be a minimum of six feet wide and set back with a buffer when possible. Indirect,

meandering paths should be avoided; consider straight sidewalks for usability and more direct paths. Timeline: Medium- to long-term.

- **Observation**: Just east of the intersection, the westbound Signal Ahead sign for Mesquite was faded (red ball missing, 2000 sign). Additionally, the westbound sign was missing for SH 360 (route marker assembly, shared with IH 30). **Recommendation**: Install missing signs and replace those no longer meeting retro reflectivity requirements. Timeline: Short-term.

Location: Center Street at Sanford Street

Center Street has three lanes, and Sanford Street has one through lane and one turn lane to southbound Center Street in each direction. The intersection is signal-controlled and marked crosswalks (continental) are present on all four sides of the intersection. At the intersection, commercial buildings are on the north side of Sanford Street and west side of Center Street, with single-family residential along Sanford Street. John A Kooken Elementary School is in the southeast quadrant of the intersection. South of the intersection uses are primarily for the school then church and its parking before transitioning to commercial/retail in the business district at Division Street.

The RSA Team observed a steady flow of pedestrians crossing both Center Street and Sanford Street, particularly at Kooken Elementary School's morning arrival, lunchtime dismissal, lunchtime arrival, and afternoon dismissal. Most school-bound pedestrians arrived via vehicle, many of which were parked in the lot north of the Sanford Spa and Salon parking lot on the northeast quadrant of the intersection and crossed Sanford Street at the east crosswalk. Near Kooken Elementary School, including on Center Street, school zone 20 mph posted speeds are present on school days from 7:30am to 8:30am, 11am to 11:45am, 12:15pm to 1pm, and 3pm to 4pm.

- **Observation**: The RSA Team observed pedestrian accessibility issues. The pedestrian pushbutton on the southwest side of the intersection was not operational (the RSA Team did observe the City working on this issue during Wednesday night and Thursday morning field reviews). The pedestrian pushbutton on the northwest side of the intersection was obstructed by

landscaping (rocks). Pedestrian buttons rested in DON'T WALK. **Recommendation**: The City should improve pedestrian accessibility in this location by relocating pushbuttons and removing obstructions. The City should consider configuring pedestrian phases on recall, which would allow pedestrians to have a WALK intervals when allowable time within the phase. Timeline: Short-term.

- **Observation**: SB on Center, tree foliage and banners cover street sign. **Recommendation**: Maintain sign visibility or consider moving sign. Timeline: Short-term.

Location: Center Street at Division Street

North of the intersection uses are primarily for the church and its parking before transitioning to commercial/retail in the business district south of Division Street. Approaching the Division Street intersection, Center Street has three lanes. Division Street has two lanes in each direction with a two-way left-turn lane. At the intersection, eastbound Division Street has two lanes with hatched out left-turn lane, and westbound Division Street has two through lanes and one left-turn lane. Just south of the intersection is the Union Pacific Railroad at-grade rail crossing.

- **Observation**: The RSA Team observed several pedestrian accessibility issues. Ramps and pushbuttons in place; however, no marked crosswalk was provided in any direction. Ramps were not aligned with where the marked crosswalks would be. Stop bars are far forward, typically in the path of where the marked crosswalk would be. On the northwest side, the pedestrian pushbutton was obstructed by a pole. On the north side (both northeast and northwest quadrants of the intersection), portions of the sidewalk were slightly raised with a curb, and ramp locations did not line up. Truncated domes on the south side of the intersection were radial with the curve, but they were aligned perpendicular on the north side. **Recommendation**: The City should upgrade accessibility in this location by installing marked crosswalks that are not in conflict with vehicular markings, improving ramp alignment as appropriate, and relocating pushbuttons or removing obstructions. Timeline: Short- to medium-term, depending on the issue.

- **Observation**: The RSA Team observed several instances of wrong-way driving or near-instances or wrong-way driving. While conducting nighttime field reviews with Arlington PD, wrong-way driving was cited to be an issue at this location. **Recommendation**: Consider countermeasures for wrong-way driving, including those listed in the Center Street at Randol Mill Road section above. Additionally, some of the City's typical wrong-way driving countermeasures could use some attention: the existing No Right Turn sign was faded, and the City could try the green arrow in lieu of existing green ball in the westbound direction. Timeline: Short- to medium-term, depending on the possible solution.
- **Observation**: Poor access management on the northwest quadrant of the intersection (pawn shop) makes for conflicts with Division Street through traffic and drivers parking. **Recommendation**: The RSA Team noted that this is proposed to be changed in the upcoming Division Street project and believes that the proposed design would help reduce conflicts in this location. Timeline: Short-term.

Other Recommendations

The RSA Team was able to review the preliminary plans for the projects below, and we offer the following comments for consideration:

- Division Street:
    - Items for possible additional review and addition in future plan:
        - Driveway designs as described in pages 16 to 18.
        - Review locations with existing sign, signal, power poles and ensure accessibility.
        - Complete a full review of accessibility of existing sidewalk and ramps to remain.
        - At the Center and Division intersection, the existing ramps are not accessible, and no crosswalks are marked. Updates are needed, but the plans specify existing infrastructure at this intersection to remain in place. The RSA Team highly recommends reconsidering this approach.

- Randol Mill Road: The RSA Team understands that the future plan expands the cross-section from four to six lanes. The RSA Team's observations don't seem to indicate this is necessary for daily operations. A six-lane cross-section would likely result in increased speeds. It would be more difficult for pedestrians to cross and would be more difficult for vehicles to turn. The City should consider all the negative consequences of focusing on providing motor vehicle capacity limited amount of time, and how the excess capacity would be used during non-peak times of day. To maximize walking and biking comfort and reduce the potential for crashes, maintaining a four-lane section would be preferred.

Appendix A

List of attendees at meetings:

Kickoff meeting:

City of Arlington:

- Keith Brooks
- Daniel Burnham
- Andrea Ruales
- Sabino Martin
- Manisha Joshi
- Ann Foss
- Jana Wentzel
- Commander Brian Garcia

Walkable Arlington:

- Tony Pham
- Hyacinth Szabó
- Anna Laura Harmjanz
- Morgan Chivers

TxDOT:

- Anthony White

FHWA:

- Stephen Ratke
- Ed Burgos-Gomez
- Millie Hayes

Nighttime site visit with Arlington PD:

- RSA Team
- Officer Derek Lee
- Officer Joshua Loesel

Meetings with Transportation and Public Works, and site visit accompaniment:

- Andrea Ruales

- Chris Funches
- Sabino Martin
- Manisha Joshi

Closeout meeting:

City of Arlington:

- Keith Brooks
- Daniel Burnham
- Andrea Ruales
- Sabino Martin
- Chris Funches
- Manisha Joshi
- Ann Foss
- Jana Wentzel
- Commander Brian Garcia

Walkable Arlington:

- Tony Pham
- Anna Laura Harmjanz

TxDOT:

- Anthony White

FHWA:

- Stephen Ratke
- Ed Burgos
- Millie Hayes