

Protected Left Turns in Mesa

Transportation Advisory Board
May 2026



- Why Left Turn Phasing Matters
- Left Turn Phasing Overview
- Methodology
- Implementation
- Existing Locations



Why Left Turn Phasing Matters

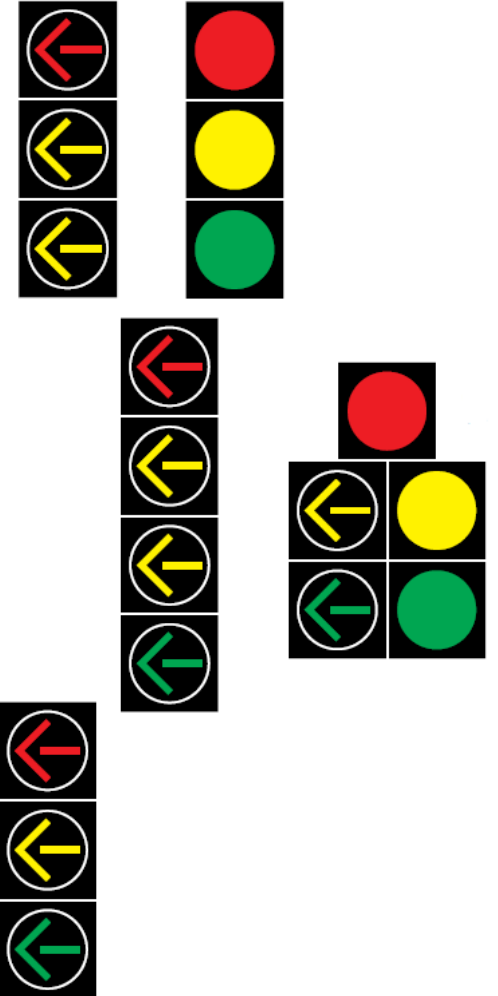
- Left turns create multiple conflict points:
 - Opposing through vehicles
 - People in crosswalks
 - Bicyclists travelling parallel to traffic
- Drivers must judge:
 - Multiple lanes of traffic
 - Speed of oncoming traffic
 - Available gap
 - Presence of people in the crosswalk
- Can negatively affect:
 - Efficiency
 - Delay



➤ These factors can increase the likelihood of driver error or impulsive behavior

Types of Left Turn Phasing

- Permissive (flashing yellow arrow or green ball)
 - Least control, highest risk potential, lowest impact on timing
- Protected/Permissive (combination of arrows or arrows/green ball)
Can be first or third car detection (i.e., one or three cars in the queue when green arrow is activated)
 - More control, medium risk potential, medium impact on timing
- Protected-Only (green arrow)
 - Most control, lowest risk potential, highest impact on timing



All new locations are arrows to comply with MUTCD

Left Turn Phasing Methodology

- Crash history involving preventable left turn crashes
- Left turn delay during a peak hour
- Number of split failures during a peak hour
- Left turn volume vs. opposing through volume
- Number of opposing through lanes
- Sight distance and negative offset
- Crash severity



City of Mesa Approach

- Safety First
 - ✓ Annual crash analysis
 - ✓ High-Crash intersections identified in the Comprehensive Safety action Plan
- Monthly coordination with PD
 - ✓ Identification of high-crash locations
- Resident's complaints
 - ✓ Review of intersections based on request
- Continuous monitoring and adjustment
 - ✓ Using crash and predictive analysis



Left Turn Phasing Implementation

Simpler modifications can often be completed by City staff, including:

- Signal timing changes
- Detection adjustments
- Flashing yellow arrow conversions
- Minor signing and striping updates

More complex improvements may require:

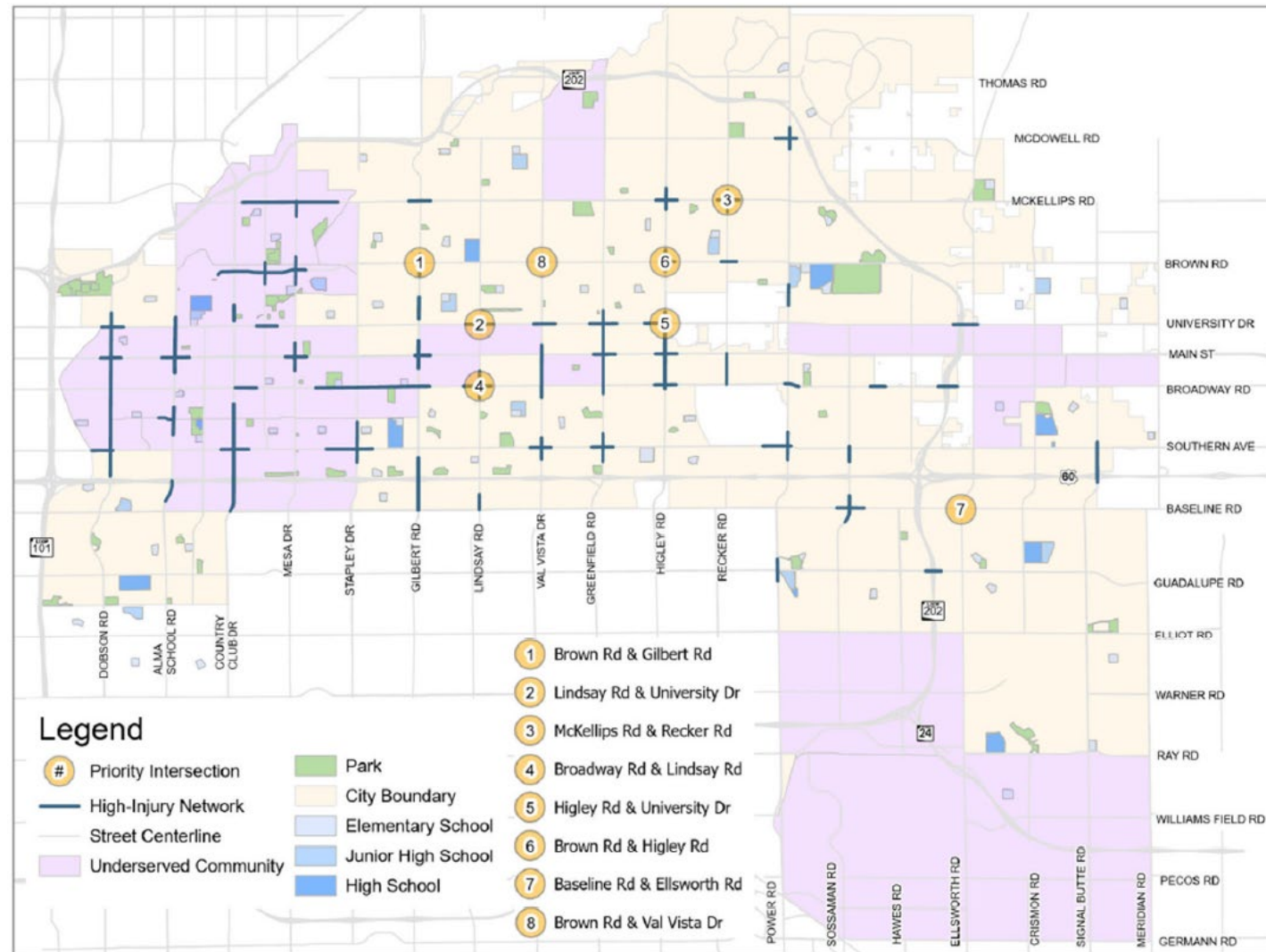
- Engineering design plans
- New signal equipment or poles
- Detection and wiring upgrades
- Geometric modifications or lane reconfiguration



Mesa's SafeTurn Initiative

U.S. Department of Transportation
Safe Streets and Roads for All (SS4A)
Mesa awarded funding for:

- Conversion to protected-only left turns
- Eight locations throughout the City
- Includes signal & ADA upgrades as well as signing & striping changes
- Some locations may be converted to dual left turn lanes
- Total grant amount: \$3.1M

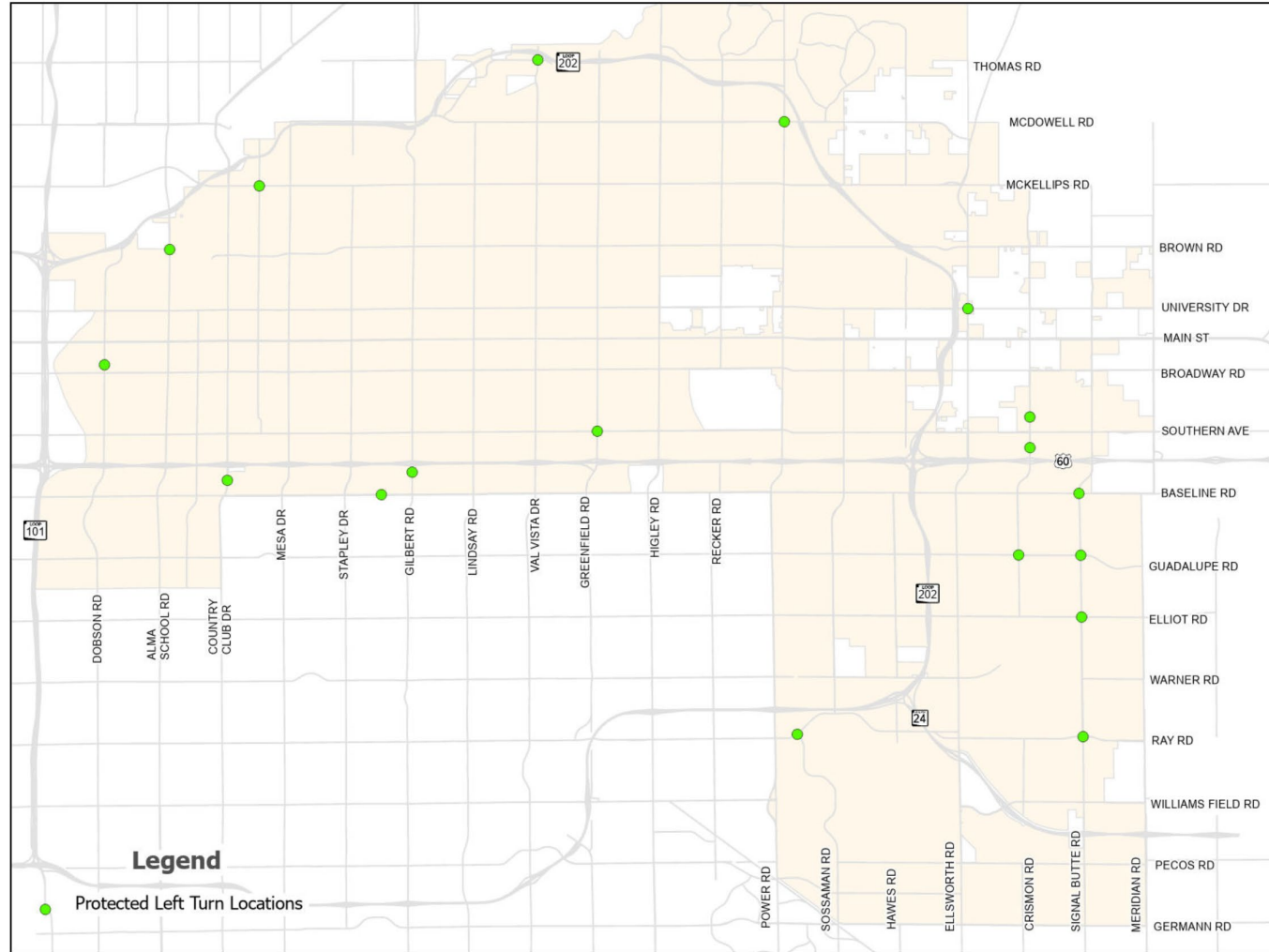


Protected Left Turn Locations

Protected Left Turns installed since 2021:

1. University Drive & Ellsworth Road
2. Juanita Avenue & Country Club Drive
3. Baseline Road & Signal Butte Road
4. Bass Pro Drive & Alma School Road
5. Inverness Avenue & Gilbert Road
6. Guadalupe Road & Crismon Road
7. Hampton Avenue & Crismon Road
8. 261 S Dobson Road @ Dexcom (n/o Broadway)
9. Ray Road & Sossaman Road
10. Baseline Road & Harris Drive
11. McDowell Road & Power Road
12. McKellips Road & Center Street
13. Skyline Boulevard & Crismon Road (Skyline HS)
14. Thomas Road & Val Vista Drive
15. Guadalupe Road & Signal Butte Road
16. Southern Avenue & Greenfield Road
17. Ray Road & Signal Butte Road
18. Elliot Road & Signal Butte Road

Protected Left Turn Locations



Questions/Discussion

