

ALDOT ACCESS MANAGEMENT MANUAL UPDATE



SKIPPER
CONSULTING INC

SAIN
ASSOCIATES

Presented by Jim Meads, P.E. and Charles Cochran, P.E.
February 23, 2022

Outline

- History of ALDOT's AMM
- Feedback from Regions
- Changes to TIS Guidelines
- Changes to Access Guidelines
- New Sections

Special Thanks to the Technical Steering Committee!

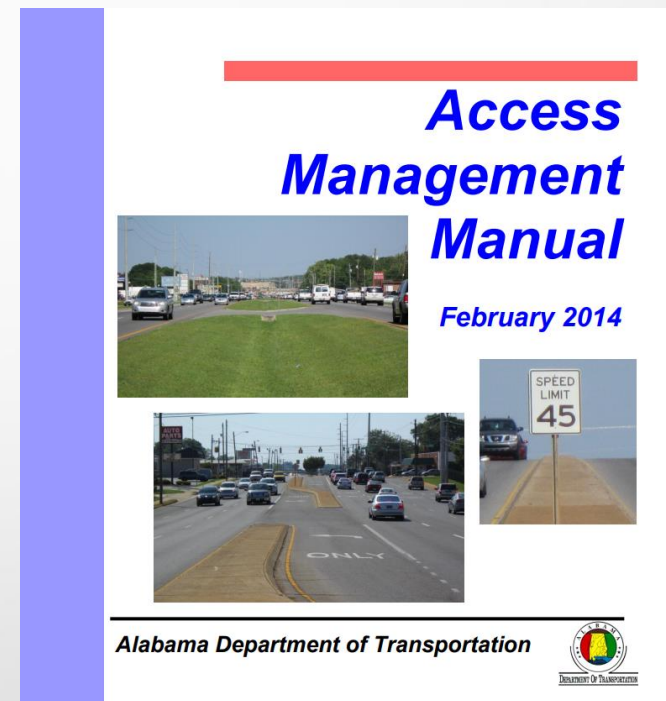
- Bryan Orange
- Eric Bertolotti
- Andrew Harry
- Kerry NeSmith
- Steve Walker
- Johnny Johnson
- Matt Johnson
- Stuart Manson
- Taylor Stoudenmire
- Robert Prescott
- Angela Lambert
- Stephen Blair
- Brian Aaron
- Ken Cush
- Scott Moseley
- Phillip Shamburger

Purpose of Access Management

- The purpose of the Alabama Department of Transportation (ALDOT) Access Management Manual is to set out **guidelines** for managing access to and from state roads and highways.
- Goals of access management:
 - **protecting the health, safety, and welfare of the public**
 - maintaining the highway rights-of-way
 - preserving the functional level of state roads and highways while meeting the needs of the motoring public

ALDOT AMM History

- Original ALDOT AMM Published in 2014
- Conducted training at that time
- ALDOT received input from staff and consultants about desired changes to the manual



Work Completed

- Reviewed AMMs from 10 other states
- Reviewed Permit Manual, Maintenance Manual, and Standard Drawings
- Met with each Region to get feedback on current manual
- Updated manual and met with Committee to get feedback
- Published Manual Nov 2021
- Conducted 4 training sessions with ALDOT staff Dec 2021

Feedback from Regions

- Consistency between AMM and other ALDOT publications
- Wanted case studies
- More detailed information for residential land uses
- Lower speed situations
- Dollar store problem

TIS Guidelines

- When TIS are required
- Study area guidelines
- Signal warrants

For developments that generate more than 100 total (inbound plus outbound) peak hour vehicle trips, a TIS shall be required unless indicated otherwise by the ALDOT Engineer.

Table 3-2: ALDOT Criteria to Determine Traffic Impact Study Area Requirements

Development Land Use Type	Required Study Area for Traffic Impact Study
Sample Small Commercial Developments (Outparcel/Small Tract)	
Fast-food restaurant	Proposed connection point -&- All intersections (signalized or unsignalized) within 1,000 ft of the site property boundaries except minor driveways
Convenience store (with or without gas pumps)	
Any small single tract development generating 200 or fewer trips during any peak hour	
Sample Moderate Developments (Commercial, Industrial, & Residential)	

TIS Guidelines

- Added parameters (crash history and corridor plans)
- Simulation modeling (weaves, etc.)
- Project scoping meeting
- Updated 100 trip thresholds

Table 3-1: Traffic Impact Study Land Use & Density Thresholds

Land Use	Density (>100 trips/hour)
Residential	
Single Family Housing	90 Dwelling Units
Multi-Family Housing	140 Dwelling Units
Retirement Community	300 Dwelling Units
Lodging	
Hotel	160 Rooms
Motel	200 Rooms
Office	

TIS Guidelines

- Analysis scenarios
- Formatting (added example figures)
- Capacity analysis (operational models)

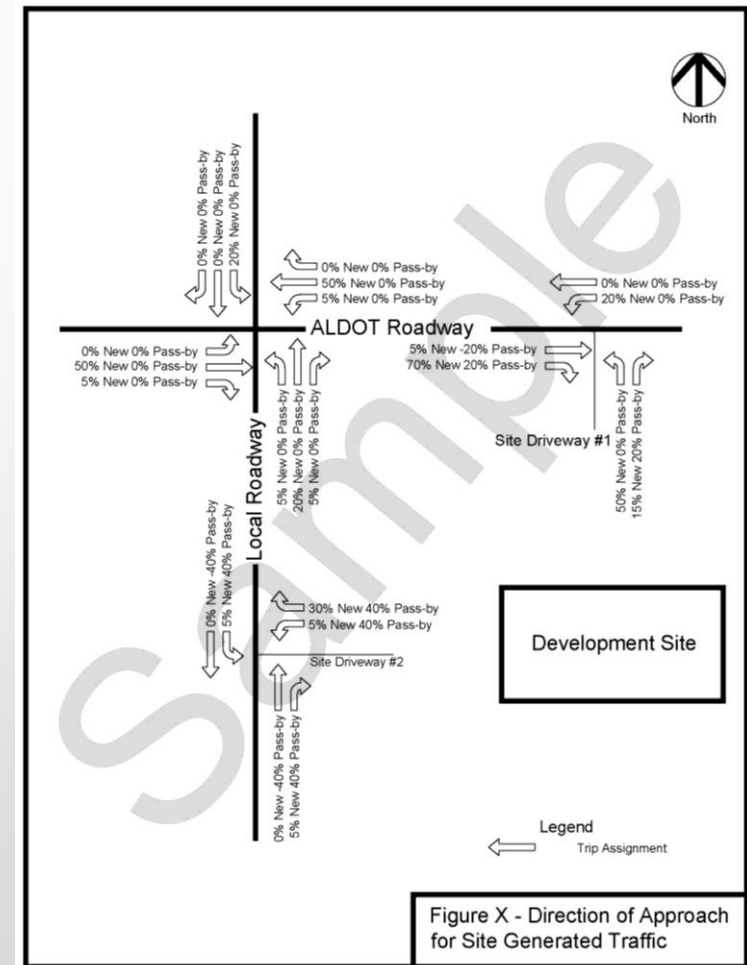


Figure X - Direction of Approach for Site Generated Traffic

TIS Checklist & Report Outline

Traffic Impact Study Checklist and Report Outline

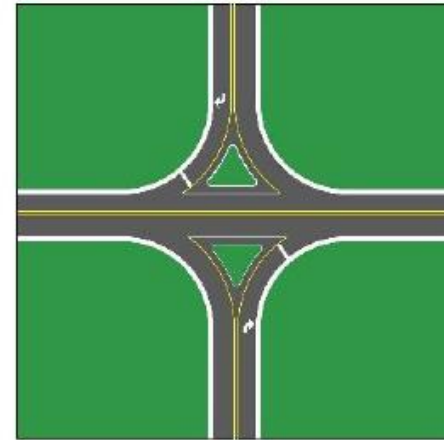
If it is determined that a traffic impact study is required, the following tasks should be completed:

- Conduct a scoping meeting or conference call with ALDOT
 - Define the study area
 - Determine traffic data needed (hours and locations)
 - Determine critical analysis requirements
 - Determine the horizon year and development phasing
 - Discuss crash history within study area
 - Discuss trip generation source
 - Determine if there are any existing access management plans in place or any upcoming developments within the study area
- Collect traffic data
- Determine peak hours
- Analyze existing conditions for each peak hour
- Grow traffic and analyze background conditions for each peak hour, if necessary
- Estimate trip generation (including pass-by and new trip splits)
- Distribute and assign traffic within the study area
- Analyze future conditions for each peak hour (during each phase of development, if necessary)
- Perform traffic signal warrant evaluation if necessary
- Determine improvements needed to mitigate the development impact
- Compile analysis and findings into a report (see outline below)

REPORT OUTLINE

1. Preface
2. Introduction & Overview
 - Overview of Development
 - Analysis Scenarios
3. Existing Traffic Conditions
 - Project Study Area
 - Existing Geometric Data
 - Existing Traffic Data
 - Existing Traffic Conditions Analysis
4. Future "No Build" Traffic Conditions (as applicable)
 - Future Roadway Improvements
 - Background Traffic Growth
 - Future "No Build" Traffic Volumes
 - Future "No Build" Traffic Conditions Analysis
5. Future "Build" Traffic Conditions
 - Description of Proposed Development
 - Trip Generation Estimates
 - Site-Generated Traffic Distribution
 - Future "Build" Traffic Volumes
 - Traffic Signal Warrant Analysis (as applicable)
 - Future "Build" Traffic Conditions Analysis
6. Conclusions/Recommendations
7. Appendices
 - Proposed Site Layout
 - Signal Timing Sheets (as applicable)
 - Traffic Count Data
 - Existing Capacity Analysis
 - Signal Warrant Analysis (as applicable)
 - Future "No Build" Capacity Analysis (as applicable)
 - Future "Build" Capacity Analysis

Access Design



Right-in/Right-out Only Driveways



Left-in/Right-in/Right-out Only Driveways

Connection Spacing

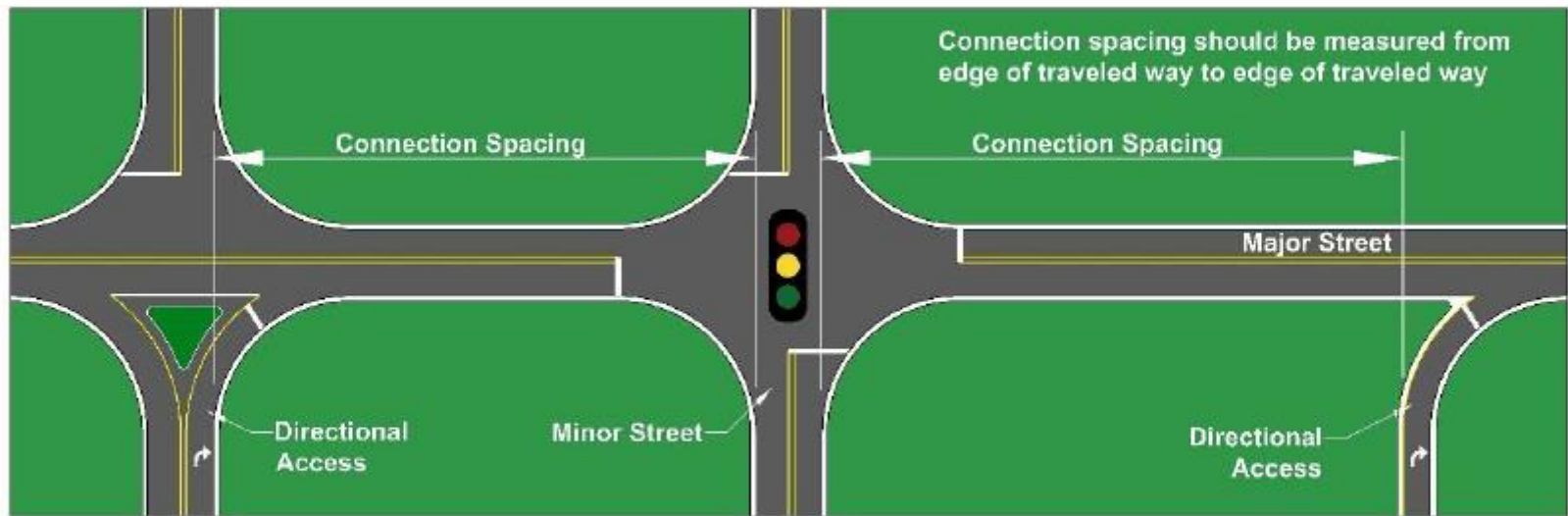


Figure 4-4: Measuring Connection Spacing

Connection Spacing

Access Category	Posted Speed (MPH)	Minimum Spacing (ft)*				
		Signalized	Unsignalized			
			Divided		Undivided	
			Full Access	Directional Access	Full Access	Directional Access
Commercial/Industrial Driveway	<45	1,000	660	275	275	275
	45 - 50	1,320	1,320	450	450	450
	≥55	2,640	1,320	625	625	625

*These spacing requirements may not be feasible for some locations. If this spacing cannot be provided, then further analysis may be needed to demonstrate that there will still be acceptable traffic operations after the access is constructed.

Corner Clearance

Posted Speed (MPH)	Corner Clearance (ft)		
	Right-in Only (Upstream)	Right-out Only (Downstream)	Right-in/ Right-out
≤ 35	250	250	250
40	250	250	350
≥ 45	440	440	660

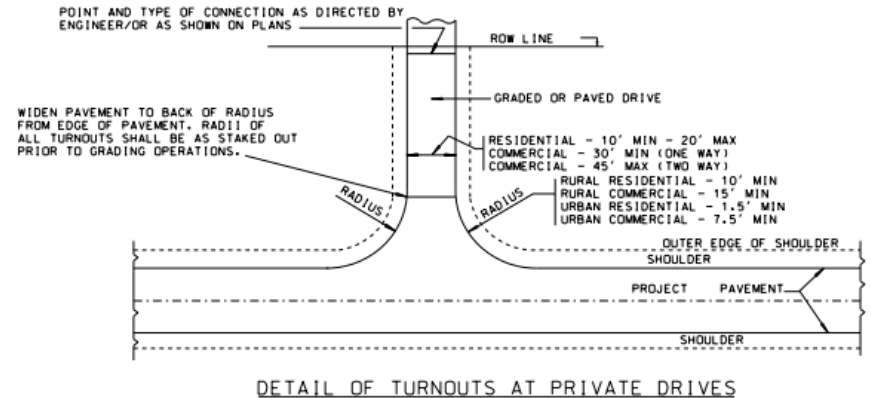
*These spacing requirements may not be feasible for some locations. If this spacing cannot be provided, then further analysis may be needed to demonstrate that there will still be acceptable traffic operations after the access is constructed

Driveway Guidelines

TABLE 4.5 Minimum Radii by Driveway Type

Driveway Type	Min. Driveway Radius (ft)
Residential	25
Commercial/Industrial	50
Truck access	75

Old



New

Driveway Type	Min. Driveway Radius (ft) ‡	Min. Driveway Width (ft) ‡
Single-Family Residential Lot	25	10
Non-Commercial Agriculture	25	16
Commercial/Office/Retail/Subdivisions	50*	24*†
Industrial-Type Facilities	75*	26*

*Should be individually designed to handle the typical large truck that uses the access connection

† One-way driveways can be less than 24 feet but must be at least 12 feet.

‡ Designs below these minimums only allowed with ALDOT approval

Driveway Guidelines

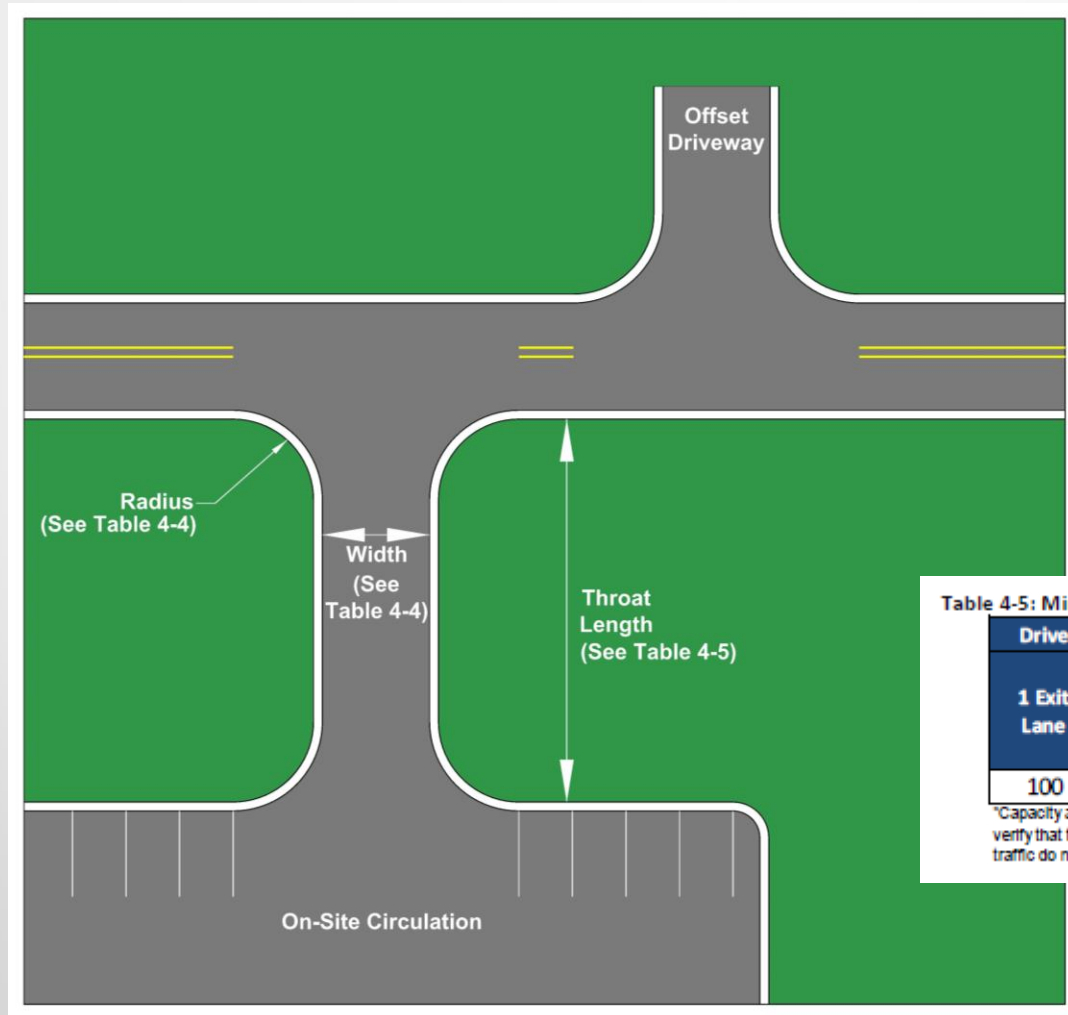


Table 4-5: Minimum Driveway Throat Length

Driveway Throat Length* (ft)		
1 Exit Lane	2 Exit Lanes	3+ Exit Lanes
100	150	200

*Capacity analysis should be conducted to verify that the expected queues for exiting traffic do not impede the on-site circulation

Turn Lane Lengths

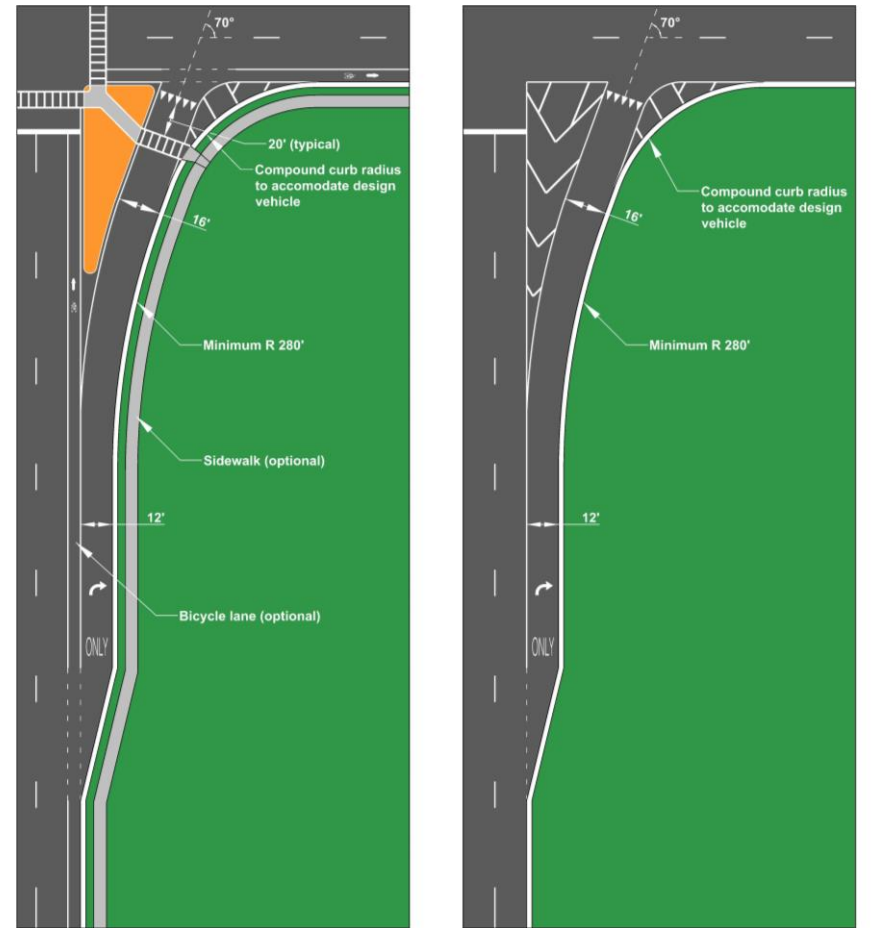
Posted Speed (MPH)	Full Width Length* (ft) (A)	Bay Taper Length (ft) (B)	Total Length* (ft) (C)
35	115	160	275
40	165	160	325
45	215	160	375
50	245	180	425
55	295	180	475
60	320	180	500
65	370	180	550

*Does not include storage requirements. Lengths are based on allowed 10 MPH deceleration in the through lane.

New Sections in the Manual

Smart Channel Design

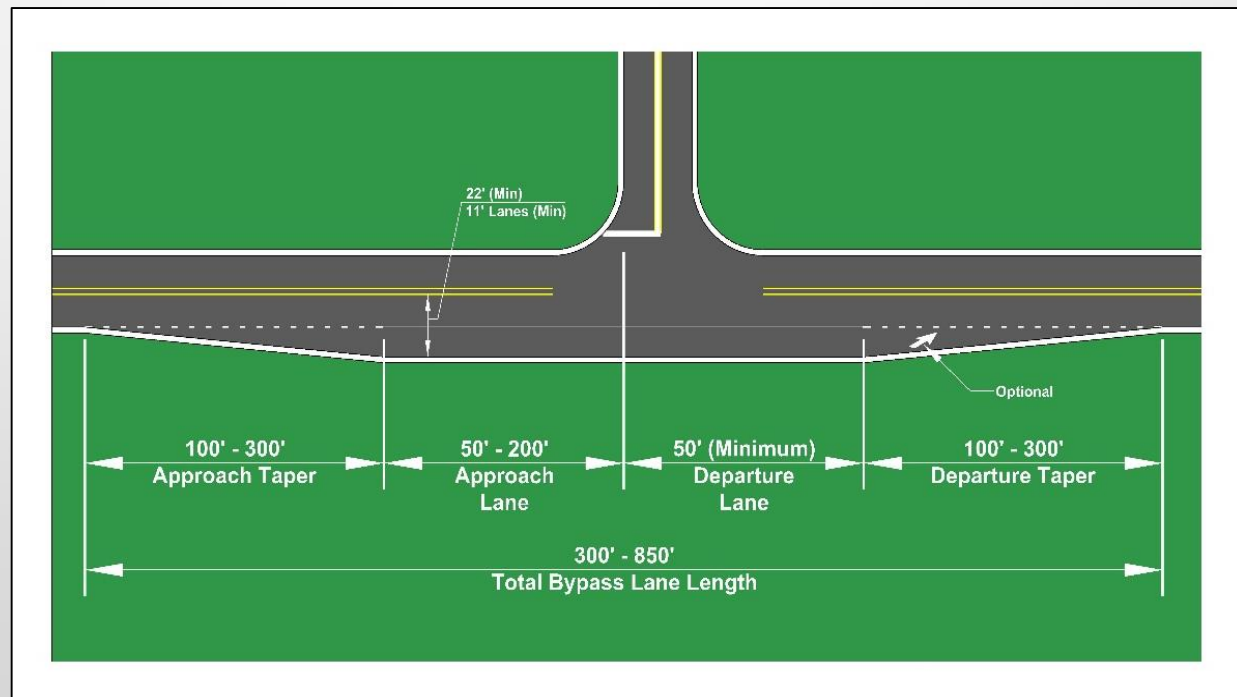
- Critical angle = 70°
- Improves line of sight
- Reduces rear end crashes



New Sections in the Manual

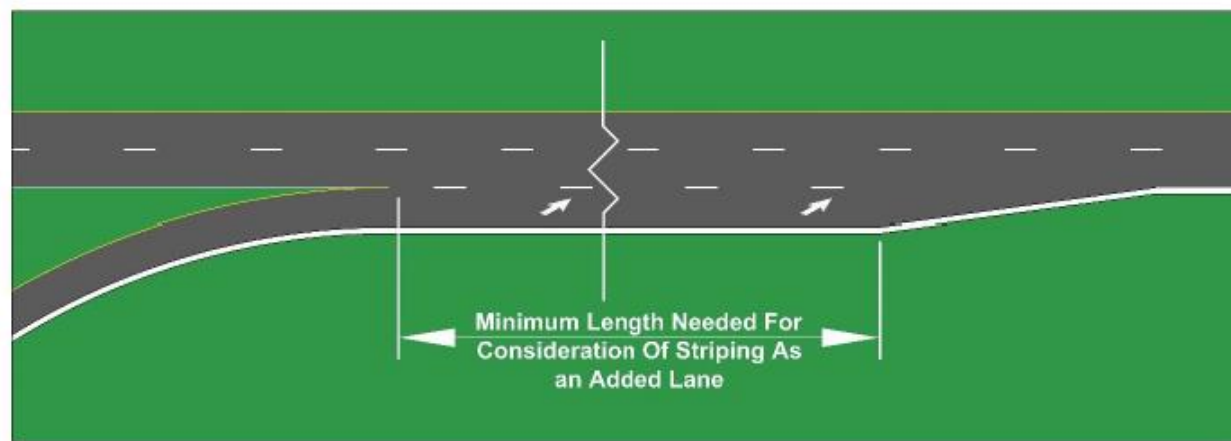
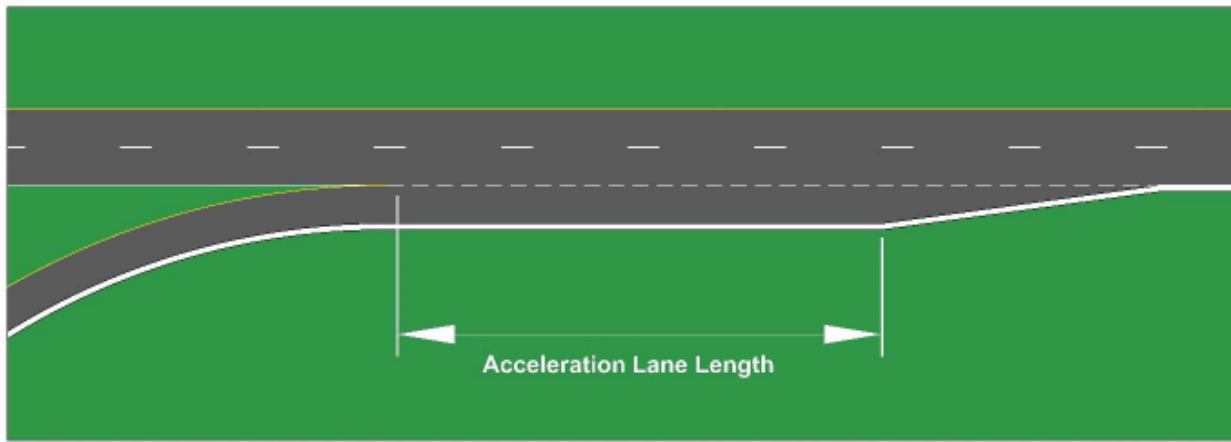
Left Turn Bypass Lane

- Can only be used at:
 - T-intersections
 - Two-lane roads
 - Where cost or ROW constraints won't allow a full LTL



New Sections in the Manual

Acceleration and Added Lanes



Design Speed (MPH)	Acceleration Lane Length (ft)
30	140
35	220
40	300
45	490
50	660
55	900
60	1140
65	1350
70	1560

Design Speed (MPH)	Min. Accel. Length Needed to Stripe as an Added Lane
30	1080
35	1380
40	1660
45	2060
50	2420
55	2860
60	3400
65	3810

New Sections in the Manual

Alternative Intersection Designs



Figure 2-13: Sample Roundabout Intersection

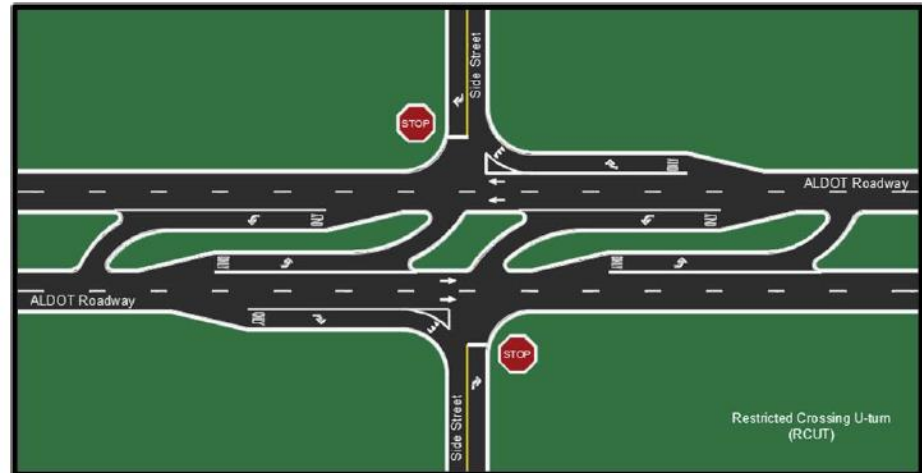


Figure 2-9: Sample Restricted Crossing U-turn Intersection (RCUT)

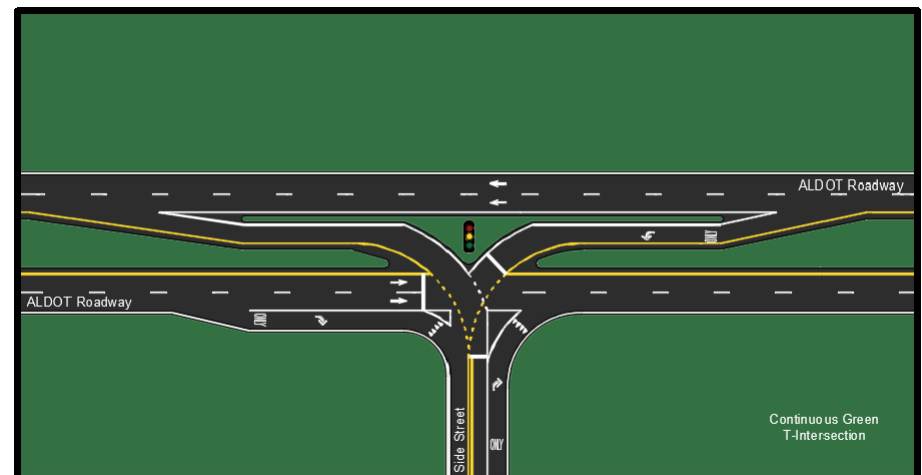


Figure 2-11: Sample Continuous Green T-Intersection

New Sections in the Manual

Case Studies

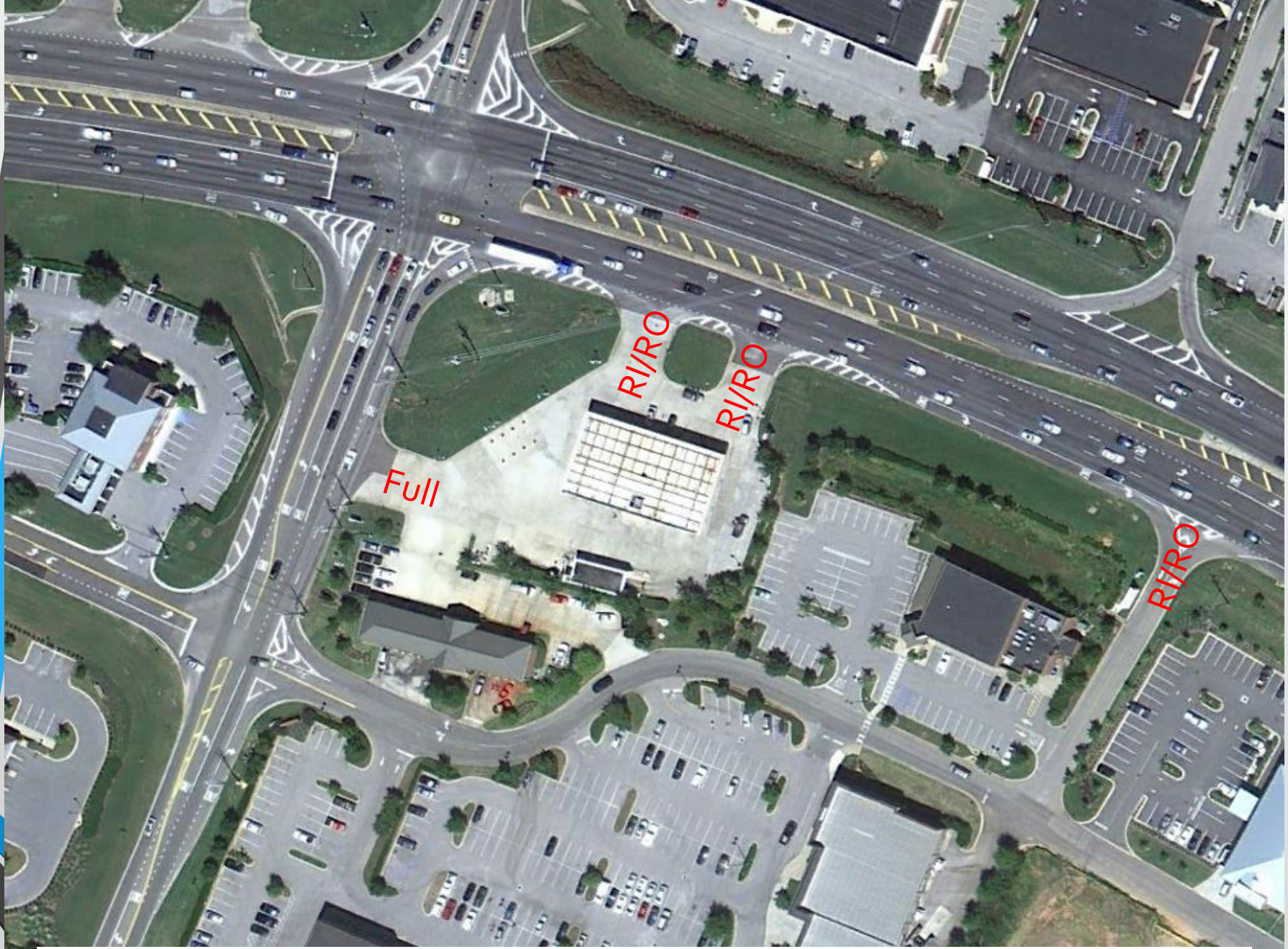
CASE STUDY 2: CORNER LOT REDEVELOPMENT

BACKGROUND

A gas station has been vacant for over 5 years, and a new owner has purchased the property. See Figure E-4. It is on a corner lot at the intersection of a state highway (4-lane divided, 55 MPH) and a local route (2-lane, 35 MPH). There are currently two accesses to the state highway (1 full and 1 right-in/right-out) and one very wide (>100') full access to the local route. The fueling truck route is also shown on Figure E-4. The developer intends to rebuild the gas station pumps and convenience store, open it back up, and keep the same driveway locations.



Figure E-4: Lot to Be Redeveloped



Before AM – US-280 @ AL-119



After AM – US-280 @ AL-119

Exceptions/Variations

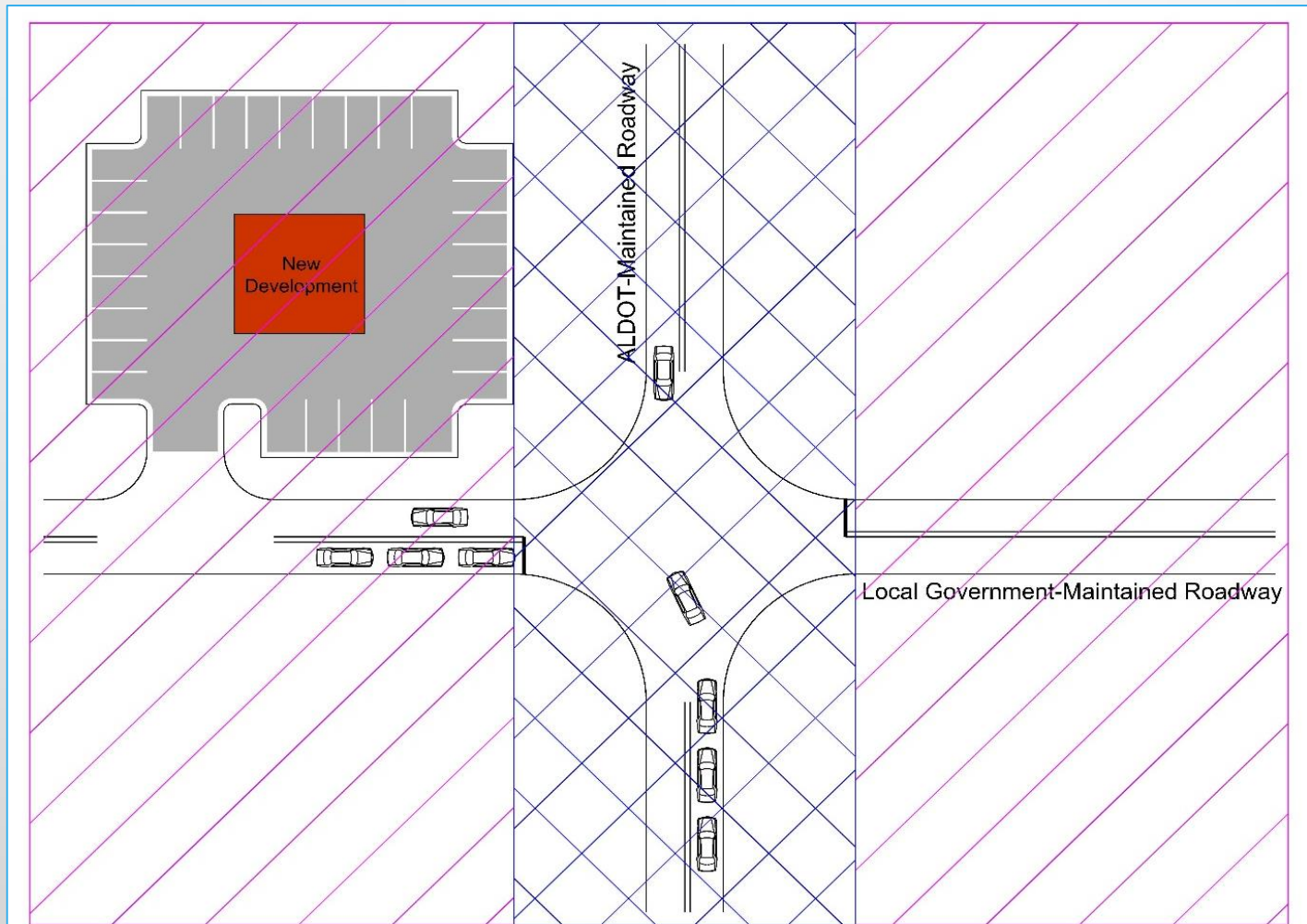
1.8 EXCEPTIONS / VARIATIONS

For special circumstances where it is infeasible to meet the minimum access management criteria set out in the Manual, the applicant should submit a detailed description and explanation of variation to the Department. The statement should address the constraining site conditions to which the application applies. Proposed variations will be evaluated according to the following criteria (including but not limited to):

- Denial of the requested variations will result in loss of reasonable access to the site.
- The requested variations are reasonably necessary for the convenience and welfare of the public.
- All reasonable alternatives that meet access requirements have been evaluated and determined to be infeasible.
- Reasonable alternative access cannot be provided.
- The variations will not result in any violations of the pedestrian accessibility in accordance with relevant ALDOT-accepted guidelines.

The applicant must submit written justification for the requested variation including any associated traffic impact studies deemed applicable by the applicant or as required by the Department. Restrictions and conditions on the scope of the permit will be imposed as required to keep potential hazards to a minimum. The permit may contain specific terms and conditions providing for the expiration of the variation if in the future the grounds for the variation no longer exist.

Inter-Agency Coordination



Developments proposed within the local government's jurisdiction can impact traffic operations on adjacent roadways. That should be evaluated as part of a traffic impact study.

-  Local Government Jurisdiction
-  ALDOT Jurisdiction

Inter-Agency Coordination

It is through a cooperative relationship between ALDOT and local governments that the safety and operational benefits of access management can be fully realized on **all roads in Alabama**

Questions?

- Jim Meads – jimmeads@sain.com
- Charles Cochran – ccochedran@sain.com
- Darrell Skipper – darrell@skipper.com



SAIN
ASSOCIATES