

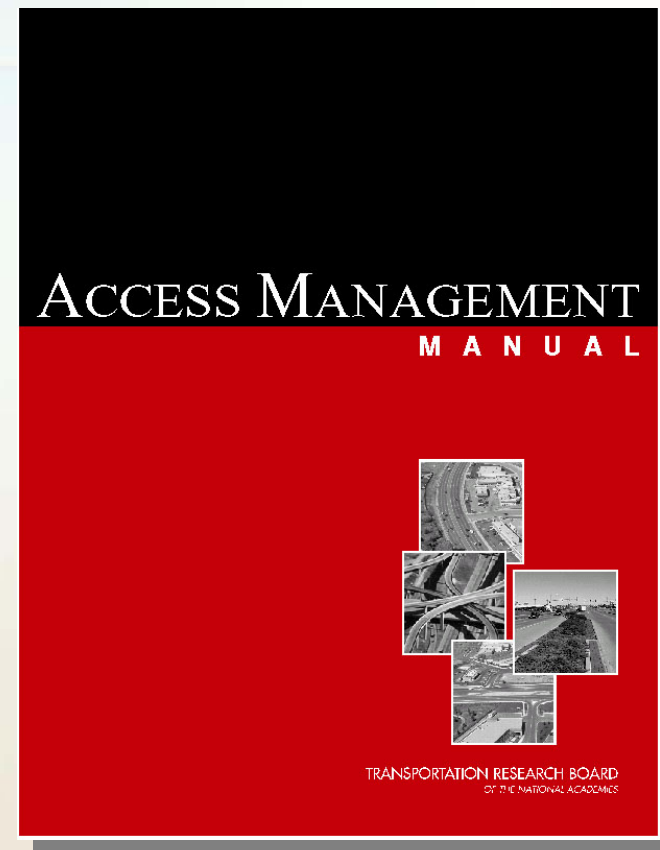
# Access Management

Instructors:

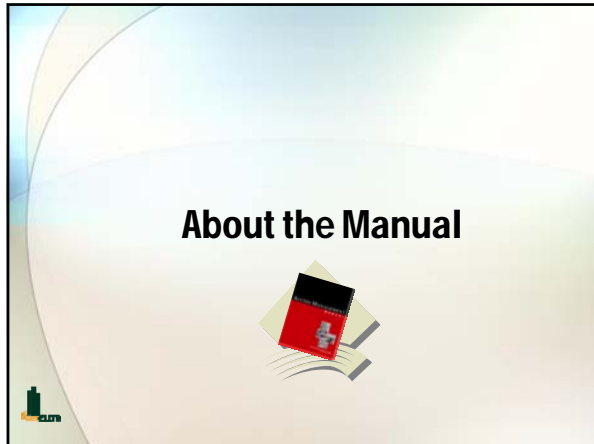
**Kristine M. Williams, AICP**  
**Vergil G. Stover, PhD, P.E.**



Center for Urban  
Transportation Research  
University of South Florida







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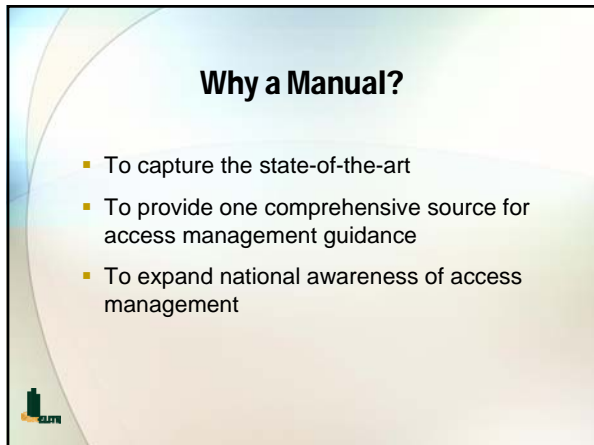
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TRB Committee on Access Management  
• [www.accessmanagement.info](http://www.accessmanagement.info)

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## Manual Subcommittees

- Administrative Elements
  - Del Huntington, Chair
- Benefits and Case Studies
  - Jerry Gluck, Chair
- Design and Standards
  - Herb Levinson, Chair
- Legal and Right of Way
  - Phil Demosthenes, Chair
- Planning and Site Design
  - Eddie Shafie, Chair

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## In Summary

- The Manual is:
  - a valuable guide for establishing and administering AM programs
  - a great tool for project design & development
  - a comprehensive source of recent technical info
- The Manual does not establish national standards and warrants

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## Workshop Overview

- Introduction and Concepts
- Effects of Access Management
- Roadway Classification & Access
- Land Development and Access
- Access Location, Spacing and Design
- Other Contents

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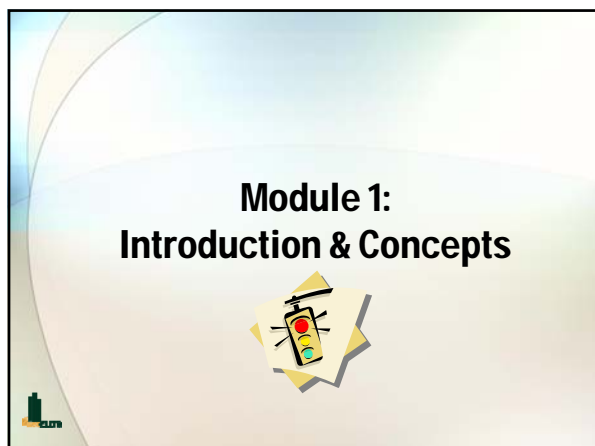
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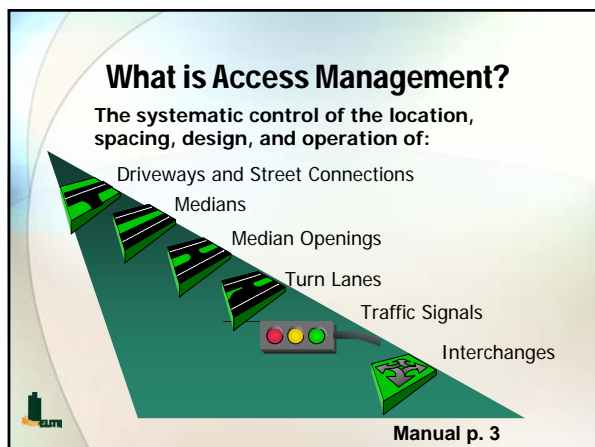
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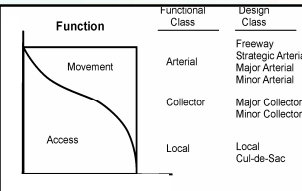
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## Principles of AM #1

### Provide a Specialized Roadway System

- Roads should be designed and managed according to the functions they are expected to serve.



Function	Functional Class	Design Class
Movement	Arterial	Freeway
		Strategic Arterial
		Major Arterial
	Collector	Minor Arterial
		Major Collector
Access	Local	Minor Collector
		Local Cui-de-Sac

Manual p. 7,123

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## Principle #2

### Limit Direct Access to Major Roadways

- Roadways serving higher volumes of through traffic over longer distances require more access control.
- Frequent, direct access is more compatible with the function of local and minor collector roadways.

Manual p. 7, 125

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## Principle #3

### Promote Intersection Hierarchy

- Provide transitions from one stage of a trip to the next
- "The failure to accommodate each trip stage by suitable design is a prominent cause of highway obsolescence..."  
AASHTO
- Driveways are at-grade intersections

Manual p. 8, 126

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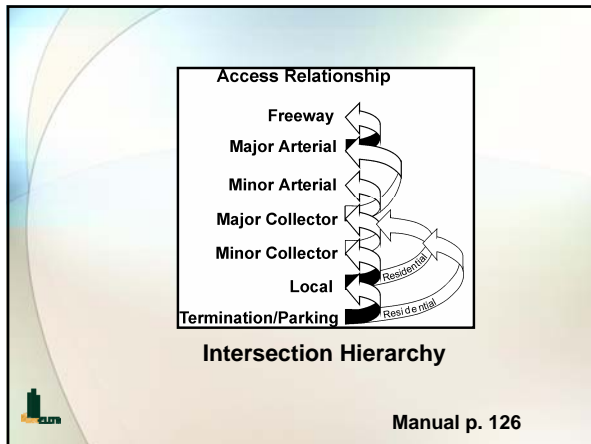
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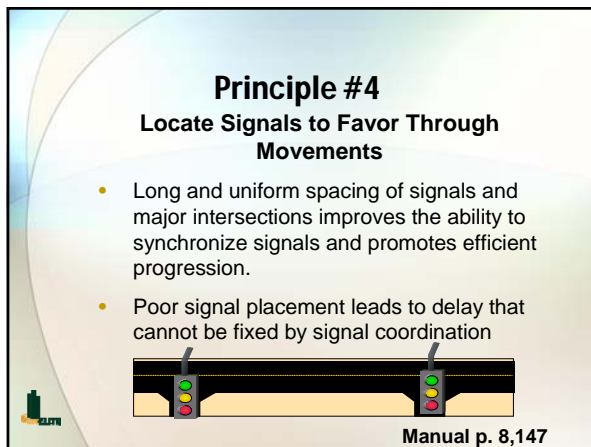
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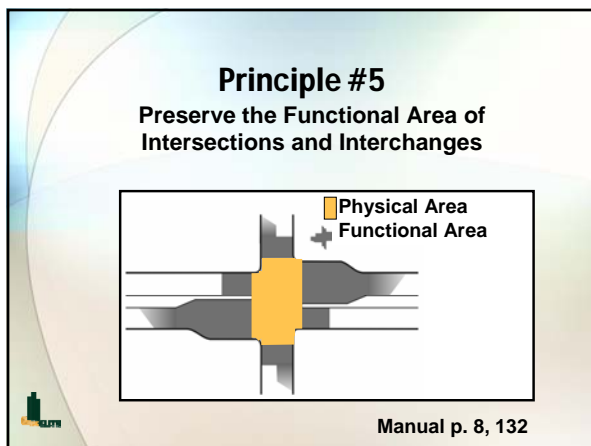
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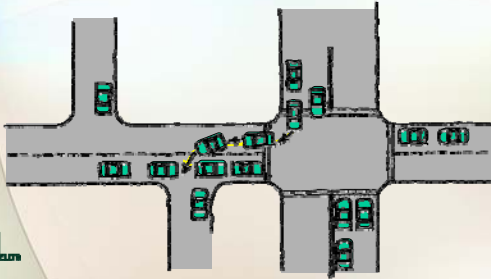
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### Locate Driveways Away from Intersections

- Inadequate corner clearance contributes to delay and safety hazards



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Driveway Too Close to Intersection

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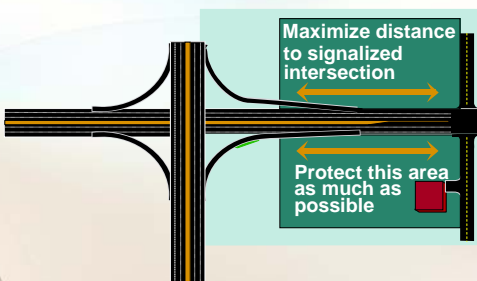
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### Move Access Away from Interchange Ramps



Manual p. 113, 159

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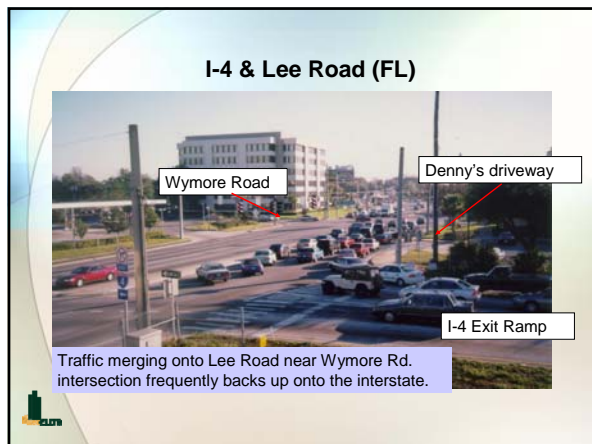
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### Principle #6

#### Limit the Number of Conflict Points

- Drivers have more collisions and are more likely to make mistakes when presented with complex driving situations



Manual p. 8, 192

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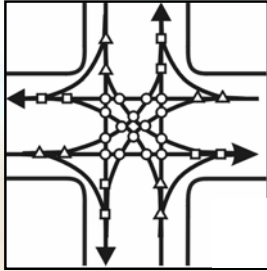
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### Four-way Intersection



Conflict Points	
○	16 Crossing
△	8 Diverge
◻	8 Merge
32 Total	

Manual p. 8

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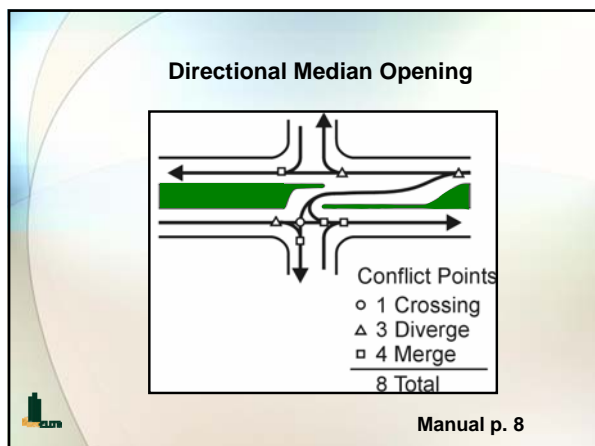
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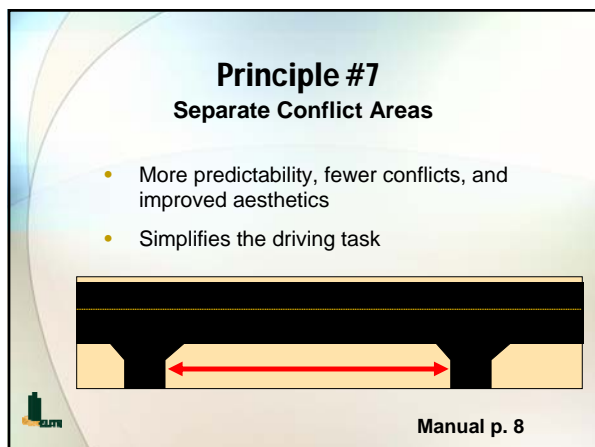
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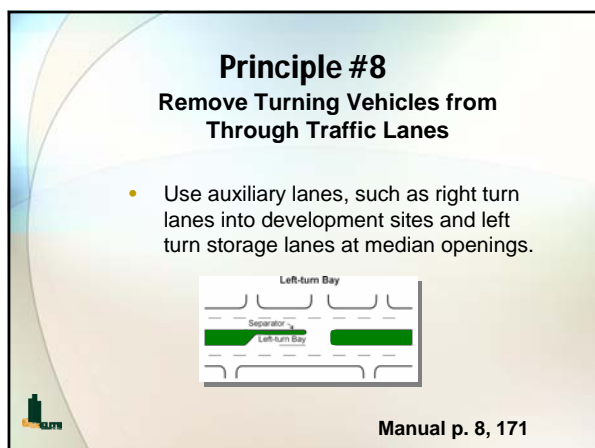
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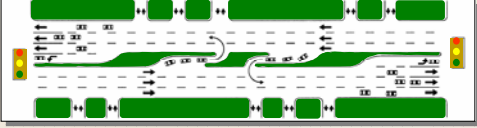
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### Principle #9

#### Use Nontraversable Medians to Manage Turning Movements

- Medians restrict turns to designated locations



Manual p. 9, 199

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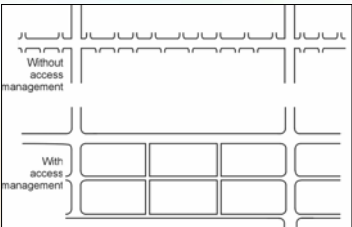
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### Principle #10

#### Provide a supporting street and circulation system



Manual p. 9, 189

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### Module 2:

#### Effects of Access Management




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## Benefits of Access Management

- **Safety**
  - Reduce crashes up to 50%
- **Mobility**
  - Increase roadway capacity 23% to 45%
  - Reduce travel time and delay 40% to 60%
- **Economic**
  - Increased market area for businesses
  - Improved customer safety and convenience
- **Aesthetic**
  - More area for landscaping



Manual p. 15

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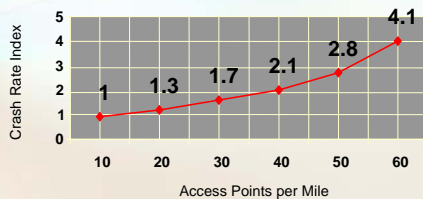
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## Safety

### Composite Crash Rate Indices



Source: NCHRP Report 420

Manual p. 16

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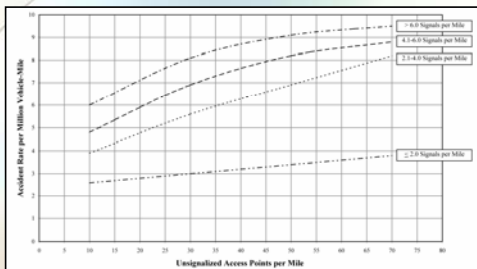
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Effect of signal density and unsignalized access density on average crash rates in urban and suburban areas

Manual p. 146

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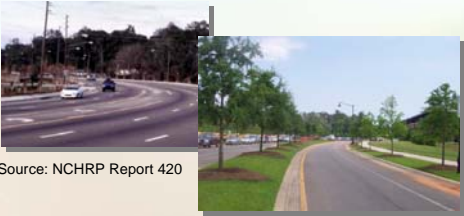
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## Medians vs. TWLTLs

- Roads with a median are about 30% safer than those with a TWLTL



Source: NCHRP Report 420

Manual p. 17, 199

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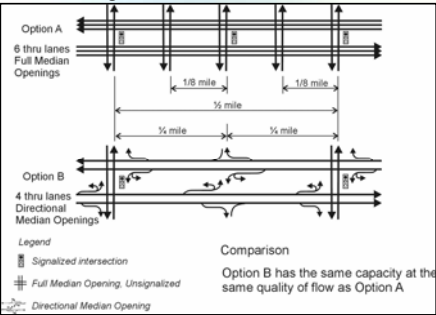
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## Quality of Service Benefits



Manual p. 19, 145

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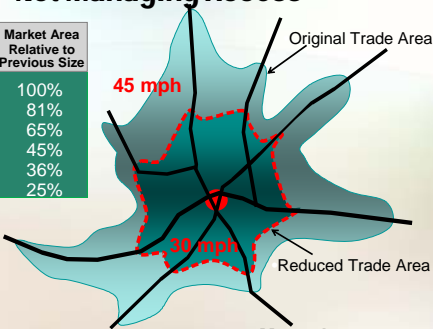
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## Market Area Effects of Not Managing Access

Reduction in Avg. System Speed	Market Area Relative to Previous Size
0%	100%
10%	81%
20%	65%
30%	45%
40%	36%
50%	25%



Manual p. 23

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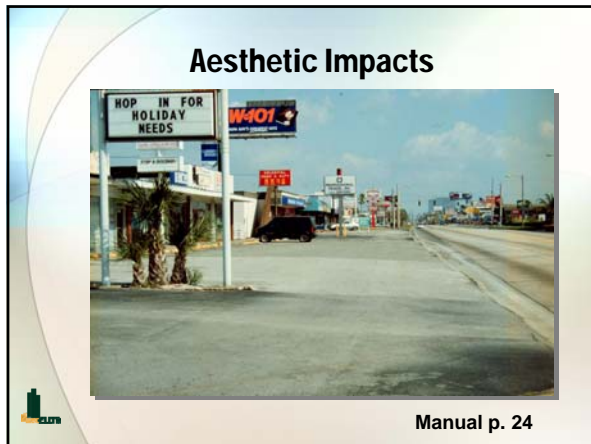
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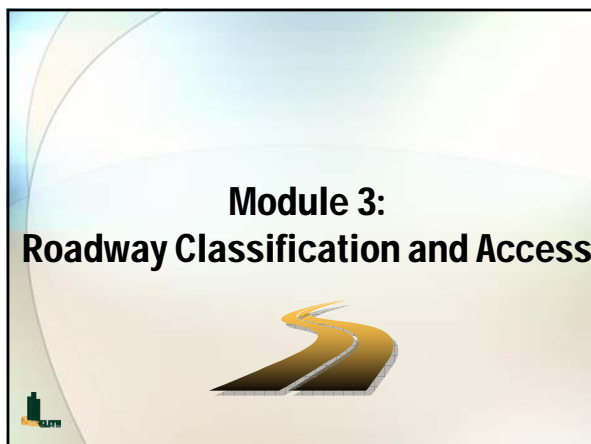
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## Access Classification

1. Develop hierarchy of access levels (classes)
2. Establish appropriate access mgt. standards for each access class
3. Assign the classification to each roadway or segment
  - Level of importance vs. existing characteristics

Manual p. 7

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## COLORADO CLASSIFICATION SYSTEM

Table of access categories, with approximate descriptions

<b>F-W Interstate System, Freeway Facilities</b>	
<b>E-X Expressway, Major Bypass</b>	
Rural	Non-Rural
<b>R-A Regional Highway</b>	<b>NR-A Regional Highway</b>
<b>R-B Rural Highway</b>	<b>NR-B Arterial</b>
	<b>NR-C Arterial</b>
<b>F-R Frontage Roads (both urban and rural)</b>	

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## Washington County, Oregon

Roadway Category	Driveway Spacing	Corner Clearance <sup>1</sup>
Major arterial	1000 ft.	1000 ft.
Minor arterial	600 ft.	600 ft.
Major collector	100 ft.	100 ft.
Minor collector	-	50 ft.
Local	-	10 ft.

1. or beyond the influence of standing queues

Manual Appendix B

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## Module 4: Land Development & Access





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## The Comprehensive Plan



- Include goals, objectives and policies for access management
- Classify roadways according to function—mobility vs. access
- Land use and activity center strategies

Manual p. 55




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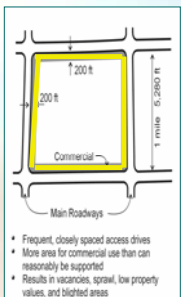
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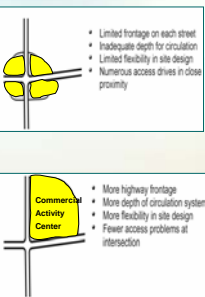
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## Activity Centers vs. Strips




- Frequent, closely spaced access drives
- More area for commercial use than can reasonably be supported
- Results in vacancies, sprawl, low property values, and blighted areas



- Limited frontage on each street
- Inadequate depth for circulation
- Limited flexibility in site design
- Numerous access drives in close proximity


**Avoid**



- More highway frontage
- More depth of circulation system
- More flexibility in site design
- Fewer access problems at intersection

**Preferred**

Manual p. 57, 58




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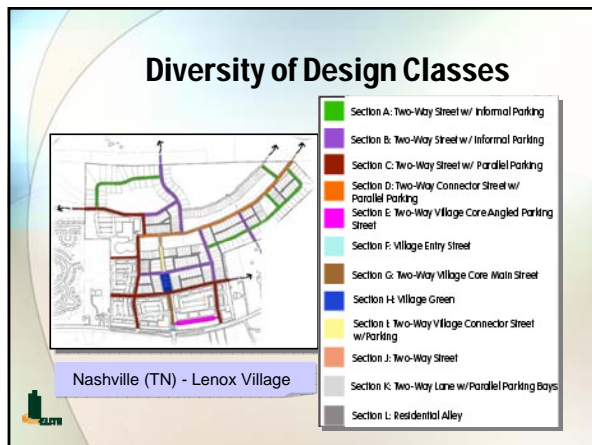
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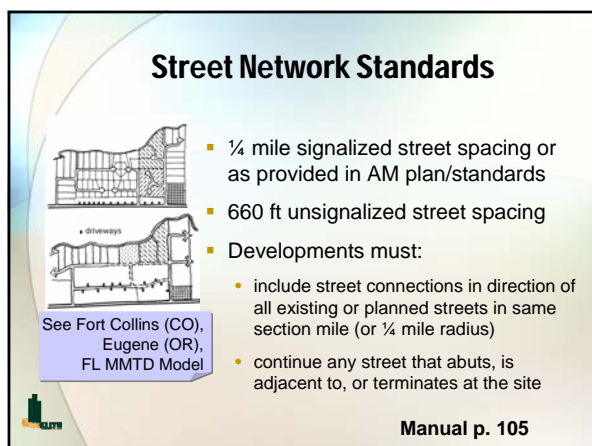
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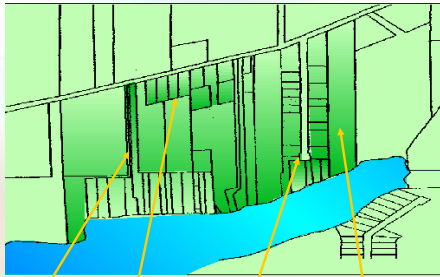
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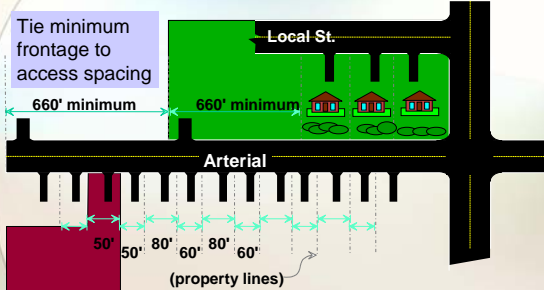
## Land Division and Access Problems



Flag Lots Strip Lots Cul-de-sac Bowling Alley Lot

Manual p. 102

## Minimum Lot Frontage



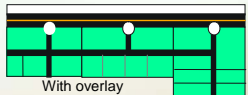
Avoid small lot frontages with no alternative access

## Access Management Overlay

- Verify lot and parcel boundaries
- Permit one access point per lot or parcel
- Conditions for more access connections
- No new connections for future lots



Before development



With overlay



Without overlay




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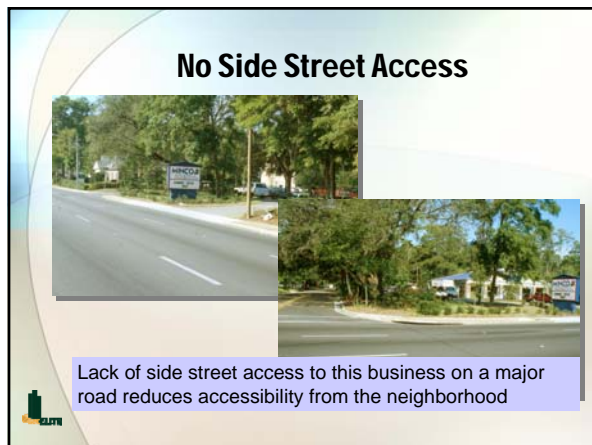
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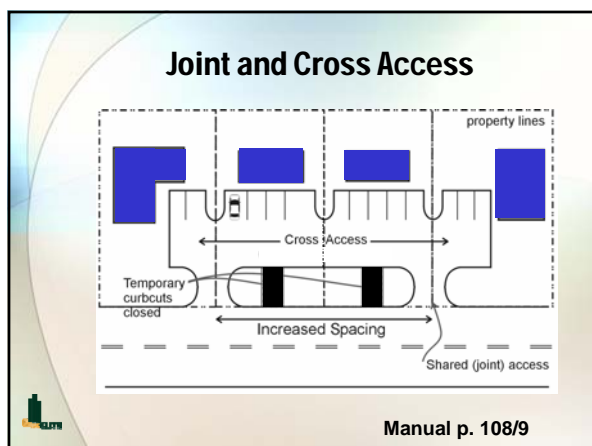
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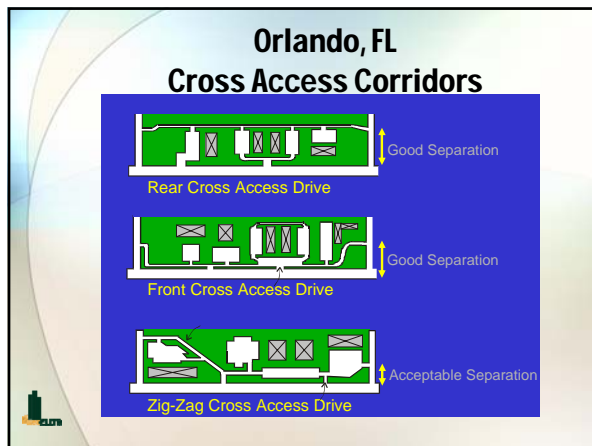
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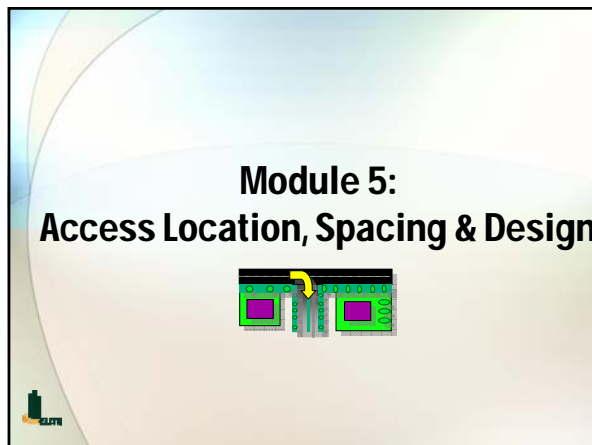
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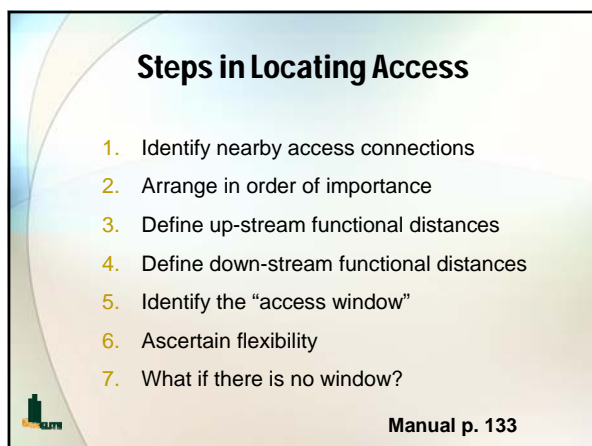
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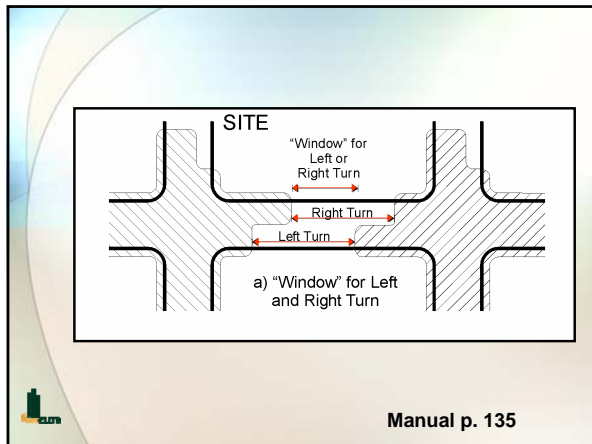
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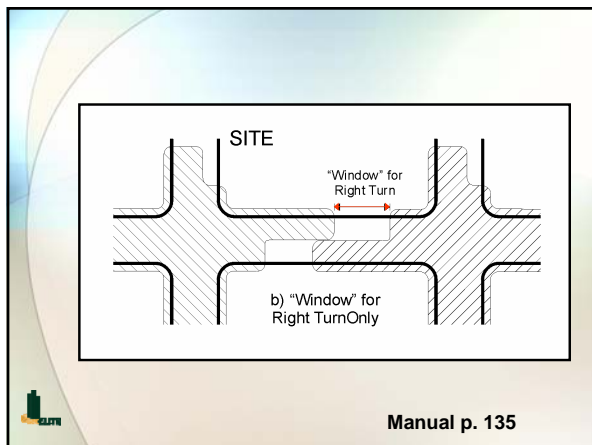
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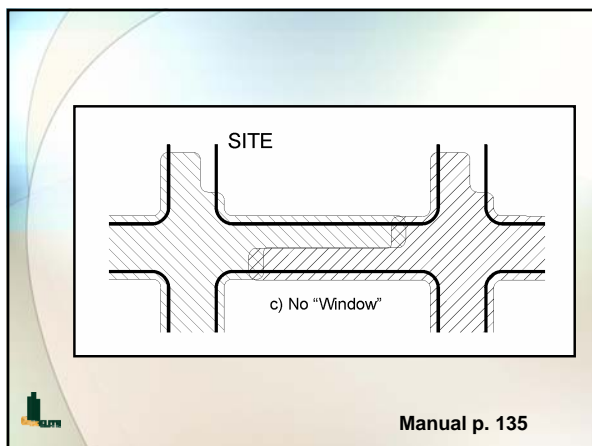
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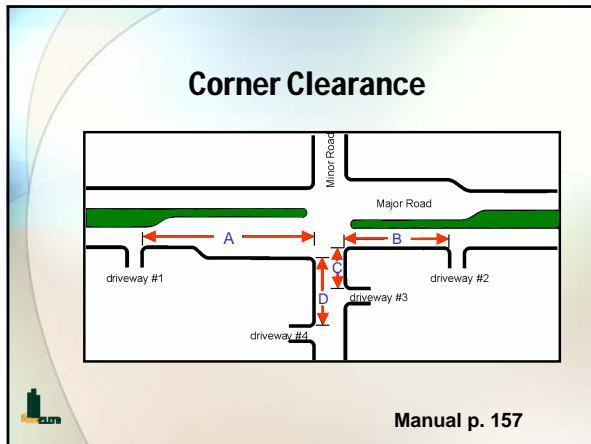
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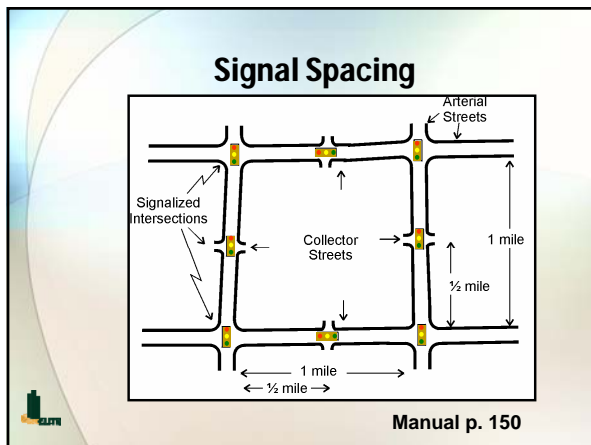
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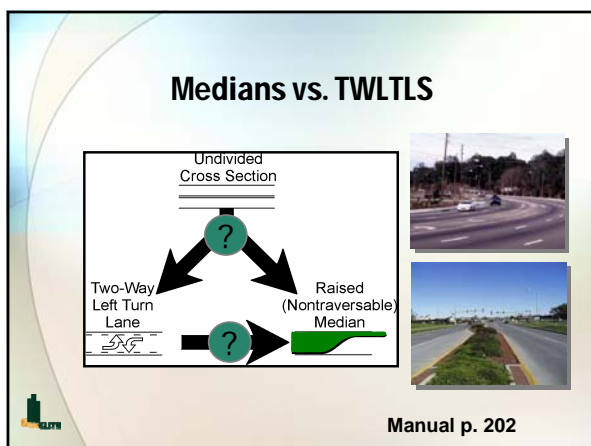
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## When to Use Medians



- All new multilane arterials
- Existing multilane arterials with ADT > 24,000 vpd
- Rural multilane roadways
- High crash locations or areas where left turn should be limited for safety
- Multilane roadways with high pedestrian activity




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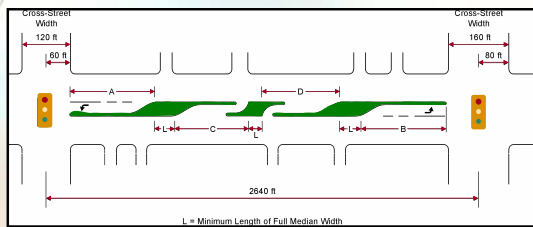
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## Median Opening Spacing



Manual p. 208

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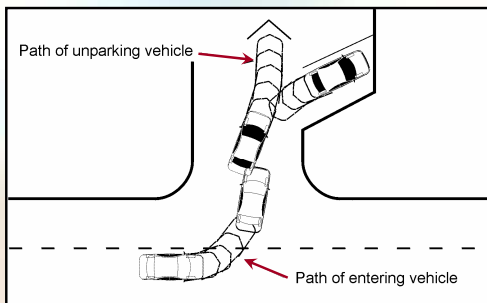
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## Inadequate Throat Length



Manual p. 183

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### Minimum Throat Lengths

Minimum Driveway Throat Length at Signalized Access Drives		
Number of Egress Lane	Minimum Throat Length	
	Feet	Meters
2	75	25
3	200	60
4	300	95

Manual p. 185

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## Problems with Frontage Roads



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## Rear Service Road

Note how the service road flares out to provide good separation at the side street.



Manual p. 191

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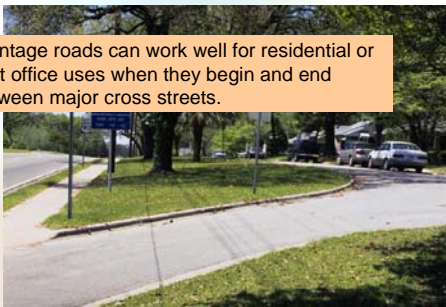
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## Residential Frontage Road

Frontage roads can work well for residential or light office uses when they begin and end between major cross streets.



Manual p. 194

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## Module 6: Other Chapters and Appendices


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## Corridor Access Management Plans



- Public process
- Corridor analysis
- Plan development
- Plan implementation
- Cooperative Agreements

135th St. AM Plan, Overland Park, KS

Manual p. 83




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## Permitting & Administration

- How can we accomplish access spacing in the "real world"?
- Access permitting best practices
- TIS & Variance procedures



Manual p. 215




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## Internal & Intergovernmental Coordination

- Consistent state/local standards, procedures
- Early communication on permit requests
- Involve DOT early in subdivision review
- Combined review committees
- Intergovernmental agreements



**Manual p. 247**

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## Public Involvement

- Principles
- Techniques
- Strategies for Addressing Public Concerns



**Manual p. 257**

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## Right-of-way & Legal Considerations

- Police Power vs. Eminent Domain
- Right to Access
- Circuity
- Regulatory Conditions & Exactions
- Importance of Sound Regulations and Consistency



**Manual p. 269**

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## Appendix A – Techniques

- Description
- Application
- Special Considerations
- Advantages & Disadvantages
- Examples
- References



Acquisition of Access Rights

Manual p. 281

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## Other Appendices

- Appendix B – Case Examples of State and Local Access Categories
- Appendix C – Statute Prototypes & Regulatory Elements
- Appendix D – Glossary of Terms

Manual pp. 335-367

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## For Further Information

[www.cutr.usf.edu](http://www.cutr.usf.edu)  
[www.accessmanagement.info](http://www.accessmanagement.info)

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Center for Urban Transportation Research  
University of South Florida  
kwilliams@cutr.usf.edu  
813-974-9807



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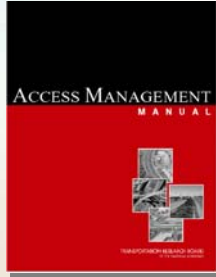
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## Thank you!

Presented by:

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