



# ACCESS MANAGEMENT: SAFETY FOR ALL ROAD USERS

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# Access Management: Safety for All Road Users

- What is Access Management
- Access Management Theory
- Access Management Techniques
- Access Management and Transit
- Access Management and Bicyclists and Pedestrians
- Application of Access Management
- Innovative Intersections
- Websites

# What is Access Management

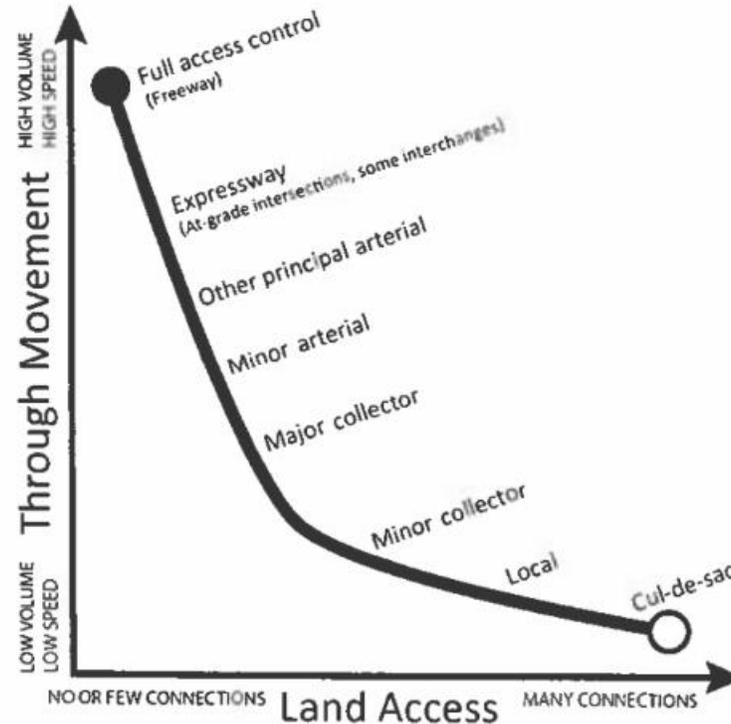
- The coordinated planning, regulation, and design of access between roadways and land development<sup>1</sup>
- The goals of access management are:
  - Enhanced safety
  - Increased fuel efficiency and reduced emissions
  - Preserve critical roadway capacity
  - Increase economic development opportunities
  - Preserve property owners' reasonable access

<sup>1</sup> From *Access Management Manual*, Second Edition

# Access Management Basics: Theory

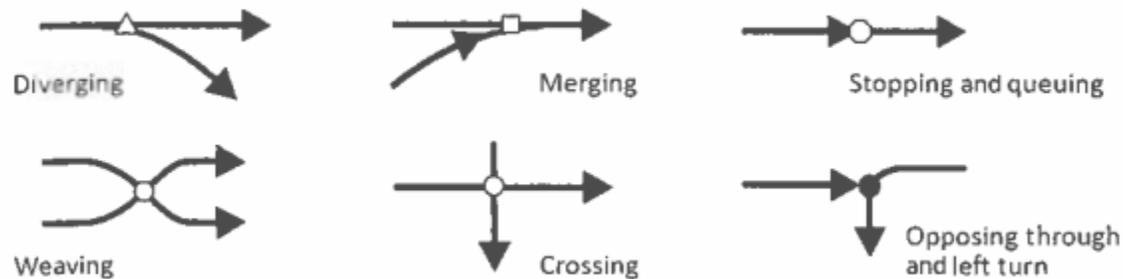
- Functional Classification

- Techniques vary based upon classification of road
- Classification describes purpose of road (land access versus through movement)

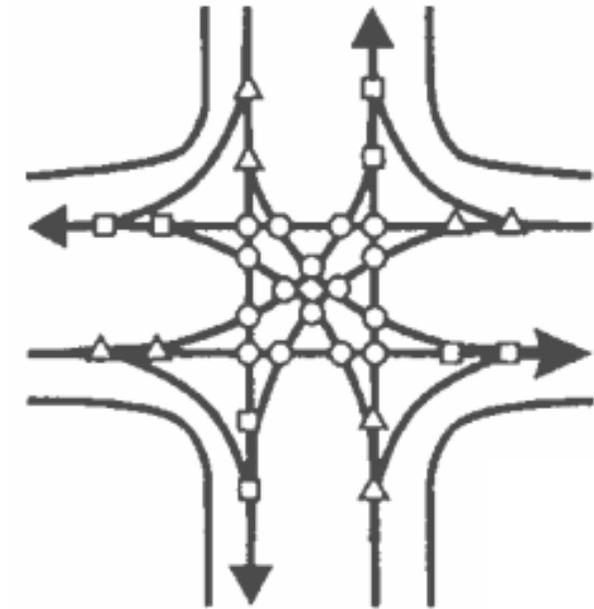


## Access Management Basics: Theory (cont'd)

- Conflict Points
  - Where traffic movements cross, merge, diverge
  - Minimize number to reduce information load
  - Separate to provide safe areas



Types of Conflict Points

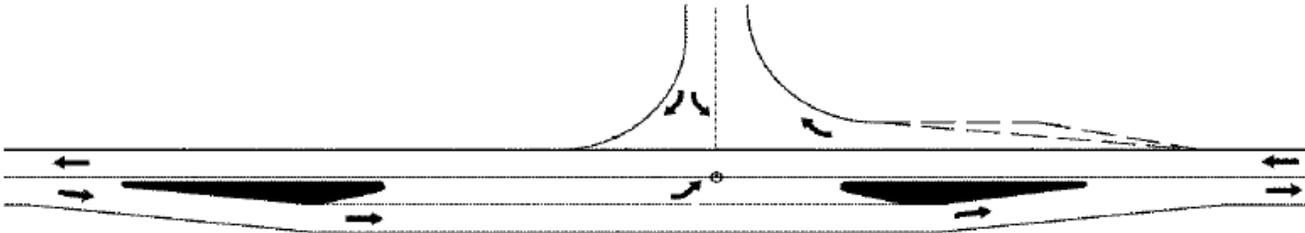


Typical 2-Lane 4-Leg Intersection

Both figures from *Access Management Manual, 2<sup>nd</sup> Edition*

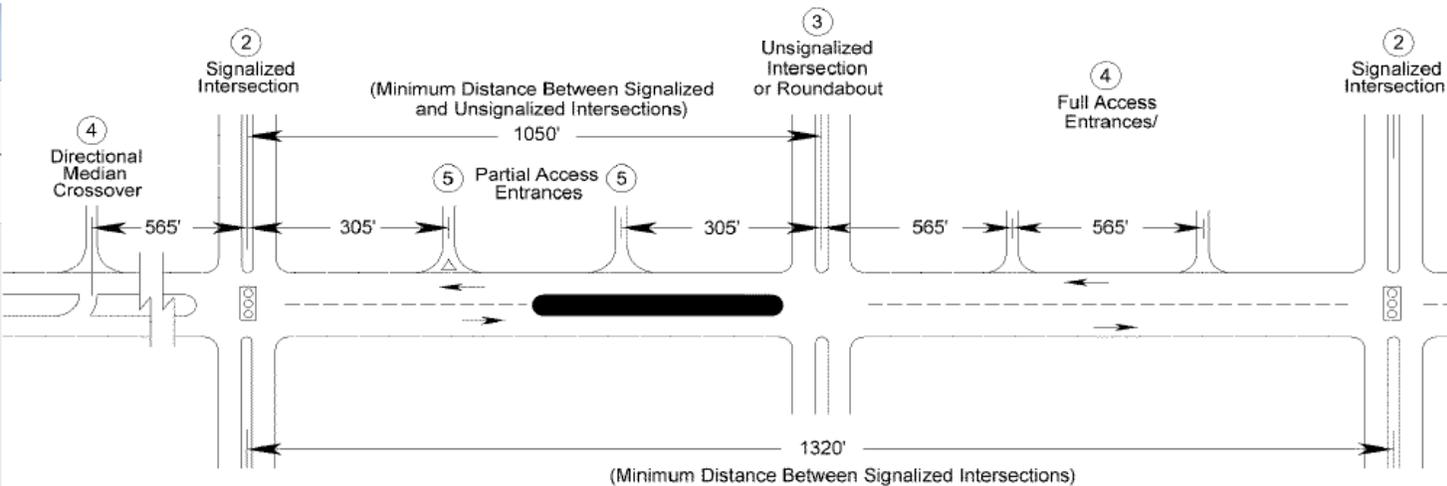
## Access Management Basics: Theory (cont'd)

- Reducing Speed Differential
  - Greater speed differential generally means greater crash severity
  - Merge/diverge less dangerous than crossing
  - Decel and accel lanes allow equalization of speed at point of conflict



# Access Management Basics: Techniques

- Entrance spacing
  - Varies by intersection type and functional classification (in Virginia)
  - Prohibition of entrances in functional area of intersection
  - Corner clearance
- Joint use entrances
- Cross-parcel access



Example: Principal Arterial with 35 to 45 mph Speed Limit.

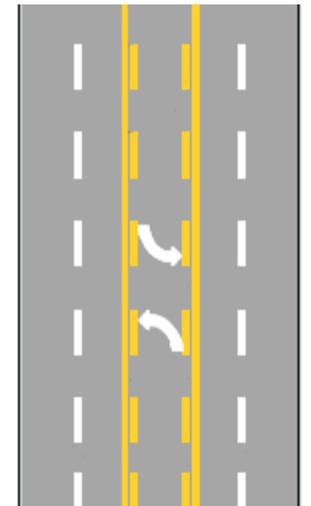
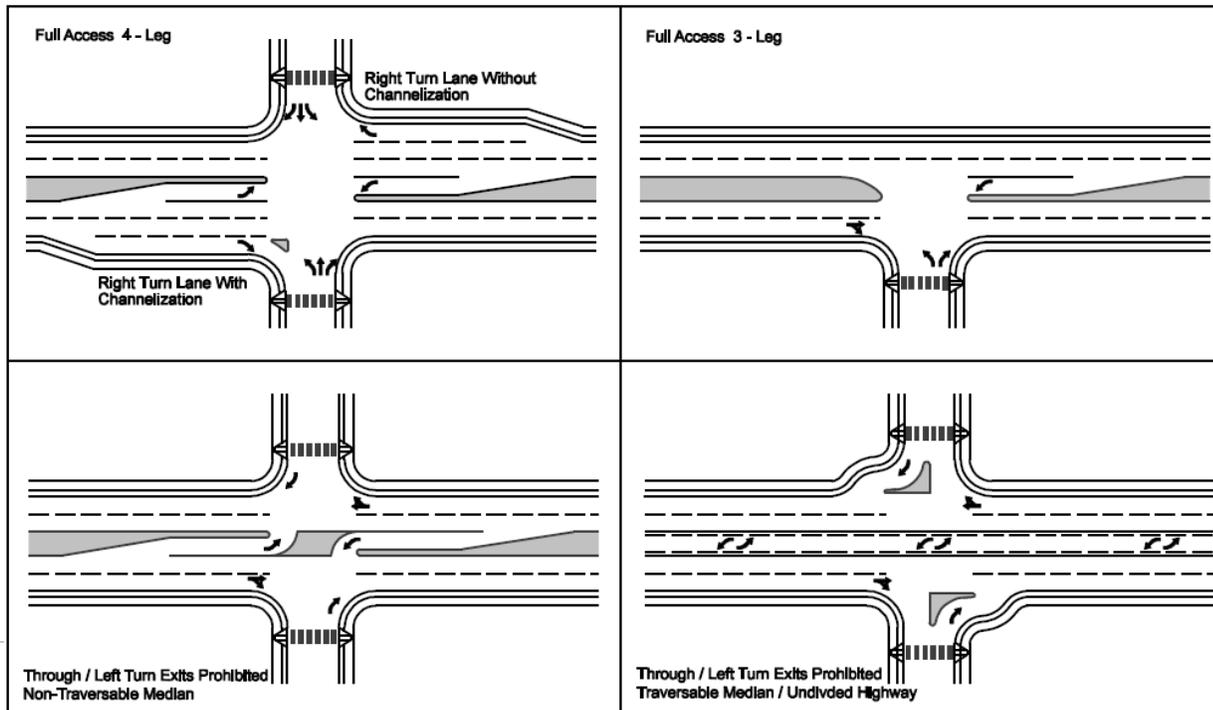
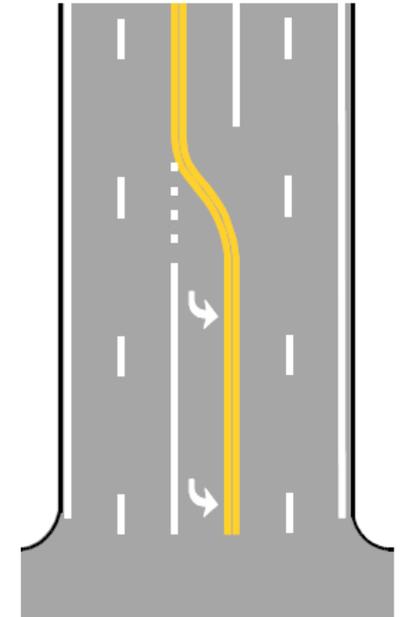
Cycle Length (s)	Spacing			
	1/8 mi (600 ft)	1/4 mi (1,320 ft)	1/3 mi (1,760 ft)	1/2 mi (2,640 ft)
	Progression Speed (mph)			
60	15	30	40	60
70	13	26	34	51
80	11	22	30	45
90	10	20	27	40
100	9	18	24	36
110	8	16	22	33
120	7.5	15	20	30

TABLE 2-1 RELATIONSHIP BETWEEN SPEED, CYCLE LENGTH, & SIGNAL SPACING

Source: TRB *Access Management Manual*, 2003

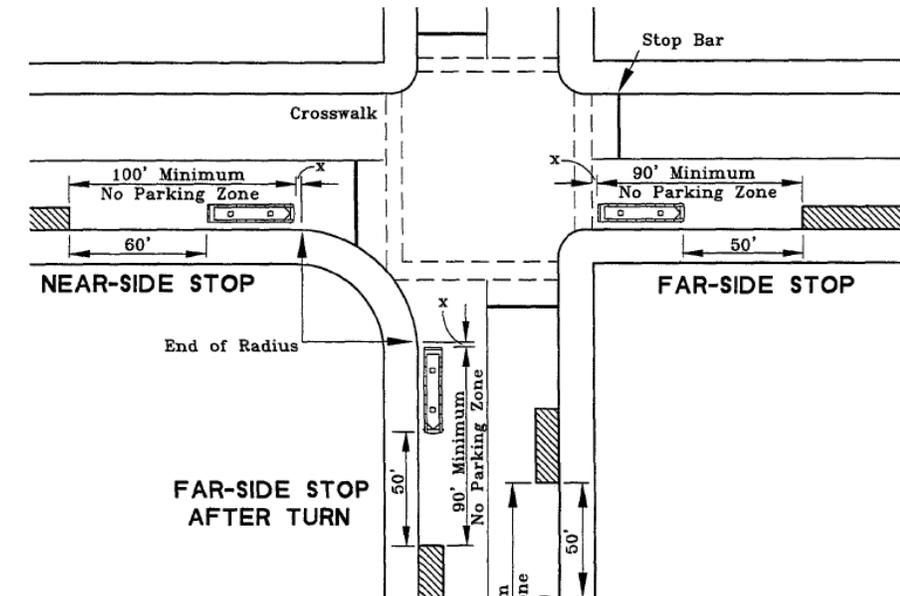
# Access Management Basics: Techniques (cont'd)

- Medians
  - Crossovers and directional crossovers, TWTL
- Auxiliary lanes
  - Right and left turn lanes
  - Acceleration and deceleration lanes
- Entrance design



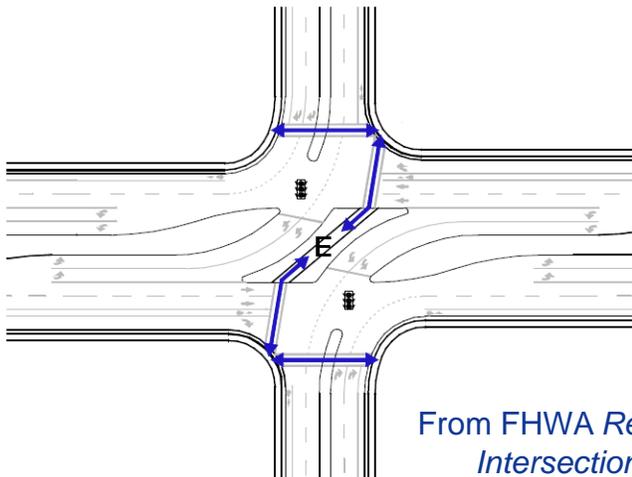
# Access Management: Public Transit

- Access management and transit
  - Buses generally deal with same issues as autos and trucks
  - Managed streets can provide more reliable service
  - Medians can provide space for light rail or bus rapid transit lanes/stops
  - Location of transit stops is critical

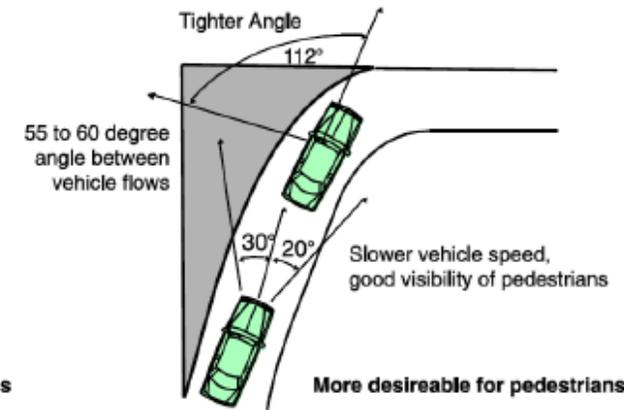
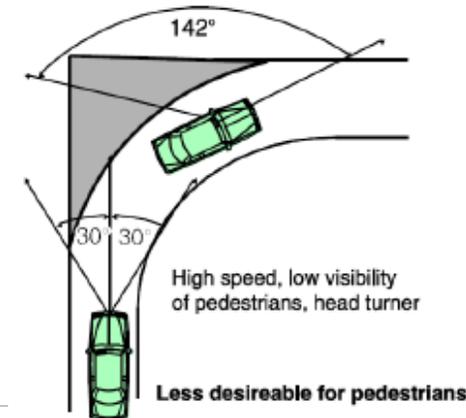


# Access Management: Bicyclists and Pedestrians

- Some techniques must be carefully considered
  - Turn lanes add width for pedestrian crossings
  - Right turn slip lanes can increase bike and ped crashes
  - Large block lengths can inhibit safe pedestrian crossings
- Some techniques can be friendly to these modes
  - Medians can provide refuge areas
  - Consolidating entrances reduce pedestrian and bicyclist conflict points
  - RCUTS can handle signalized pedestrian crossing movements



From FHWA *Restricted Crossing U-Turn Intersection Informational Guide*



From FHWA *Alternative Intersections Presentation* 11

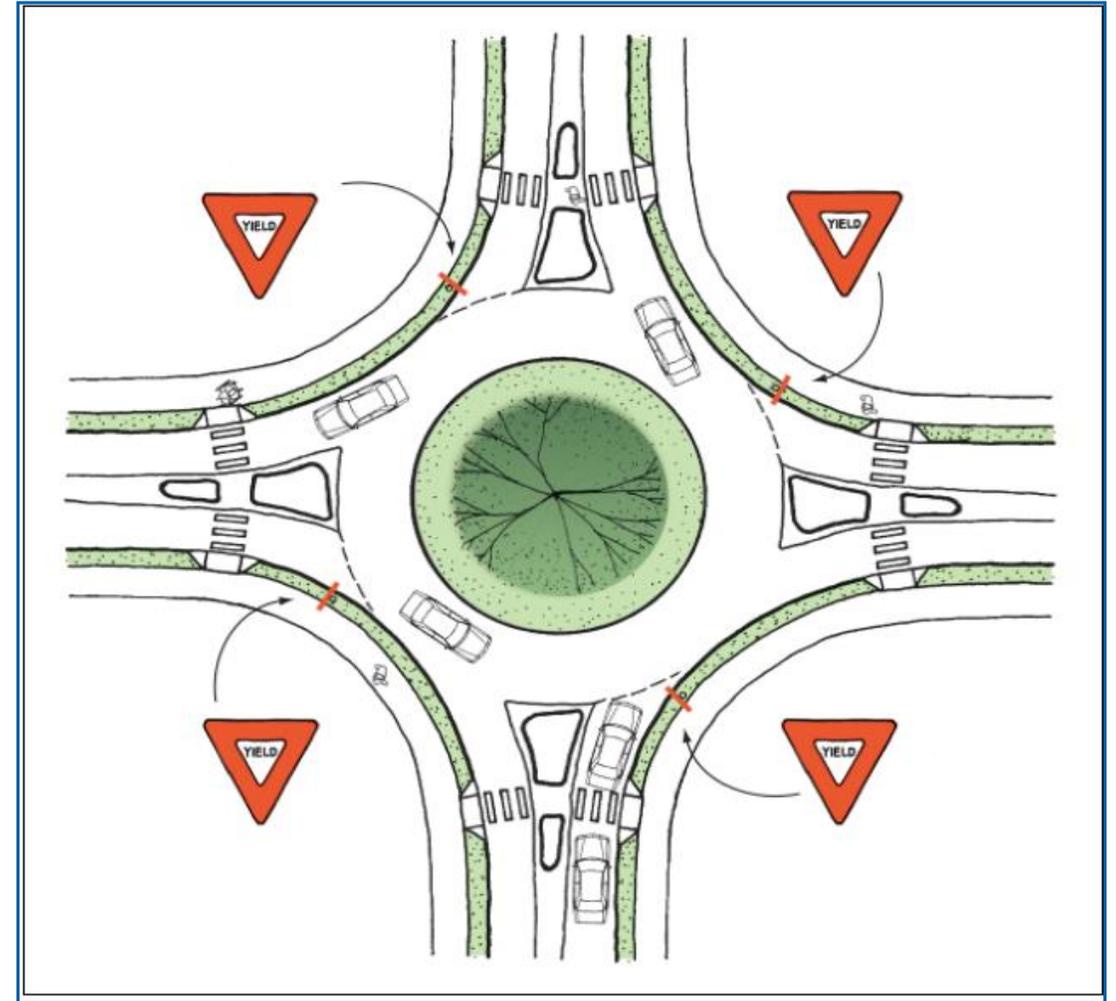
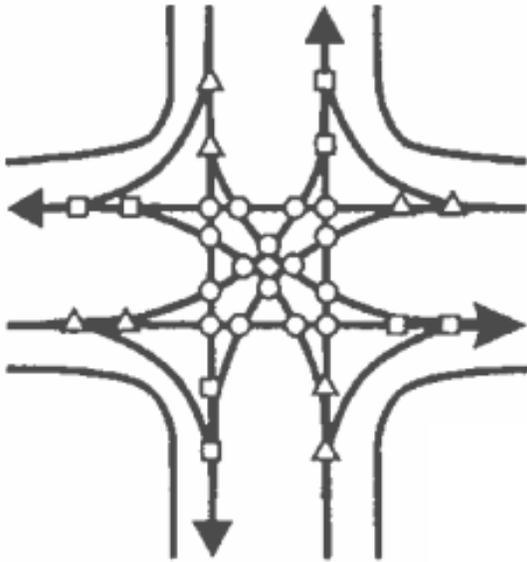
# Application of the Basics: Entrance Spacing/Consolidation

- Conflict Points
  - Limit number of conflict points
  - Separate conflict points
  - Reduce pedestrian exposure



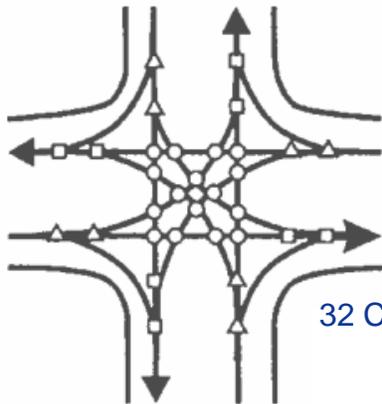
## Application of the Basics: Roundabout Example

- Conflict Points
  - Limiting number of conflict points
  - Separating conflict points
- Speed Differential

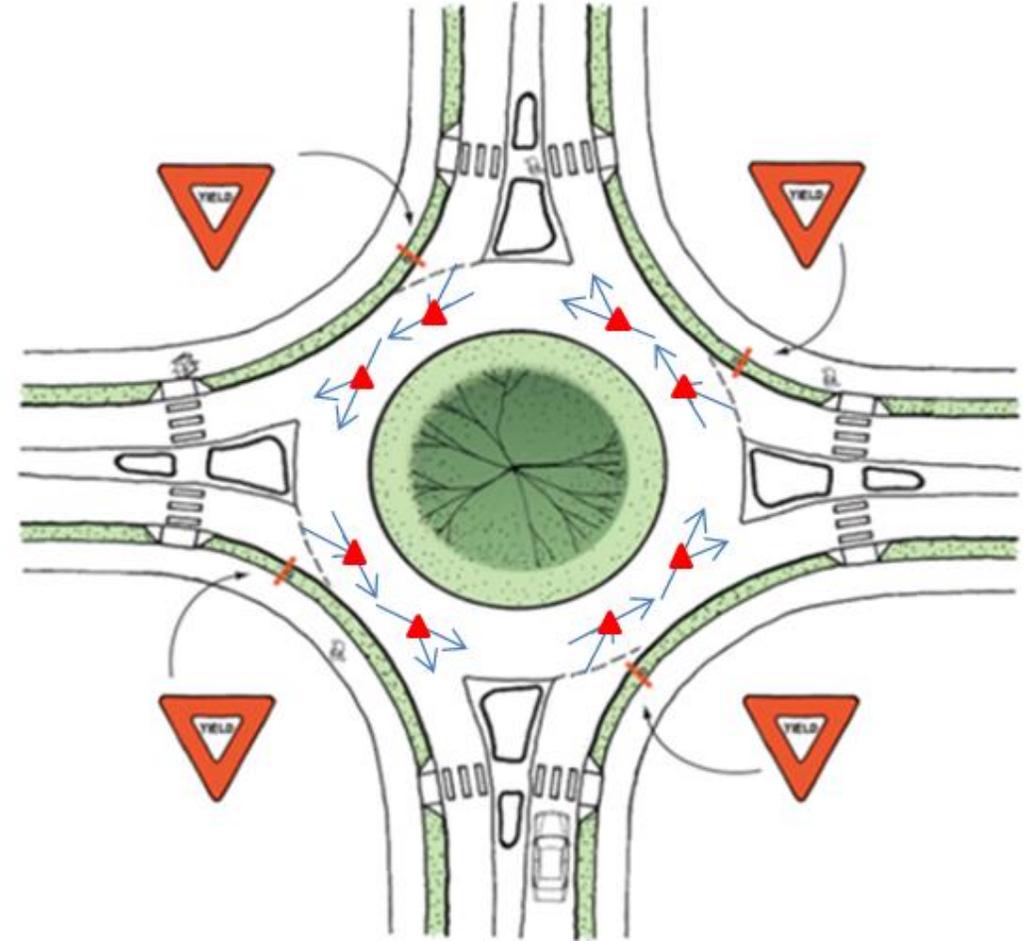


# Application of the Basics: Roundabout Example (conflict points)

- Conflict Points
  - 4 merging
  - 4 diverging
  - Possibility of 4 stopping and queuing
- Other Elements
  - Pedestrian crossings in driver sight lines
  - Vehicle speeds reduced
  - Merge/diverge replace crossing conflicts



32 Conflict Points



# Innovative Intersections: Spot the Basics

 **Restricted Crossing U-Turn (RCUT)**



*Highway 9 East at Liberty Church Road, Loris, S.C.*

**An RCUT is also known as:**

- Superstreet intersection
- J-turn intersection
- Reduced conflict intersection
- Synchronized street intersection

# Innovative Intersections: Spot the Basics (Quadrant Roadway)



# Access Management Websites

- TRB
  - Committee on Access Management: <http://www.accessmanagement.info/>
  - Committee Facebook Page: <https://www.facebook.com/accessmanagement.info>
- FHWA
  - Access Management: [https://ops.fhwa.dot.gov/access\\_mgmt/](https://ops.fhwa.dot.gov/access_mgmt/)
  - Corridor Access Management:  
[https://safety.fhwa.dot.gov/provencountermeasures/corridor\\_access\\_mgmt/](https://safety.fhwa.dot.gov/provencountermeasures/corridor_access_mgmt/)
- VDOT
  - Access Management Regulations:  
[http://www.vdot.virginia.gov/info/access\\_management\\_regulations\\_and\\_standards.asp](http://www.vdot.virginia.gov/info/access_management_regulations_and_standards.asp)
  - Innovative Intersections:  
[http://www.virginiadot.org/info/alternative\\_intersection\\_informational\\_design\\_guides.asp](http://www.virginiadot.org/info/alternative_intersection_informational_design_guides.asp)
  - Arterial Preservation:  
[http://www.virginiadot.org/programs/vdot\\_arterial\\_preservation\\_program.asp](http://www.virginiadot.org/programs/vdot_arterial_preservation_program.asp)

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