

APPENDIX D.

ACCESS MANAGEMENT CONSIDERATIONS FOR MODAL EMPHASIS

The following Appendix summarizes the recommended standards for access management by Multimodal Corridors in these Guidelines. The original matrix is in spreadsheet format and is laid out in individual page formats in this Appendix. Additional information about the Multimodal Center typology and recommended metrics is located in Chapter 3 of these Guidelines.

The frequency and spacing of intersections and driveways can affect how well a corridor accommodates different modes. Generally Placemaking Corridors, except for Local Streets, should have limited driveway access points to reduce conflict points for all modes. Automobile access to buildings is preferably oriented to the back of buildings, or along the side in some instances. Except for Local Streets in residential neighborhoods, access to properties should be provided in back of the buildings with a backage (or reverse frontage) road.

The following discussion examines the effects of intersection and driveway spacing on each modal emphasis. Table D-1 provides recommendations for spacing for each intersection and entrance type relative to the Minimum Spacing Standards in the VDOT Road Design Manual.

Access Management Effects on Modal Emphasis

Pedestrian

Pedestrians will typically walk anywhere they feel safe. They do not follow designated travel paths like automobiles and are more likely to ignore visual cues. They may walk in the street instead of on the sidewalk, cross the street where there is no crosswalk, cross the street outside of the pedestrian signal phase, and they may be less aware of their surroundings (texting, talking, etc). Pedestrians will usually take shortcuts to avoid going out of the way for a designated crosswalk. Providing frequent crossings minimizes the likelihood that pedestrians will cross midblock and helps motorists to stay alert to the possible presence of pedestrians.

The ITE/CNU Guidebook recommends providing smaller block lengths for walkable thoroughfares, with block lengths ranging from 200 to 660 feet.¹ Pedestrians generally need frequent crossings to access destinations on both sides of the street. This is especially important on major avenues where the traffic volumes may be high. Frequent driveway cuts and partial access intersections are discouraged on corridors with pedestrian emphasis. Midblock pedestrian crossings should not be necessary if block lengths are short enough.

At intersections, especially high-volume intersections, pedestrians need high-visibility crosswalks. Curb extensions are recommended when on street parking is provided; on street parking is generally beneficial with pedestrian emphasis. Median refuges are beneficial for roads with more than two travel lanes, and especially for unsignalized intersections for larger street types where there is moderate to heavy vehicular traffic, as they allow pedestrians to focus on crossing one direction at a time and provide a safe space to wait for a gap in oncoming traffic. At signalized intersections, pedestrian count-down signals, adequate crossing times, and shorter cycle lengths are strongly recommended. Small curb return radii are beneficial for pedestrians; channelized right turn lanes should be discouraged. Driveway cuts, if necessary, should be 24 feet wide or less.

¹ ITE/CNU's *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, Chapter 3 provides guidance on block length and street spacing.

Bicycle

Frequent driveway entrances can pose safety problems for bicyclists. Motorists pulling out of driveways may not be looking for bicyclists riding closer to the edge of the roadway, and especially if bicyclists are riding on the sidewalk. Motorists may attempt to pass a bicyclist and immediately turn off the road into a driveway, which creates a serious conflict. Bicyclists turning left to access a destination on the other side of the road may need to stop to wait for a gap in oncoming traffic. Even with proper hand signals, vehicles behind the bicyclist may not be expecting the cyclist to slow down or stop, and run the risk of collision, which is extremely dangerous for the cyclist.

Transit

There are advantages and disadvantages to access management for transit modal emphasis. For commuter and express bus service, frequent intersection and driveway spacing will create more conflict points and slow speeds. For local service, more frequent intersections will provide more opportunities for bus stops. More frequent stops slows transit travel speeds, but it makes it more convenient for transit riders to access their destinations. This is the classic mobility vs. accessibility dilemma of transit and transportation planning.

Green

Access management has little effect on green modal emphasis. Tree plantings, shrubbery and other landscaping elements are interrupted by driveway entrances. As with the other modal emphases, driveway access points should be limited.

Parking

Frequent driveway openings limit the number of on street parking spaces. Parallel-parked cars limit the sight distance of vehicles that pull out of driveways, creating potential safety hazards. Corridors with parking modal emphasis should consolidate driveway openings wherever possible. Backage (or reverse frontage) roads can provide access to properties without curb cuts. These backage roads would ideally connect to other roads that intersect the main road with a full-access intersection. This configuration provides continuous length for on street parking and minimizes conflicts between vehicles maneuvering into parking spaces and vehicles pulling out of driveways.

Spacing Recommendations by Modal Emphasis

The following table provides recommendations for intersection and entrance spacing for each Modal Emphasis relative to the Minimum Spacing Standards in the VDOT Design Manual.

A indicates that intersections of this type should be spaced as closely together as possible on corridors with this Modal Emphasis. The VDOT minimum spacing standards provide a baseline for minimum spacing. Operational analyses may indicate that more frequent (i.e. shorter) spacing may be appropriate. The shortest spacing for these types of intersections should be used whenever possible.

B indicates that the VDOT minimum spacing standards are likely the best option. Intersections of these types with these Modal Emphases may have mixed impacts. The VDOT minimum spacing standards will provide an adequate number of connections and crossings for each mode. Less frequent (i.e. longer) spacing will make accessing destinations for difficult, especially for pedestrians and bicyclists.

C indicates that these types of entrances should be minimized (i.e. less frequent or longer spacing between entrances). These types of entrances create conflict points and safety problems.

Table D-1 – Access Management Considerations for Modal Emphasis

ACCESS MANAGEMENT CONSIDERATIONS FOR MODAL EMPHASIS					
	Pedestrian	Bicycle	Transit	Green	Parking
Signalized Intersections	A	A	A	B	B
Unsignalized Intersections & Crossovers	B	A	B	B	B
Full Access Entrances	C	C	C	C	C
Partial Access Entrances	C	C	C	C	C

A = Use VDOT minimum. If possible, provide more frequently than VDOT minimum.

B = Use VDOT minimum. Neutral factor to Modal Emphasis, or contains both benefits and drawbacks.

C = Provide maximum possible distance between intersections or entrances.

See VDOT Road Design Manual Appendix F for types of access points.