

City of Columbia
Access Management Regulations

Adopted September 12, 2024

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Amendments

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Chapter 1: Introduction

1.1 Purpose

Access management is the control of driveways and intersections to manage access to land development, while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity, and speed. Implementing an access management program based on the strategies and principles described in this ordinance will encourage smooth and safe traffic flow.

This document describes transportation design requirements that present a comprehensive approach to access management within the City of Columbia. This ordinance is intended to better connect land use and transportation within the City. These requirements are presented to provide improved transportation throughout the corporate limits.

1.2 Applicability and Jurisdiction

Except as otherwise specified or required by law, these rules and regulations govern access management, along with all associated improvements, within the street network of the City of Columbia, Maury County, Tennessee, and shall apply to all areas within the jurisdiction of the City of Columbia, herein referred to as the City. Variations or exceptions to any of the standards of this Ordinance shall be approved by the City Engineer. Any appeals to the City Engineer's determination or these regulations shall be made to the Columbia Municipal Planning Commission (CMPC) as specified in **Chapter 4: Permitting and Appeals** of the Ordinance.

1.3 Relationship to Other Laws and Agreements

1.3.1 Conflict with Other Public Laws, Ordinances, Regulations, or Permits

Where provisions of this ordinance impose greater restrictions than those of any other City, State, or Federal regulation, statute, or ordinance the provisions of this ordinance shall be controlling. Where the provisions of any City, State, or Federal regulation, statute, or ordinance imposes greater restrictions than this ordinance, the provisions of such City, State, or Federal regulation, statute, or ordinance shall be controlling.

1.3.2 Conflict with Private Agreements

This Ordinance is not intended to revoke or repeal any easement, covenant, or other private agreement. However, where the regulations of this ordinance are more restrictive or impose higher standards or requirements than such easement, covenant, or other private agreement, then the requirements of this ordinance shall govern. Nothing in this Ordinance shall modify or repeal any private covenant or deed restriction, but such covenant or restriction shall not excuse any failure to comply with this Ordinance. The City shall not be obligated to enforce the provisions of any easements, covenants, or agreements between private third parties.

1.3.3 Vested Property Rights

In accordance with TCA 13-4-310, the following subsection specify the list of the specific types of plans approved, on or after January 1, 2015, that will cause a vested property right to be established. Vestment rights and periods shall be in accordance with TCA 13-4-310 and the Zoning Ordinance.

- A. Approval by the CMPC, or Administratively by Staff, of a Development Plan as required by Zoning Ordinance;
- B. Approval by the CMPC, or Administratively by Staff, of a Final Plat as required by the Subdivision Regulations;
- C. Approval by the City Council of a PUD Development Plan as required by the Zoning Ordinance; or,
- D. Approval by the CMPC of a Preliminary Plat, when not part of a PUD Development Plan, as required by the Subdivision Regulations.

1.3.4 Permits from other Government Agencies, Entities, and Departments

Prior to beginning any construction, the developer/contractor/property owner shall obtain all necessary permits as required by law. Such permits may include, but are not limited to: those required by the State of Tennessee, Maury County, and/or other City Departments, City Commissions, or City Boards. This includes any and all City Permits.

1.4 Background

This Ordinance is a product of the Connect Columbia comprehensive planning process that produced the Columbia Land Use Plan, Transportation Plan, and Parks and Greenways Plan. Access Management was identified early in the planning process as a critical element to implement the strategies for community and economic development in the City of Columbia. These regulations are presented to achieve the vision and goals of the Connect Columbia Comprehensive Plan.

1.5 Severability

It is hereby declared to be the intention of the City Council of Columbia, Tennessee, that the provisions of this Ordinance are separable in accordance with the following:

- A. If any court of competent jurisdiction shall adjudge any provision of this Ordinance invalid, such judgment shall not affect any other provision of this ordinance not specifically included in said judgment; and
- B. If any court of competent jurisdiction shall adjudge invalid the application of any provision of this Ordinance to a particular property, driveway, or other access, such judgment shall not affect the application of said provisions to any other property, driveway, or other access not specifically included in said judgment

Chapter 2: Access Management

Access management is a set of techniques to allow for the control of access to highways, arterials, collectors, and other, select streets within Columbia. The result is a more safe and efficient street network for users. Without access management, the transportation network experiences an increase in traffic congestion, and accidents throughout the overall transportation network.

2.1 Importance of Access Management

With less state and federal monies available for new transportation projects, the need for effective transportation systems management strategies is greater than ever before. By managing access, the City aims to directly increase public safety, extend the life of major roadways, reduce traffic congestion, and improve both the appearance and quality of the built environment.

Without access management, the function and character of major transportation corridors can deteriorate rapidly. Failure to manage access is associated with the following adverse social, economic, and environmental impacts:

- An increase in vehicular crashes
- More collisions involving pedestrians and cyclists
- Accelerated reduction in roadway efficiency
- Unsightly commercial strip development
- Degradation of scenic landscapes
- More cut-through traffic in residential areas due to overburdened arterials
- Homes and businesses adversely impacted by a continuous cycle of widening roads
- Increased commute times, fuel consumption, and vehicular emissions as numerous driveways and traffic signals intensify congestion and delays along major roads

Poor access management comes with both direct and indirect costs. Direct costs include adverse impacts to businesses through the difficulty of customers entering and exiting businesses safely. Access to corner businesses may be blocked by queuing traffic. Customers begin to patronize businesses with safer, more convenient access and avoid businesses in areas of poor access design. Gradually the older developed areas begin to deteriorate due to access and aesthetic problems, and investment moves to newer better-managed corridors. Indirect costs include lost time due to increased traffic congestion.

After access problems have been created, they are difficult to solve. Reconstructing an arterial street is costly and disruptive to the public and abutting homes and businesses. The shallow property depth, multiple owners, and right-of-way limitations common to older corridors generally preclude effective redesign of access and site circulation. In some cases, a new arterial or bypass must be built to replace the functionally obsolescent roadway, and the process begins again in a new location. Access management can help stop this cycle of functional obsolescence, protecting both public and private investment in major transportation corridors.

2.2 Safety

Research in the last 50 years has consistently shown that Access Management increases roadway safety. As outlined in the Access Management Manual of the Transportation Research Board (TRB), the reduction of traffic conflict points, higher design standards for access points, and increased awareness/response time for drivers has improved safety on the nation's highways and arterials. Four key observations have come to the forefront:

1. Increasing the number of access points on a roadway will increase its crash rate.
2. Roads with medians are safer than undivided roads, or roads with two-way left- turn lanes (TWLTL).
3. It is safer for vehicles to make a U-turn and a right turn, than to make a direct left turn into or from a driveway.
4. Medians improve pedestrian safety.

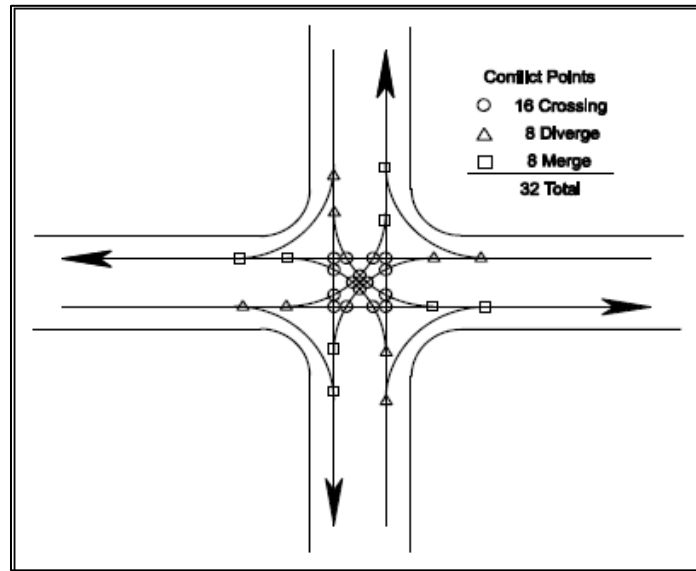
2.3 Ten Principles of Access Management

Most, if not all, current access management policies are derived from the Transportation Research Board's (TRB) Access Management Manual, which was published in 2003 and updated in 2014. TRB describes ten (10) principles of access management, which were derived from the organization's expertise in transportation. They include the following:

1. Provide a Specialized Roadway System: Design and manage roadways according to their primary functions.
2. Limit Direct Access to Major Roadways: Roadways that serve higher volumes of through traffic need more access control to preserve their function.
3. Promote Intersection Hierarchy: An efficient transportation network provides appropriate transitions from one functional classification to another. This results in a series of intersection types that range from the junction of two freeways or a freeway and a major arterial to a driveway connecting to a local street.
4. Locate Signals to Favor "Through" Movements: Long, uniform spacing of intersections on major roadways enhances the ability to coordinate signals and to ensure continuous movement of traffic at the desired speed.
5. Preserve the Functional Area of Intersections and Interchanges: The functional area of an intersection or interchange is the area that is critical to its safe and efficient operation. Access connections too close to these intersections or interchange ramps can cause serious traffic conflicts.
6. Limit the Number of Conflict Points: A less complex driving environment is accomplished by limiting the number and type of conflicts between vehicles, vehicles and pedestrians, and vehicles and bicyclists (**Figure 1**).
7. Separate Conflict Areas: Separating conflict areas helps to simplify the driving task and contributes to improved traffic operations and safety.

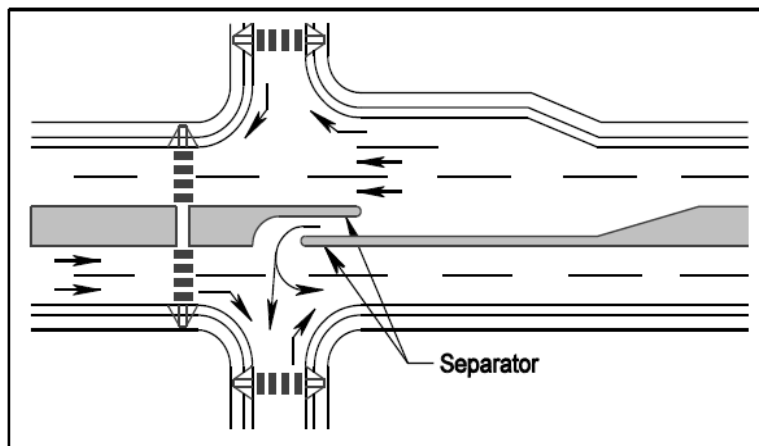
8. Remove Turning Vehicles from Through Traffic Lanes: Turning lanes reduce the severity and duration of conflicts between turning vehicles and improves the safety and efficiency of intersections.
9. Use Non-traversable Medians to Manage Left Turn Movements: Non-traversable medians and other techniques that minimize left turns are effective in improving roadway safety and efficiency (**Figure 2**).
10. Provide a Supporting Street and Circulation System: Well-planned communities provide a supporting network of local and collector streets to accommodate development, as well as unified property access and circulation systems. Interconnected street and circulation systems support alternative modes of transportation and provide alternative routes for bicyclists, pedestrians, and drivers.

Figure 1: Typical Points of Conflict, Intersection



Source: TRB Access Management Manual

Figure 2: Illustration of Directional Median Opening for Left turn and U-turn



Source: TRB Access Management Manual

These principles have been adopted and implemented by various states, including the Tennessee Department of Transportation (TDOT). They have also been employed by numerous local jurisdictions within Middle Tennessee that face growth pressures, including Metro Nashville, Franklin, Murfreesboro, and Mt. Juliet.

These principles provide the foundation for the strategies recommended in this ordinance

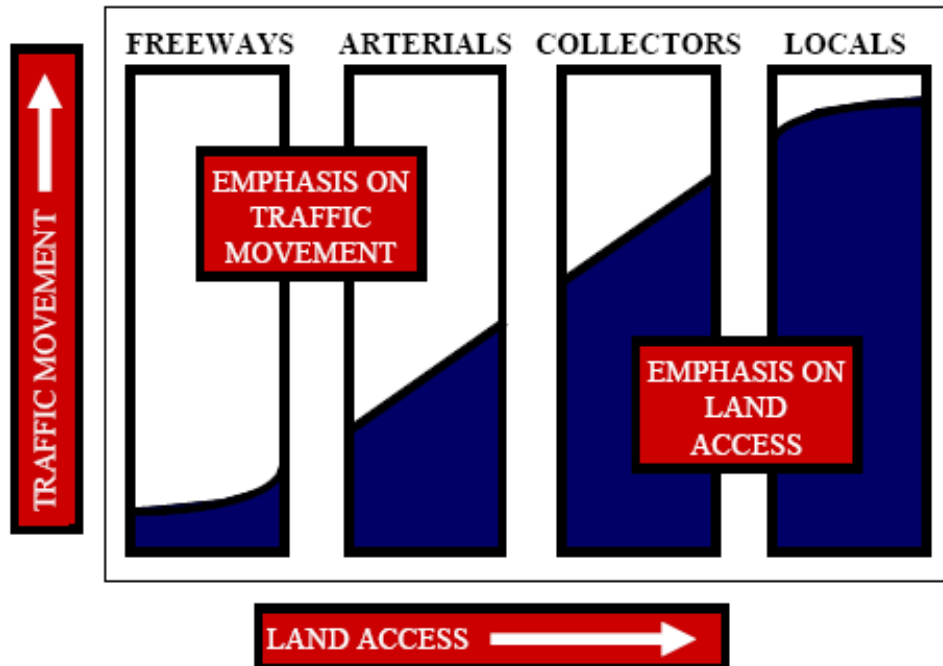
2.4 Roadway Function Classification

Roadway facilities are each classified according to the amount of access and mobility they provide or how the roadway functions. According to the Federal Highway Administration (FHWA), functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. As land access increases, traffic movement decreases on the lower classified roadways and vice versa – as land access decreases, traffic movement increases along the higher classified roads.

The functional classification of existing facilities is significant because it specifies the desired amount of access control or locations where vehicles can enter or leave a roadway. When there is no access control, intersecting roads or driveways may connect to the mainline at any point. With partial control of access there is minimum spacing of access locations. With full control of access, connections are only allowed at major crossroads – such as interchanges along an interstate. Full or partial control of access helps reduce traffic conflicts.

The diagram below shows schematically how various street classifications relate to each other in terms of movement and access. As land access increases, traffic movement decreases on the lower classified roadways and vice versa – as land access decreases, traffic movement increases along the higher classified roads.

Figure 3: Roadway Functional Class Concept



2.4.1 Classifications

New connections, streets, and developments mean functional classification of streets is constantly evolving. The functional classification of any street in the jurisdiction and those adjacent to the jurisdiction shall be defined by the Connect Columbia Master Transportation Plan, or as amended by the City Engineer. Any amendments to the functional classification of streets by the City Engineer shall be updated regularly on a map and shall be readily available to the public.

The Access Management Ordinance, in addition to the Connect Columbia Master Transportation Plan, defines the major roadway functional classifications as follows:

Interstate and Freeway Classification

Interstates and Freeways are limited access highways, typically with grade separated junctions, and no traffic signals or stop controlled intersections. Providing drivers with mobility is the highest priority on this type of facility, with access typically provided at intervals greater than 1-2 miles apart.

Principal Arterial Classification

The principal arterial system serves major centers of activity, the highest traffic volume corridors, and the longest trip destinations. Principal arterials carry a substantial percentage of trips entering and leaving the urban area. These roads typically link to the interstates and freeways.

Minor Arterial Classification

Compared to principal arterials, minor arterials are intended for trips of more moderate length and serve smaller geographic areas. They supplement and link to the principal arterial system and provide connections within a community.

Collector Classification

The collector street system connects local streets to the arterial street system, providing both access to land and traffic circulation within neighborhoods, commercial, and industrial areas.

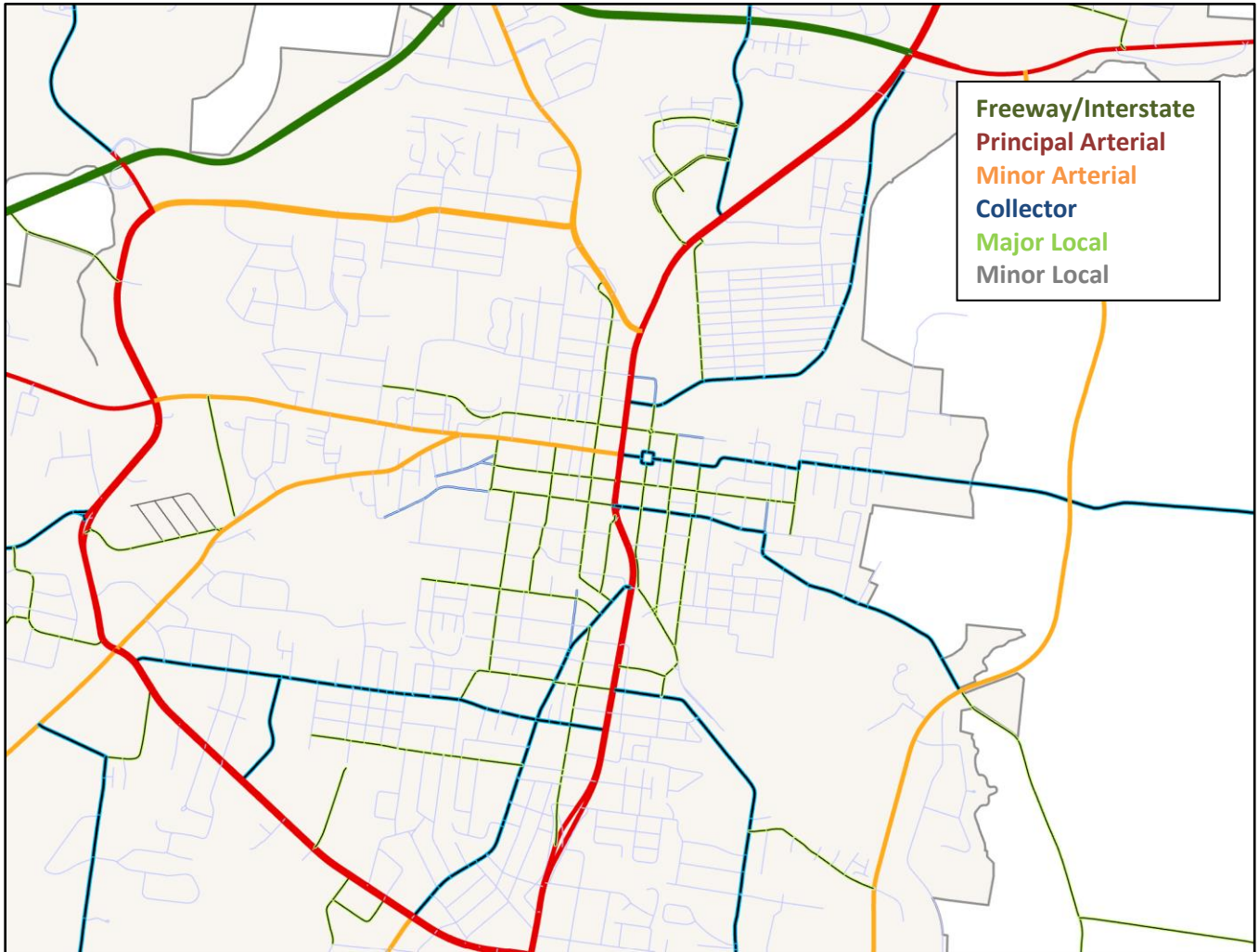
Major Local Street Classification

Major local streets, like collectors, provide a connection between local streets and collectors or arterials, however, major local streets accommodate lower levels of traffic and shorter trips.

Minor Local Street Classification

The minor local street system is made up of all other facilities not classified as one of the categories described above. Minor Local streets' primary function is to provide direct access to properties.

Figure 4: Roadway Functional Class System



Functional Classifications shown in Figure 4 are not official designations. Refer to the map on the Development Services Department webpage at www.columbiatn.com for the most up to date information.

As indicated in **Figure 4**, a functional roadway system facilitates a progressive transition in the flow of traffic from the provision of access to the provision of movement. Interstate (or Freeways) and arterial facilities primarily provide the function of moving vehicles, while collector and local streets concentrate more on providing access to individual properties, homes, and businesses.

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Chapter 3: Access Management Regulations

The following access management strategies will be utilized for roadways within the City of Columbia, Tennessee. At a minimum all standards for Interstate/Freeway roadway classifications shall meet or exceed the standards for Principal Arterial roadways.

3.1 Accesses

3.1.1 General Provisions

- A. It shall be unlawful for any person to cut, break, or remove any curb along a street except as herein authorized.
- B. This section shall be deemed to be supplemental to other sections regulating the use of public property, and in case of conflict, the more restrictive regulation shall govern.
- C. Decisions related to the provision of this ordinance shall be made by the City Engineer or designee (unless otherwise noted). If the City Engineer provides for a designee, this shall be noted, in writing, to the Director of Development Services.
- D. Adequate sight distance shall be provided for a passenger motor vehicle making all possible legal turning movements at the access point(s). This determination shall be made by the City Engineer of the Columbia.
- E. The specifications and guidelines set forth in this ordinance are to be applied to all roadways and properties that abut these roadways within Columbia, unless otherwise indicated.
- F. Any existing access locations that, at the time of enactment of this Ordinance, do not meet the minimum standards documented herein shall be deemed “non- conforming accesses”. These non-conforming accesses shall be allowed to remain in use until such time as a condition per **Section 4.3.1** is met. No changes shall be granted until the offending accesses are brought into conformity with **Chapter 3: Access Management Regulations**.
- G. Non-compliance with **Chapter 3: Access Management Regulations** shall be reason for denial of a permitting or development application request. The Planning Commission, the City Council, and/or City Staff may cite non-compliance with the regulations herein as grounds for deferral or denial of any relative application.

3.1.2 Location of Accesses

- A. In making a determination as to the location of driveway access, the following characteristics shall be considered:
 - 1. The characteristics of the proposed land use;
 - 2. The existing traffic flow conditions and the future traffic demand anticipated on the development and the adjacent street system;
 - 3. The location of the property;

4. The size of the property;
 5. The orientation of structures on the site;
 6. The number of driveways needed to accommodate anticipated traffic;
 7. The number and location of driveways on existing adjacent and opposite properties;
 8. The location and carrying capacity of intersections;
 9. The proper geometric design of driveways;
 10. The spacing between opposite and adjacent driveways;
 11. The internal circulation between driveways; and,
 12. The speed of the adjacent roadway.
- B. Application of the driveway access location and design policy requires identification of the functional classification of the street on which access is requested and then applying the appropriate spacing requirements.
- C. Radius Return
1. The radius return for an access on a state route shall be located according to the TDOT's 2015 Manual for Construction Driveway Entrances on State Highways.
 2. The radius return for all other access points shall be in accordance with the City of Columbia Engineering Standards and Specifications (ESS).
 3. In no instance, shall any radius return extend beyond the projection of a property line's intersection with the right-of-way line.
- D. When driveways are to be jointly used through an access easement by two or more property owners, the property line separation requirements may be waived. However, an access easement, signed by all property owners within the common development, must be provided to Development Services for review and approval. The access easement, once approved by Development Services, shall be recorded with the Maury County Register of Deeds.
- E. Access to arterial, collector, and major local streets shall be designed to ensure that off-street parking and loading areas shall not require backing maneuvers in a public street right-of-way.
- F. All developments shall have access to a public right-of way. Access shall be through a public right-of-way or through an access easement.
- G. The fewest possible access points shall be used to safely accommodate expected traffic volumes. The maximum number of access points that shall be granted is listed in **Table 1**.

Table 1: Maximum Number of Access Points

Type of Development	Maximum Number of Access Points
Individual Single-Family Residential Lot < 100' of primary frontage	1
Individual Single-Family Residential Lot ≥ 100' of primary frontage	2
Residential < 75 units	1
Residential ≥ 75 units	2
Non-residential < 30 required parking stalls	1
Non-residential ≥ 30 required parking stalls	2

1. **Table 1** shall not apply to streets, or street style accesses that function to provide increased interconnectivity for the public to adjoining properties or rights-of-way.
 2. Regardless of the number of granted access points, minimum spacing requirements as described in **Section 3.1.3** shall be maintained.
 3. For all types of development, excluding individual residential lots, a Traffic Impact Study or Traffic Access Study will be required to justify a greater number of access points than those granted in **Table 1**.
- H. For corner tracts, primary access shall be provided from the lesser (lowest classification) street. The determination as to the lesser (or greater) street shall be based on the functional street classification of the jurisdiction.
- I. No cuts through a left turn reservoir of a median shall be permitted in order to provide for left turn movements to driveway approaches.
- J. Driveways in right turn lane transition areas shall not be permitted.
- K. Driveways shall not be permitted in the corner clearance area of an intersection.
- L. When a development abuts more than one public street, access shall be provided from the lesser (lowest classification) street. Access to each abutting street may be allowed only if the following criteria are met:
1. It is demonstrated that such access is required to adequately serve driveway volumes and will not be detrimental or unsafe to traffic operations on public streets. The City Engineer may require the submittal of a traffic study which demonstrates that such access is required; and
 2. The minimum requirements for the corner clearance are met.

3.1.3 Access Spacing

Where possible, accesses shall be designed and constructed so as to align with driveways or streets on the opposite side of the street. Where accesses are not aligned or where other access points are within the vicinity, the proposed accesses shall meet the following minimum spacing requirements.

- A. Minimum required access spacing shall be based upon the functional classification of the roadway in accordance with **Table 2**.
- B. Access spacing shall be measured from the centerline of the proposed access to the nearest edge of existing driveway, excluding radius returns, or from the right-of-way line of a street, as indicated in **Figure 5**. Note that the spacing requirements apply to both opposite and adjacent driveways on streets without medians, but it only applies to adjacent driveways on streets with medians.

Figure 5: Measuring Driveway Access

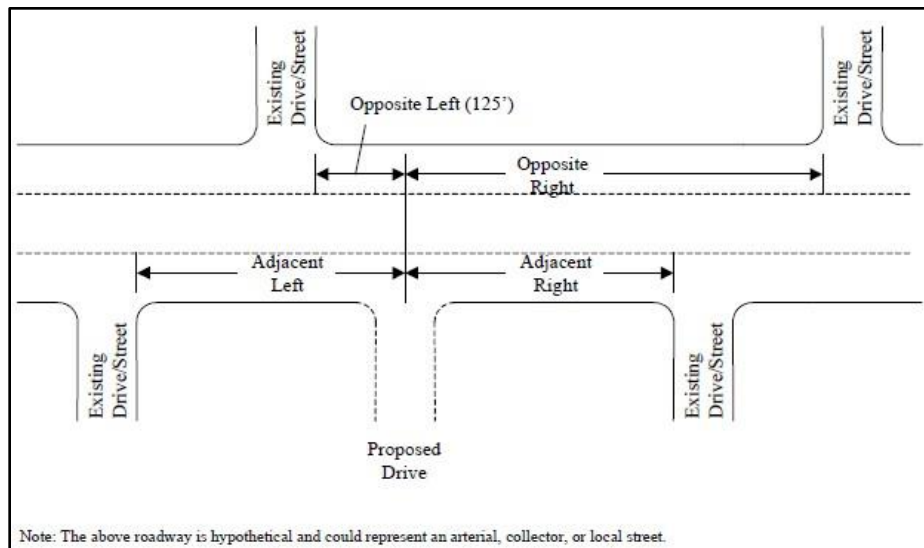


Table 2: Access and Driveway Spacing Requirements

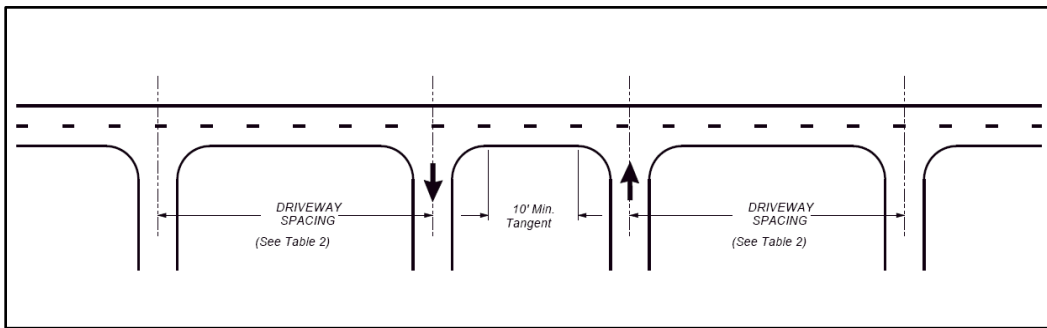
Functional Classification of Intersected Roadway	Distance (ft.)
Principal Arterial	440
Minor Arterial	330
Collector	220
Major Local	100
Minor Local, Non-Residential	50

**On roadways with medians, spacing requirements shall only apply to adjacent driveways*

C. Spacing of One-Way Driveways

1. The spacing criteria presented in **Table 2** does not apply to the distance between two one-way driveways (driveway pair) within the same development. Each leg of a driveway pair must be:
 - a. Separated by the distance shown in **Figure 6**; and
 - b. Separated from all other accesses in accordance with the spacing criteria in **Table 2**.

Figure 6: Spacing for One-Way Driveways

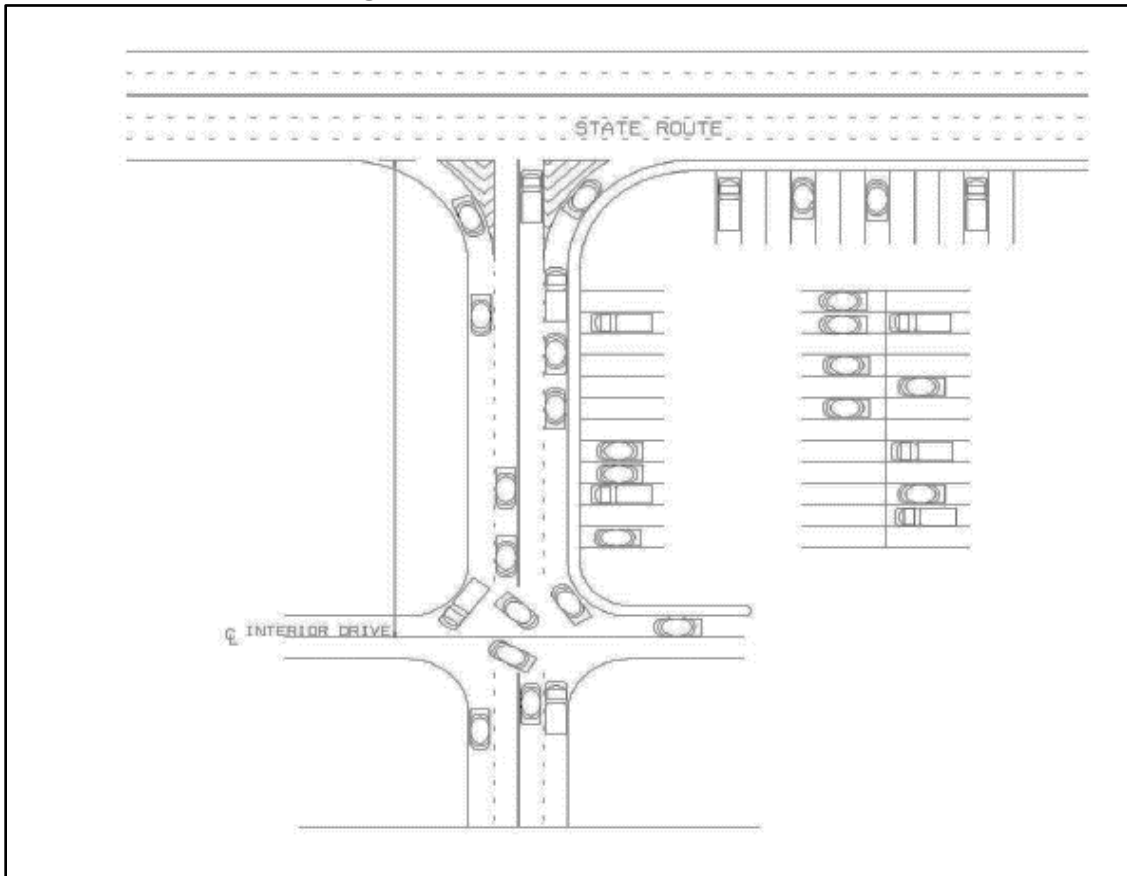


- D. The connection spacing requirements may be reduced in situations where they prove impractical, but in no case shall the permitted spacing be less than 80% of the applicable standard. Such a reduction in spacing requirements must still result, to the greatest extent possible, in uniform spacing between adjacent driveways.
- E. If the connection spacing of this code cannot be achieved, then a system of joint use driveways and cross access easements may be required.

3.1.4 Interior Circulation and Throat Depth

- A. Interior driveways, parking aisles, and on-site vehicular circulation patterns shall be designed in order to minimize impacts to public streets and rights-of-way and reduce conflict points. **Figure 7** provides an illustrative example.
- B. All uses, excluding single-family residential uses, shall provide a throat depth of at least thirty (30) feet, measured from the right-of-way line to provide for efficient and safe stacking of vehicles. Where the existing right-of-way width is insufficient for the functional classification of the street, the throat depth shall be measured from the minimum right-of-way width as determined by the Engineering Standards and Specifications (ESS). Where thirty (30) feet may be inadequate, the City Engineer shall require a Traffic Impact Study to determine the appropriate throat depth.
- C. If no other design alternatives exist and interior drives are proposed which do not meet minimum spacing, exceptions may be made in accordance with **Chapter 4: Permitting and Appeals**.

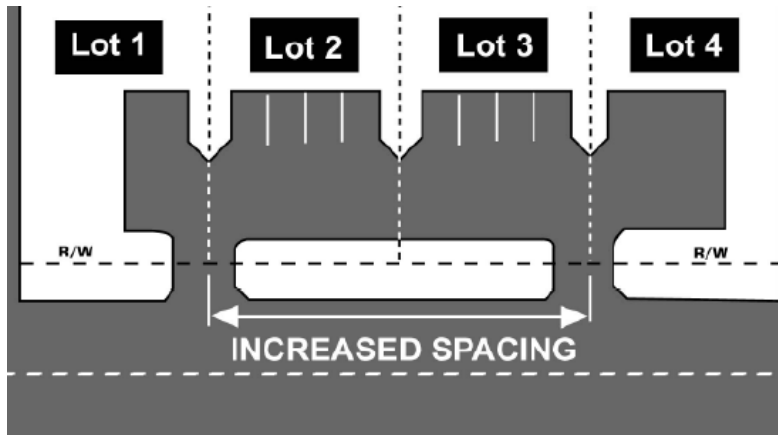
Figure 7: Placement of Interior Drives



3.1.5 Driveway Consolidation/Shared Access

- A. Cross access easements may be required across any lot fronting an arterial or collector street in order to minimize the number of access points and facilitate access between and across individual lots. The location and dimension of said easement shall be reviewed and approved by the City Engineer.
- B. Subdivisions and developments fronting arterial or collector streets shall be designed with consolidated/shared access points. Normally a maximum of two accesses shall be allowed regardless of the number of lots or businesses served.

Figure 8: Joint and Cross Access



3.1.6 Cross Access

Accesses shall be designed and constructed so as to align with driveways or streets on the opposite side of the street. The alignment of through movements crossing the highway shall be such that abrupt shifts in the travel pattern are not required.

- A. Adjacent commercial or office properties classified as major traffic generators (retail strip centers, office parks, or multi-family residential complexes adjacent to other multi-family residential, commercial and office properties) shall provide a cross access drive and pedestrian access to allow circulation between sites.
- B. A system of joint use driveways and cross access easements shall be established wherever feasible along the frontage and/or between parking areas and the building site shall incorporate the following:
 1. A continuous service drive or cross access corridor extending the entire length of each block served to provide for driveway separation consistent with this access management ordinance.
 2. A design speed of 10 mph and sufficient width to accommodate two-way travel aisles designed to accommodate automobiles, service vehicles, and loading vehicles;
 3. Stub-outs and other design features to make it visually obvious that the abutting properties may be tied in to provide cross-access via a service drive;
 4. A unified access and circulation system plan that includes coordinated or shared parking areas is encouraged wherever feasible.
- C. The Development Services Department may reduce required separation distance of access points where they prove impractical, provided all of the following requirements are met:
 1. Joint access driveways and cross access easements are provided wherever feasible in accordance with this section.
 2. The site plan incorporates a unified access and circulation system in accordance with this section.

3. The property owner enters into a written agreement with the City and records the agreement with the deed. This agreement should, at a minimum, indicate that any pre-existing non-conforming driveway connections on the site will be closed and eliminated after construction of each side of the joint use driveway. The Development Services Department shall have leeway in directing the language of any agreement to fit the specific conditions of the site.
- D. The Development Services Department may modify or waive the requirements of this section where the characteristics or layout of abutting properties would make development of a unified or shared access and circulation system impractical.
 - E. Pursuant to this section, property owners shall:
 1. Record an easement with the deed allowing cross access to and from other properties served by the joint use driveways and cross access or service drive.
 2. Record an agreement with the deed that remaining access rights along the thoroughfare will be dedicated to the City and pre-existing non-conforming driveways will be closed and eliminated after construction of the joint-use driveway.
 3. Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners.

3.2 Medians

3.2.1 Non-traversable Medians with Left Turn Lanes

One of the most effective measures to improve safety on a roadway is to install a non-traversable median. Raised or grassy medians in the center of a road separate opposing lanes of traffic and restrict turning and crossing movements.

3.2.2 Continuous Two-Way Left-Turn Lane (TWLTL)

- A. A continuous TWLTL provides the most alternatives for vehicles to cross a median. This roadway treatment provides accessibility when there are numerous curb cuts on an existing corridor.
- B. A TWLTL in the center of a roadway is safer than having no turning lane, but is not as safe as a non-traversable median with directional openings. Engineering judgement should be taken to select the most appropriate option for any road segment.
- C. In general a TWLTL functions well for roadways with moderate traffic volumes (up to about 25,000 vehicles per day) and have many commercial driveways and a high percentage of turning movements. They can also work well where there are multiple driveways but a low percentage of turning volumes, like a major collector or minor arterial traversing a residential area.
- D. TWLTLs are less effective in high-volume situations (more than 25,000 vehicles per day), and much more so in an area with commercial driveways too close together. Driveway spacing and density still need to be well-managed. The center turn lane is also not recommended where there are more than two travel lanes in either direction.

- E. Along transit corridors with TWLTL medians, pedestrian median refuge islands would need to be added at transit stop locations, to allow safer pedestrian crossings. Locations where a transit stop is located within 300 feet of a signalized intersection, and safe pedestrian crossing accommodations are already provided at the intersection, could be exempt from this requirement. When opposing transit stops are located more than 300 feet from each other, two separate pedestrian median refuge islands would be required.

3.2.3 Spacing of Median Crossovers

- A. When the applicant is requesting a median crossover on a divided arterial highway with a non-traversable median, the spacing standards shown in Table 3 apply.

Table 3: Spacing of Median Crossovers

Crossover Spacing (ft.)	
Minimum	1000
Desirable	1320

- B. Other factors will also be considered, such as distance to other median openings, adjacent land use, expected traffic volumes, and the resulting volume of U-turns that are likely to occur without the median opening. Meeting the spacing criteria is not, in itself, an indication that median openings will be allowed.

3.2.4 Median Opening Criteria

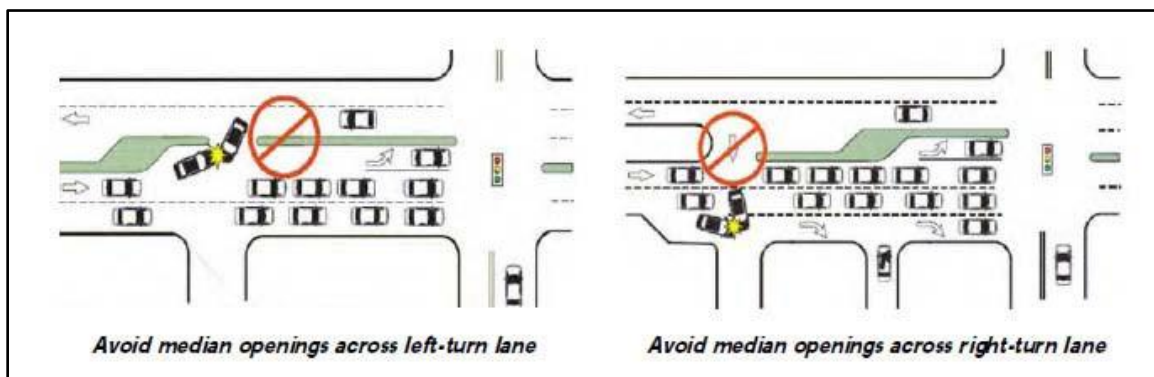
- A. New median openings or turn bays shall be allowed to provide access to a city street or to provide access to a private development only where the opening or turn bay can be constructed to satisfy the design standards set forth in this section. In no case shall median openings be located within the taper or storage area for another median opening or intersection.
- B. Where a new median opening is proposed for construction, a turn bay shall also be constructed unless the opening is designed to physically prohibit left turns from the divided roadway.
- C. If a roadway project is pending or under construction at the time of approval of a request for a median opening or turn bay, the approved median opening or turn bay shall be constructed to the standards for the approved or completed roadway; however, in no case shall construction standards be less than standards set forth above, and the person requesting the change shall pay any and all costs required to make the improvement. The person or party requesting the median opening or turn bay, if approved, shall pay to the City the estimated costs associated with design and installation of the median opening prior to the construction of same. If the estimate is insufficient to cover said costs the requesting party shall pay to the City any additional sums. If the estimated costs exceed the actual cost the overage shall be paid on completion of the project to the requesting person or party.
- D. If the requesting person or entity is to construct the median opening or turn bay, the procedures and requirements for construction and public dedication of median openings and turn bays shall be as provided for in this ordinance.

- E. Construction and materials shall be in accordance with the latest revisions of the TDOT Standard Specifications for Road and Bridge Construction.

3.2.5 Median Openings Across Turn Lanes

- A. Due to the danger of queues building up across a median opening, turning lanes must also be avoided in median openings
- B. Driveways shall not be located where it is necessary for left turning vehicles to cross an intersection's left-turn lane or right-turn lane. This problem is often exacerbated as queues build, prompting well-meaning "good Samaritans" to allow the left turner through, only to crash with a vehicle moving freely in the separate right-turn lane.

Figure 9: Avoid median openings across left and right turn lanes



3.2.6 Median Closures

Existing median openings within the vicinity of the access may be required to be closed or removed due to any of the following:

- A. Encourages unsafe, or illegal traffic movements;
- B. Exceeds spacing requirements;
- C. Does not have adequate sight or stopping-sight distance.
- D. Is located too close to an existing access or intersections
- E. Does not have appropriate auxiliary lanes; or.

3.3 Auxiliary/Turn Lanes

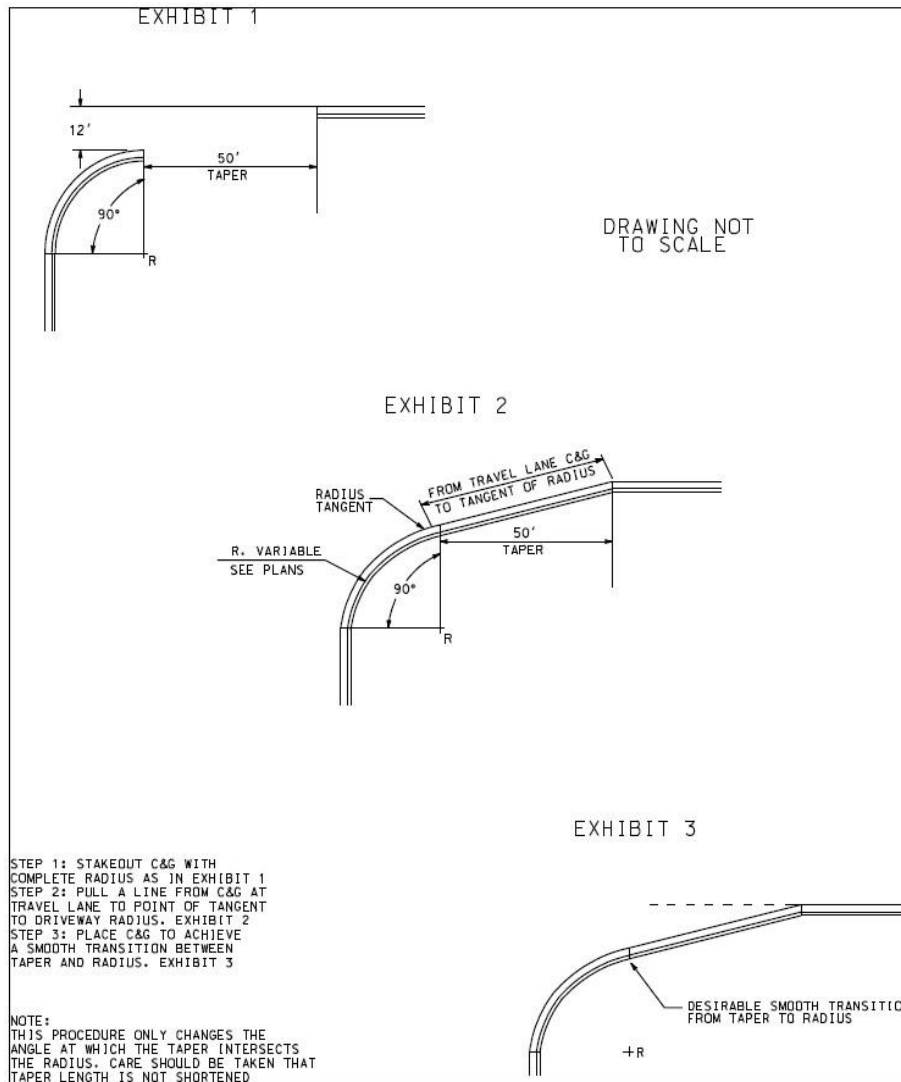
3.3.1 Deceleration Lanes

- A. Left turn/Right turn deceleration lanes may be required as determined by the Engineer at driveway accesses and designed in accordance with TDOT and City of Columbia regulations for arterial roadways.

3.3.2 Right-turn/Acceleration Lanes

- B. Right-turn / Acceleration Lanes shall be a minimum of 50 feet in length with an additional 50 foot long taper. The length may be required to be increased by the City Engineer, if supported by a Traffic Impact Study (TIS).
 - 1. Right-turn / Acceleration lanes are generally not provided on low speed highways. Acceleration lanes may be required at locations where grade, sight distance or traffic is such that the Development Services Department determines they are needed.
 - 2. A right-turn / acceleration lane and taper may be required at an access point under any one of the following conditions:
 - a. A high traffic volume on the highway and lack of gaps in traffic make use of an acceleration lane necessary for vehicles to enter and merge with the highway traffic flow.
 - b. The access location has/will have a high percentage of trucks using it.
 - c. Site specific conditions create the necessity for an acceleration lane for public safety or traffic operations, as determined by a TIS or by the City Engineer.
 - i. When operating speeds on the highway are 55 MPH and above, full-width acceleration lanes of sufficient length should be considered.
 - ii. On all driveways where a deceleration lane is provided, a tapered acceleration lane should be considered. The layout details of the acceleration lane taper are shown in **Figure 10**.
- C. A right-turn acceleration lane and taper may also be required at signalized intersections if a free right-turn lane is needed to maintain an appropriate level of service.
- D. The taper length will be included within the required acceleration length.

Figure 10: Acceleration Lane Taper Details



3.3.2 Dual Left Turn Lanes

- A. Dual left turn lanes are often needed to satisfy high volume demands. Capacity analysis shall be used to identify the need for dual left turn lanes.
- B. Dual left turn lanes are typically considered when the peak hour left turn volume is 300 vehicles or greater.
- C. The decision to use dual left turn lanes should consider the off-peak periods as well as the peak periods. The off-peak periods may be adversely affected, since the use of dual left turn lanes typically precludes permissive left turns. If dual left turn lanes are included in the design,
- D. The decision to use dual left turn lanes should also consider pedestrian activity in the area. Pedestrians will have greater difficulty crossing an intersection with dual left turn lanes due to the increased width.

3.4 Corner Clearance

3.4.1 General Provisions

- A. No driveway approach may be located closer to the corner than as shown in **Table 3**.
 - 1. This measurement shall be taken from the intersection of property lines, or the intersection of the projected extension of property lines, at the corner to the centerline of proposed driveway.
- B. All corner lots shall be of adequate size to provide required corner clearance on street frontage and front yard setbacks.
- C. When corner clearance or minimum spacing requirements cannot be met due to lack of frontage and all means to acquire shared access drives or cross access easements have been exhausted, the driveway location shall be approved by the City Engineer.
- D. If the applicant for a driveway permit determines, through analysis, that a driveway could be appropriately located closer to an intersection than the corner clearance dictates, the applicant shall submit a traffic study that, using acceptable engineering standards, concludes that it is acceptable to place the driveway closer to the intersection.

Table 3: Corner Clearance Requirements

Accessed By Driveway	Intersecting Street		
	Principal & Minor Arterial	Collector	Local
Principal Arterial	440 ft.	440 ft.	440 ft.
Minor Arterial	330 ft.	330 ft.	330 ft.
Collector	220 ft.	220 ft.	220 ft.
Major Local	150 ft.	100 ft.	100 ft.
Local	100 ft.	50 ft.	50 ft.

3.5 Traffic Signals

3.5.1 Spacing

- A. Closely or irregularly spaced traffic signals on roadways result in frequent stops, unnecessary delay, increased fuel consumption, excessive vehicular emissions, and high crash rates.
- B. Planning ahead for long and uniform signal spacing enhances the ability to coordinate signals and to ensure continuous movement of traffic at the desired speed. Failure to carefully locate access connections or median openings that later become signalized, can cause substantial increases in travel times. In addition, poor signal placement may lead to delays that cannot be overcome by computerized signal timing systems.
- C. Optimal spacing depends on travel speed and cycle length. Research data indicate that as speed and cycle length increase, so does desired spacing.
- D. Spacing between signalized intersections shall have a minimum separation as illustrated in **Table 4**.

Table 4: Spacing of Signalized Intersections

Signal Spacing (ft.)	
Desirable	2640
Minimum	1320

- E. Under certain conditions, better operation may result from the introduction of signals with less spacing if the alternative forces high volumes of traffic to an adjacent intersection. When the applicant can show, through an alternative analysis, that better operations can be achieved with less spacing, an exception will be considered. Signal spacing shall be determined based upon corridor performance rather than individual access requests.
- F. Effects of Signal Spacing
 - 1. Spacing of signals has a direct effect on roadway efficiency.
 - a. 1/2-mile signal spacing could reduce vehicle-hours of delay by over 60% and vehicle-hours of travel by over 50%, compared with signals at 1/4-mi intervals with full median openings between signals.
 - b. A four-lane divided arterial having signals at uniform 1/2-mi signal spacing could carry the same volume of traffic as a six-lane divided roadway with a 1/4-mi signal spacing.
 - c. Each traffic signal per mile added to a roadway reduces speed 2 to 3 mph. **Table 5** indicates percentage increases in travel times that can be expected as signal density increases, using two traffic signals per mile as a base.

TABLE 5: Percentage Increase in Travel Times as Signalized Density Increases

Signals per Mile	Percent Increase in Travel Time*
2.0	0
3.0	9
4.0	16
5.0	23
6.0	29
7.0	34
8.0	39

**Compared with 2 Signals per Mile*

2. The number of crashes and crash rates increases as the frequency of traffic signals increases.

G. Signal Spacing, Cycle Length, and Progression

1. A uniform signal spacing of 1/2 mi provides for efficient signal progression at speeds of 35 mph to 45 mph along major suburban arterials. At these speeds, maximum flow rates are achieved and fuel consumption and emissions are kept to a minimum.

H. Deviation from the Adopted Signal Spacing Interval

1. In many developed areas, signal spacing has already been established by the locations of intersecting streets. In addition, obtaining long, uniform signalized intersection spacing is often difficult in practice when:
 - a. There are severe natural or topographical constraints;
 - b. Land ownership patterns were laid out by metes and bounds; and
 - c. The street pattern is irregular or the area is highly urban with short blocks.
2. When a signalized intersection deviates from the selected uniform interval, progression can be maintained by increasing the percentage of cycle length devoted to the major arterial—with a comparable decrease in green time for the intersecting street. With short cycle lengths (i.e., 60 s), each 1% deviation in intersection spacing requires an increase in green time for the major street of 1% of the cycle length to maintain progression and a 1% decrease in green time for the minor street
3. For long cycles (120 s), the green time to the major street and red time to the minor street would need to be increased by 2% of the cycle length for each 1% deviation. This is a critical issue when considering arterial-to-arterial spacing.

- I. Desired progression efficiency for different roadway
 1. As progression efficiency decreases, fuel consumption, delay at signalized intersections, and vehicular emissions increase. Because of the volumes they carry and the intense traffic demand during peak periods, a high level of progression efficiency is desirable on major urban arterials.
 2. Lower levels of efficiency are acceptable on roadways of lesser importance and lower classification because of the lower volumes, shorter trips served, and driver expectancy. Therefore, the magnitude of the deviation from an adopted or ideal uniform signal spacing interval may increase as the roadway functional classification decreases.
 3. Conditions and criteria to be addressed in the evaluation of a potential signal location include the following:
 - a. Combinations of speed, cycle length, and minimum progression efficiency for both the peak and off-peak periods;
 - b. Computer software to be used;
 - c. Traffic volumes;
 - d. Development conditions;
 - e. Length of roadway segment to be evaluated; and
 - f. Other relevant factors.
 4. Alternatively, the state code or local ordinance may specify minimum progression efficiency criteria for different functional classes of roadways and provide that the conditions (combinations of speed and cycle length, volumes, length of roadway segment, acceptable computer software, and so forth) will be specified for each individual case.

3.5.2 Traffic Signal Timing

- A. In all cases, signal timing shall be coordinated to facilitate traffic flow. For undeveloped sections of a corridor, two-mile spacing should be considered.
- B. For frontage or service roads, preference in traffic signal timing and operation shall be given to highways and cross-streets of a higher access category or function.

3.6 Frontage Roads

3.6.1 Frontage Road Concepts

- A. An effective treatment to consolidate the number of access points, and therefore conflict points, on an arterial highway can be achieved through the construction of a frontage road or a reverse frontage road. These concepts are depicted in **Figure 13**.
- B. A frontage road is a local street (one-way or two-way) that serves multiple land uses (properties) and provides one to two points of access onto the main roadway. A frontage road can be constructed without taking existing buildings fronting the roadway when the buildings are setback far enough to accommodate the roadway and maintain the minimum setback from the road required by zoning.
- C. Frontage roads have a place in serving commercial development as well as residential access needs. When carefully designed to facilitate access and maintain signal operations, frontage roads can be a viable access management technique for large commercial developments.

3.6.2 Guidelines for Frontage and Service Roads

- A. Frontage roads have been observed to function successfully when they serve low density trip generation activities such as residential and small office areas.
- B. Frontage roads for retrofit situations should operate one way and should enter and leave the main lanes as merging and diverging maneuvers.
- C. Experience has shown that when a large separation is provided between the intersection of the major road and the crossroad, and the intersection of the crossroad and the frontage road, the minimum separation is suitable only where frontage road volumes will be very low.
- D. On a two-way frontage road, a separation of at least 300 ft. (preferably more) is necessary for efficient and safe operation and that the absolute minimum is 150 ft.
- E. A landscaped buffer between the major roadway and the frontage road will help avoid driver confusion while improving roadway aesthetics. A minimum buffer width of 25 feet is suggested.
- F. The reverse frontage design (**Figures 12 and 13**) results in a separation that allows the intersection of the frontage road and the crossroad to operate with little or no adverse effect on the intersection of the major road with the crossroad.
- G. Pedestrian and bicycle traffic can be accommodated along the frontage road.
- H. Parking on the frontage road may be permitted in residential areas.

Figure 11: Frontage Roads Concept

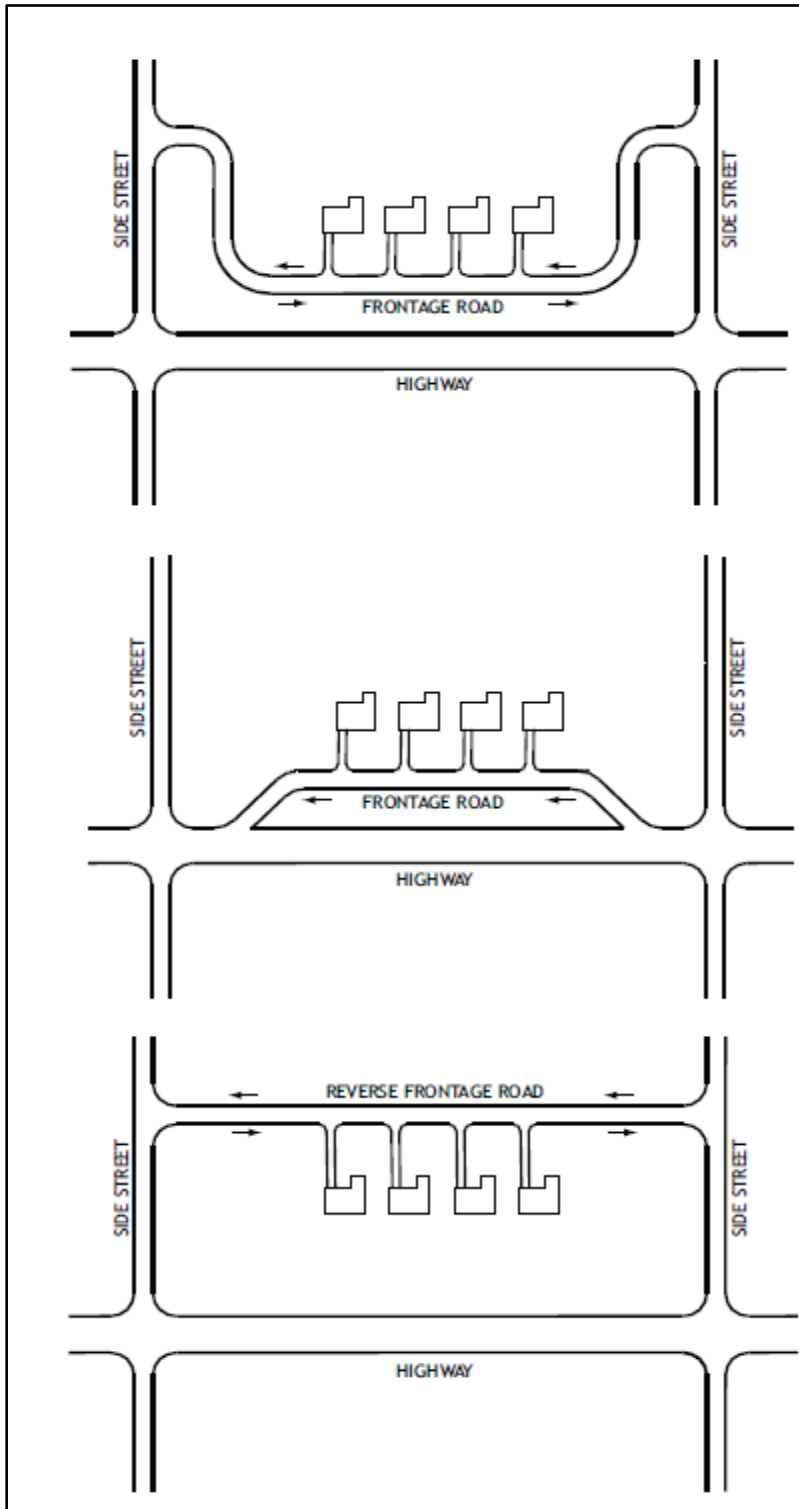
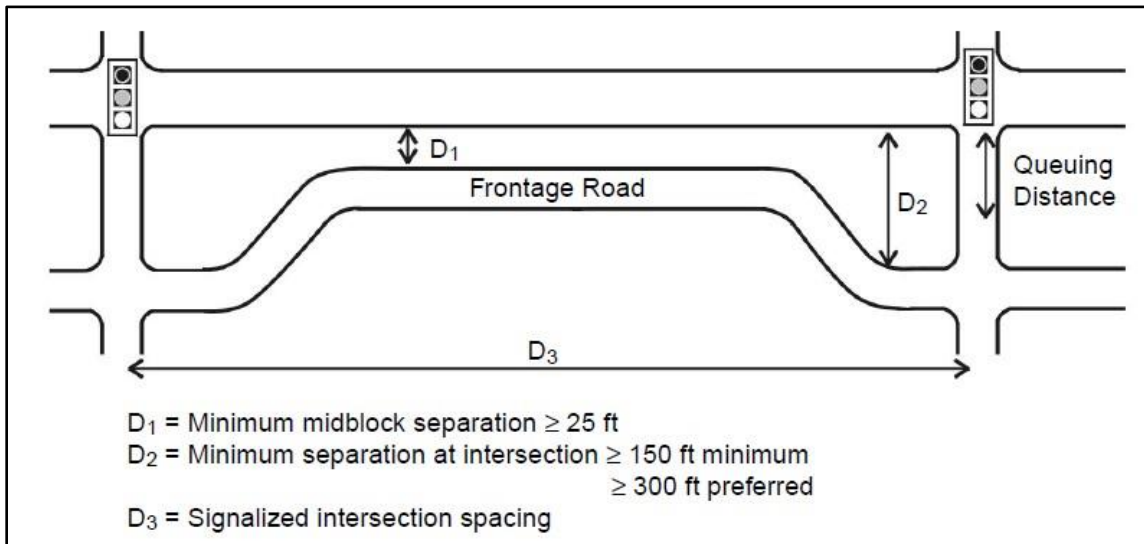


Figure 12: Frontage roads in residential or light office areas can work well where they are one way and begin and end between major crossroads.



Figure 13: Minimum separation between a frontage road and the major roadway



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Chapter 4: Permitting and Appeals

Projects, applications, or requests that require CMPC Approval (Planned Unit Development, Subdivision Preliminary or Final Plat, or Development Plan) shall follow **Section 4.1**. Projects, applications, or requests that do not require CMPC Approval shall follow **Section 4.2**.

4.1 Implementing Access Management

4.1.2 Review Procedures

- A. Access requests that are submitted as part of an overall development (Planned Unit Development, Subdivision (Preliminary or Final Plat), Site Plan, or Building Permit) shall be reviewed according to the regulations and schedule for the respective submittal (for example, a Preliminary Plat shall show compliance with these Access Management requirements and following the Plat submittal, review process, and schedule per the Subdivision Regulations, while a Site Plan shall show compliance with these Access Management requirements and follow the Site Plan submittal, review process, and schedule per the Zoning Ordinance.)
- B. If access requests are included as part of an overall development, they shall, at a minimum, show the following to demonstrate compliance with this Ordinance:
 1. Location of access point(s) on both sides of the road, where applicable;
 2. Distances to neighboring constructed or approved access points, median openings, traffic signals, intersections, and other transportation features on both sides of the property;
 3. Number and direction of lanes to be constructed on the driveway plus pavement marking plans;
 4. All planned transportation features (such as auxiliary lanes, signals, etc.);
 5. Trip generation data or appropriate traffic studies;
 6. Parking and internal circulation plans;
 7. Surveyed lot lines showing property lines, rights-of-way, and ownership of abutting properties; and
 8. Any deviation from these standards shall include a detailed description of such requested exception from these standards and the reason(s) the exception is requested. The request for an exception shall provide detailed answers to the items listed in **Section 4.4.2**.
- C. Subdivisions, Planned Unit Developments, Site Plans, Preliminary Plats, and Final Plats shall address the following access considerations:
 1. Is the road system designed to meet the projected traffic demand, and does the road network consist of hierarchy of roads designed according to function?
 2. Does the road network follow the natural topography and preserve natural features of the site as much as possible? Have alignments been planned so that grading is minimized?

3. Is access properly placed in relation to sight distance, driveway spacing, and other related considerations, including opportunities for joint and cross access? Are entry roads clearly visible from the major arterials?
 4. Do residential units obtain access on a local streets rather than major roadways?
 5. Is automobile movement within the site provided without having to use the peripheral or arterial road network?
 6. Does the road system provide adequate access to buildings for residents, visitors, deliveries, transit vehicles, emergency vehicles, and garbage collection?
 7. Have the edges of the roadways been landscaped? If sidewalks are provided alongside the road, have they been set back sufficiently from the road, and has a landscaped planting strip between the road and the sidewalk been provided?
 8. Does the pedestrian path system link buildings with parking areas, entrances to the development, transit access, open space, and recreational and other community facilities?
- D. The City reserves the right to require traffic and safety analysis where safety is an issue or where significant problems already exist.
- E. Any application that involves access to the state highway system shall be reviewed by the Tennessee Department of Transportation (TDOT).
- F. If the driveway permit or other element of the request is denied, the Development Services Department shall provide a response indicating why the request has been denied.

4.2 Driveway Permit Process

4.2.1 Permits

- A. Any plans submitted for building approval which include or involve driveways shall be reviewed for conformance to this ordinance before a building permit is issued.
- B. A driveway permit for a new development may be reviewed concurrently with a Planning Commission submittal. Approval of driveway location and design for new properties and other developments on a building plan or site plan may be considered the permit for driveway installation.
- C. Any property owner desiring a new driveway or an improvement to an existing driveway at an existing property that does not require Planning Commission shall make application to the Development Services Department for a driveway permit, in writing, and designating the contractor who will do the work, to the City Engineer. This permit request shall be accompanied by a plan and/or drawings that demonstrate compliance with this Ordinance. The City Engineer will prescribe the construction procedure to be followed. A permit shall be required for the location of all driveways that provide for access to property. Driveway permits may also be required for any significant structure changes, land use changes, or property boundary change, wherein **Section 4.1** shall apply. The driveway permit shall also be in conformance with the **Columbia Municipal Code, Section 16-210**.

4.3 Retrofitting

4.3.1 Acquire Access Rights

- A. Permitted access connections in place as of (date of adoption) that do not conform with the standards herein shall be designated as nonconforming features and shall be brought into compliance with applicable standards under the following conditions:
 - a. When new access connection permits are requested;
 - b. Substantial enlargements of the existing floor area (defined as an increase of floor area of 15% or more) or improvements to the existing building (defined as 55% or more of the building is altered);
 - c. Significant change in trip generation; and/or
 - d. As roadway, utility, or other governmental capital and infrastructure improvements allow.
- B. If the principal activity on a property with nonconforming access features is discontinued for a consecutive period of 366 days, or discontinued for any period of time without a present intention of resuming that activity, then that property must thereafter be brought into conformity with all applicable connection spacing and design requirements, unless otherwise exempted by the permitting authority. For uses that are vacant or discontinued upon the effective date of this code, the 366-day period begins on the effective date of this ordinance.

4.4 Exceptions to the Policies, Standards, and Requirements of this Ordinance

4.4.1 General

Exceptions of the standards, regulations, and determinations of this Ordinance shall be made to the City Engineer. If an exception is not granted by the City Engineer, the applicant may appeal that ruling to the CMPC, as an agenda item at a regularly scheduled meeting.

4.4.2 Application for Exception to the City Engineer

- A. The application for exception shall be filed by written notification to the City Engineer.
- B. The applicant, property owner, or their agent shall have the right to appeal a decision of the City Engineer to the CMPC.
- C. An application for exception shall be based on a claim that the true intent of the Access Management Ordinance, as legally adopted, have been incorrectly interpreted, the provisions do not fully apply, or an equally good or better design is proposed.
- D. The City Engineer may grant Exceptions to the provisions of this Ordinance only after finding that the life, safety, health, and general welfare of Columbia will not be impacted by such an Exception.
- E. Each item listed below shall be considered and deemed satisfied by the City Engineer prior to the approval of an Exception to this Ordinance:
 - 1. The strict application of this Ordinance would result in practical difficulties to or undue hardship on the owner of the property.
 - 2. The situation is not self-created.
 - 3. The Exception may be granted without substantial detriment to the public good and without sustainably impairing the intent and purpose of this Ordinance.
- F. The City Engineer may consider the following items
 - 1. The conditions upon which the request is based are unique to this property and are not applicable to other properties throughout Columbia.
 - 2. The specific property has exceptional narrowness, shallowness, or shape.
 - 3. The specific property has exceptional topographic conditions or other extraordinary or exceptional conditions that pertain to the physical nature of the property.
- G. The City Engineer shall provide a ruling and justification for the ruling to the applicant.

4.4.3 Appeals Process

- A. The Planning Commission shall hear and decide appeals of orders, decisions, or determinations made by the City Engineering or designee relating to the application and interpretation of the technical provisions of the adopted Access Management Ordinance, as adopted by the City of Columbia, Tennessee.
- B. The application for appeal shall be filed with the Development Services Department within 90 calendar days after the ruling by the City Engineer was made, and shall be accompanied by a fee, as determined by the Development Services Department. The applicant shall provide a notarized affidavit that affirms the information provided in the Exception request is true and correct.
- C. The Planning Commission may grant Exceptions to the provisions of this Ordinance only after finding that the life, safety, health, and general welfare of Columbia will not be impacted by such an Exception.
- D. Each item listed below shall be considered and deemed satisfied by the Planning Commission prior to the approval of an Exception:
 - 1. The strict application of this Ordinance would result in practical difficulties to or undue hardship on the owner of the property.
 - 2. The situation is not self-created.
 - 3. The Exception may be granted without substantial detriment to the public good and without sustainably impairing the intent and purpose of this Ordinance.
- E. The CMPC shall keep a record of all appeals.

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Chapter 5: Definitions

The following terms, as used in this document, shall have the following meanings unless the context thereof indicates to the contrary. The City Engineer shall be vested with interpretation powers over all provisions of this Ordinance.

AASHTO

(American Association of State Highway and Transportation Officials) which publishes documents in this manual, including A Policy on Geometric Design (Green Book) and Roadway Design Guide.

Acceleration Lane

A speed-change lane, including tapered areas, for the purpose of enabling a vehicle entering the roadway to increase its speed to a rate at which it can more safely merge with through traffic. This also may be titled as an "accel lane."

Access

Entrance to or exit from land adjacent to a public road. May be a driveway, public street, private street, or alley.

Angle of Two-way Driveway

The angle of deflection measured from the centerline of the nearest travel lane to the centerline of the driveway. An angle of 90 degrees is desirable.

Auxiliary Lane

The portion of the roadway adjoining the traveled-way for parking, speed change, turning, weaving, truck climbing, and other purposes supplementary to the through-traffic movement.

Corner Clearance

The distance from an intersection of a public or private road to the nearest access along the highway system. This distance is measured from the closest edge of pavement of the intersecting road to the closest edge of pavement of the access measured along the traveled way (through lanes).

Curb Cut

An access or driveway providing ingress and/or egress to or from the highway system along a "curbed" section of highway.

Commercial Driveway

Any private entrance, exit, ramp, tunnel, bridge, side road or other vehicular passageway to any property used for commercial purposes, except a farm or dwelling house not exceeding a four-family capacity, and leading to or from any public road on the highway system.

Deceleration Lane

A speed-change lane, including tapered areas, for the purpose of enabling a vehicle that is making an exit turn from a roadway to slow to a safe turning speed after it has left the mainstream of faster-moving traffic. Also called a "decel lane"; it denotes a right turn lane or a left turn lane into a development.

Driveway

Private entrance to or exit from land adjacent to a public road. Typically serves a limited number of lots, or uses.

Driveway Width

The narrowest width of a driveway measured perpendicular to centerline of the driveway, from edge of pavement to edge of pavement or face-of-curb to face-of-curb where curb and gutter are installed.

Directional Median Opening

An opening in a restrictive median which provides for U-turn only and/or left-turn in movements. Directional median openings for two opposing left or "U-turn" movements along one segment of road are considered one directional median opening.

FHWA

The Federal Highway Administration

Intersection

An at-grade connection or crossing of a one road with another road

Island

A device used to separate or direct traffic in order to facilitate the safe and orderly movement of vehicles. An island may be a raised area that provides a physical barrier to channel traffic movements or a painted area.

Median Crossover

An opening constructed in the median strip of a divided highway designed to allow traffic movements to cross from one side of the highway to the other. In some cases, the Access Management Engineer may require the design to be such that some movements are physically prohibited.

Residential Driveway

Any private passageway to any property used for dwelling purposes. However, if a driveway provides access for more than four dwelling units, it shall be considered a commercial driveway.

Restrictive Median

The portion of a divided highway or divided driveway physically separating vehicular traffic traveling in opposite directions. Restrictive medians include physical barriers that prohibit movement of traffic across the median such as a concrete barrier, a raised concrete curb and/or island, and a grassed or a depressed median.

Right-of-way (ROW)

All land under the jurisdiction of, and whose use is controlled by the City of Columbia, the Tennessee Department of Transportation or another local government.

Right-of-way Line

A line that defines the limits of the ROW of a public road as it relates to adjacent property.

Roadway

The portion of a highway, including shoulders, for vehicle use.

Sight Distance

Refers to intersection sight distance, which is the distance that can be seen along the main roadway by the driver of a vehicle on the driveway. The distance is measured based on an eye height of 3.5' and an object height of 3.5'. Sight Distance should be determined to provide adequate time for an entering vehicle to accelerate to within 10 mph of posted speed limit, prior to being overtaken by approaching vehicles. (Refer to AASHTO, Green book)

Stopping Sight Distance

The sum of two distances: the distance traversed by the vehicle from the instant the driver sights an object necessitating a stop to the instant the brakes are applied and the distance required to stop the vehicle from the instant brake application begins. Stopping sight distance is measured based on an eye height of 3.5' and an object height of 2.0'.

Traveled Way

The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

State Highway System (SHS)

The network of highways that have been functionally classified and which are under the jurisdiction of the State of Tennessee, as defined in State Statutes.

Appendix A: References

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