

# Access Management Policy



## *City of McAllen Traffic Operations*

Prepared for  
City of McAllen

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# Introduction

Access management is the systematic control of the location, spacing, design and operation of access points. Access points, in this policy, are defined as driveways, median openings, and street connections to a roadway.

In general, the goal of access management is to balance access density with the desired mobility function of a particular section of a given roadway. If access management policy is effective, it can promote beneficial outcomes including: better mobility and access, safer facilities, and an increase desirability of the businesses or land value in the area. Access management also reduces the potential for accidents by minimizing conflicts between through vehicles and turning vehicles. Research has shown that accident rates increase consistently with an increase in access density, while accident rates decrease with the implementation of access management techniques such as raised medians or the control of cross-access.

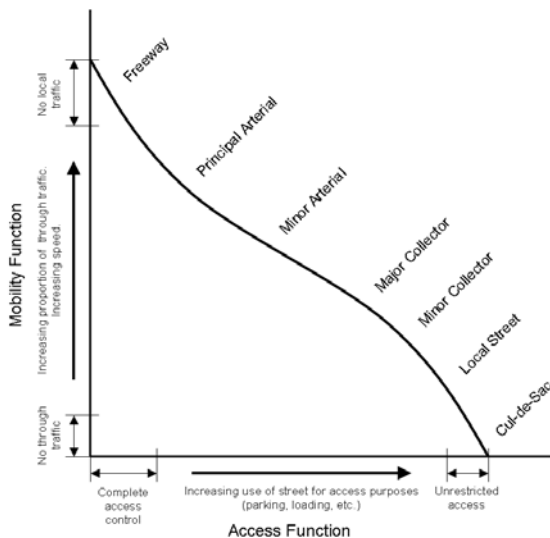
It is important to keep in mind that this policy is the minimum criteria in the use of access points. Traffic Operations shall review each access point on a case by case basis.

# Applicability

The policy shall be applied to all points of vehicular access on adjacent roadways. This document contains the minimum standards for access management policies, median spacing, driveway spacing, traffic control changes and other traffic operation considerations that affect traffic control changes, which affect traffic operations and safety in City of McAllen. This document does not address specific locations but provides general guiding principles that the City of McAllen can then apply to effectively manage access at specific locations. Where the City of McAllen’s Access Management policy differs from the TxDOT Access Management Policy the more stringent policy shall apply on roads managed by TxDOT.

# Overview

To have an effective Access Management Policy a balance between land development interest and traffic must be maintained. As the volume of the roadway increases the access along the corridor must decrease as illustrated below in Figure 1.



**Figure 1: Relationship between Mobility and Access**

The classification definition for roadways in the City of McAllen can be found in the *Foresight McAllen Thoroughfare Plan*. The City of McAllen has classified its roadways as freeways, high speed/principal arterials, minor arterials, major/minor collectors, and local streets.

- **Freeways** are limited access, thoroughfares designed for the movement of large volumes of vehicular traffic operating at high speeds for long distances, connecting principal or regional activity centers.
- **High Speed and Principal Arterials** have limited at grade access and designed primarily for the movement of through traffic between centers of medium intensity.
- **Minor Arterials** feed the primary arterial system, support moderate trips, and serve activity centers.
- **Major/Minor Collectors** link Local Streets with the arterial system and serve residential areas primarily internal to one neighborhood.
- **Local Streets** provide access to single family residential neighborhoods.

The City of McAllen Foresight McAllen document categorizes land use into four designations residential, commercial, industrial, agricultural, and special uses.

- **Agricultural** developments consist of farming, ranching, one single-family dwelling or one mobile home on parcels of five acres or more, portable buildings or storage buildings.
- **Residential** developments consist of one single-family dwellings, Duplexes-fourplexes, Duplex-fourplex townhouses, Duplex-fourplex condominiums, multi-family dwellings of five or more units, and mobile home or modular home
- **Commercial** developments consist of office buildings, retail, personal services, storages, restaurant and hospitality.
- **Industrial** developments consist of manufacturing, shipping, laboratories, utilities, heavy equipment sales, and lumber yards, primarily generating heavy truck or rail traffic.

## Definitions

*Access point:* Driveways, median openings and street connections to a roadway.

*Auxiliary Lane:* A lane striped for use as a speed-change lane allowing for safe merging into through traffic or to leave through traffic.

*Corner Clearance:* The distance along the edge of the traveled way from the closest edge of pavement of the intersecting roadway to the closest edge of pavement of the nearest access connection.

*Cul-de-sac:* A street having but one outlet to another street, and terminated on the opposite end by a vehicular turnaround.

*Foresight McAllen Thoroughfare Plan:* a document that addresses the development in such areas as land development, mobility, housing, drainage, public facilities and cultural activities.

*Median:* A raised curbed directional divider separating traffic flows that may be traversable or non-traversable.

*Multi-family:* A residential development consisting of multiple dwelling units such as an apartment building.

*Non-single family residential:* Any residential development other than multi-family or single family such as town homes.

*Offset:* This distance or clearance between street approaches.

*Queue:* A successive stacking of vehicles.

*Storage:* Stacking of vehicles usually in a queue.

*Throat Length:* the length of the driveway up to the first conflict point.

*TxDOT:* Texas Department of Transportation.

## **Design Standards**

### **Driveway widths**

#### **Residential**

Single family residential driveways shall be constructed with a minimum width of 12 ft maximum width of 25 ft at the right-of-way. (*Ord. 138-401*)

#### **Commercial**

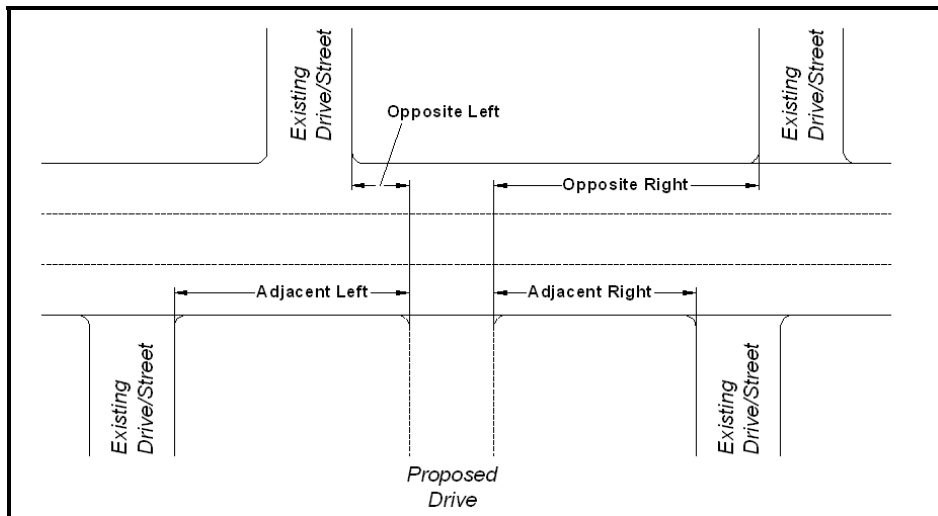
Commercial, non-single family residential and multi-family driveways that connect to an arterial street, highway, or freeway shall be a minimum of 25 ft wide to a maximum of 45 ft wide. (*Ord. 138-401*)

Driveways for utility facilities shall be constructed using single family residential driveway standards with specific approval from the city engineer.

## Access points

### Location

To preserve the functionality of the adjacent roadway, the location and spacing of access points will be determined by classification. Table 1 shows the proper spacing by functional classification. A minimum of one hundred twenty-five feet (125 ft) shall be required for Opposite Left Access Points. The spacing between access points shall be measured from the edge of one access point to the closest edge of the next access point along the adjacent roadway and shown on Figure 2.



**Figure 2: Measurement**

**Table 1: Minimum Access Point Spacing**

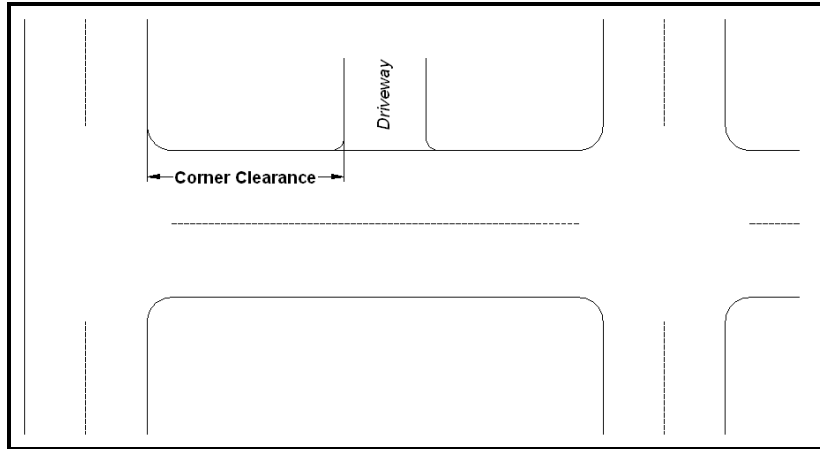
<b>Functional Classification</b>	<b>Adjacent Access Point spacing (ft)</b>	<b>Opposite Right Access Point spacing (ft)</b>
Collector	200	175
Minor Arterial	250	225
Principal Arterial	360	300
High Speed Arterial	425	400

### Corner Clearance

As defined above, connecting streets are considered access points. A safe distance, corner clearance, should be maintained from connecting streets, as to not interfere with the intersection operation. Driveways should not be within the area of deceleration and acceleration lanes, crosswalk, or a partial median opening. Table 2 shows the proper corner clearance distance by functional classification.

**Table 2: Corner Clearance**

<b>Functional Classification</b>	<b>Corner clearance (ft)</b>
Collector	200
Minor Arterial	250
Principal Arterial	360
High Speed Arterial	425

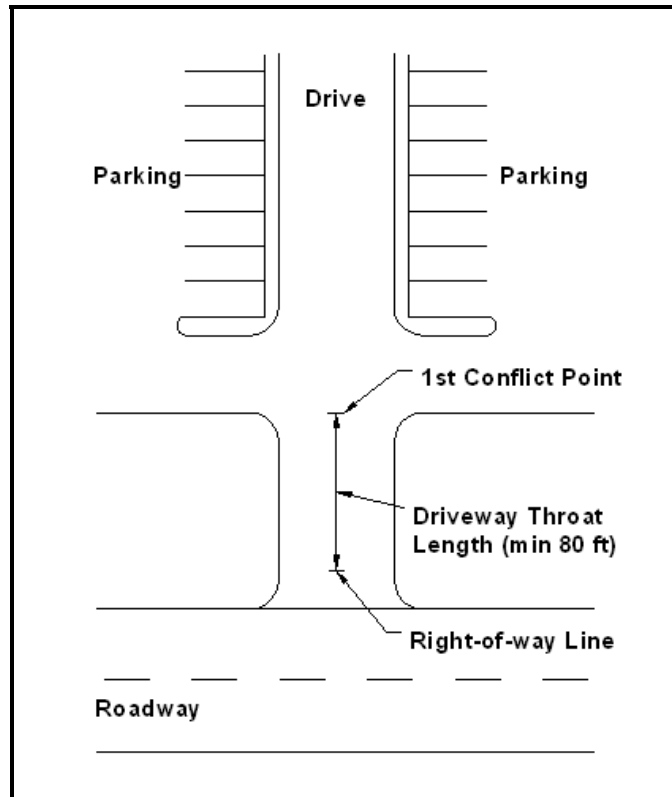


**Figure 3: Corner Clearance**

**On-sight storage**

**Throat-lengths**

All commercial developments are required to provide 30 feet minimum of throat length. Any development plan with an internal roadway network, a minimum storage of 80 feet measure from right-of-way line shall be required before any crossing or left turning conflicts are allowed, as shown on Figure 4. The minimum driveway throat length requirement may increase on a project-by-project basis based on recommendations by the City of McAllen Traffic Operations Department or a TIA on the internal roadway network.



**Figure 4: Driveway Throat Length**

### **Residential**

Residential access along arterials shall be designed to provide adequate space on the property for vehicles to turn around without the need to back onto the roadway.

### **Non-Residential**

Non-residential and mixed use access shall be designed so that backing, loading, unloading, and other maneuvers are accommodated on-site and not using the public right-of-way and the access shall provide adequate storage to prevent entering or exiting vehicles from obstructing the flow of traffic on roadways. The Engineer may provide verification by means of turning movement templates or Auto-Turn. A driveway median may be required to preserve the length of storage, or to prevent cross access to an out-parcel within the storage area of a driveway.

### **Special Traffic Generators**

Adequate storage shall be provided within the internal circulation system for properties that include either a drop-off loop or drive-through facility so that vehicles do not queue onto roadways, do not interfere with parking or internal circulation and do not block driveways. Dimensions are measured from the right of way. Minimum lengths are enumerated in Table 3.

**Table 3: Special Traffic Generator Minimum Throat Lengths**

Generator		Throat Length
Banking Facility	Single-lane	queue of six vehicles
	Multi-lane	queue of five vehicles per lane
Car-Wash Facility	Single-lane drive-through full service	queue of five vehicles
	Automatic or self serve multi bay	queues for two vehicles
Restaurant	Fast food with drive-through window	queue of eight vehicles measured from menu board and three vehicle lengths from menu board to pick-up window **
Gas Stations	Pumps parallel to edge of pavement	minimum setback 35 feet from pump islands to parallel right-of-way
	Pumps not parallel to edge of pavement	minimum storage of 50 feet from pump islands to right-of-way
Control Access	gated subdivision/service attendant	minimum of 40 feet from right-of-way to call box; from call box to gate 50 feet
*Note: 1 vehicle = 20ft ** or a combination approved by Traffic Operations Staff equaling no less than 11 vehicles		

Schools require adequate storage for drop-off and pick areas, which should be provided entirely on the school campus site to ensure safety for the students and to minimize the impact on the surrounding traffic network. The proper treatments are shown in Table 4.

**Table 4: School Storage Length**

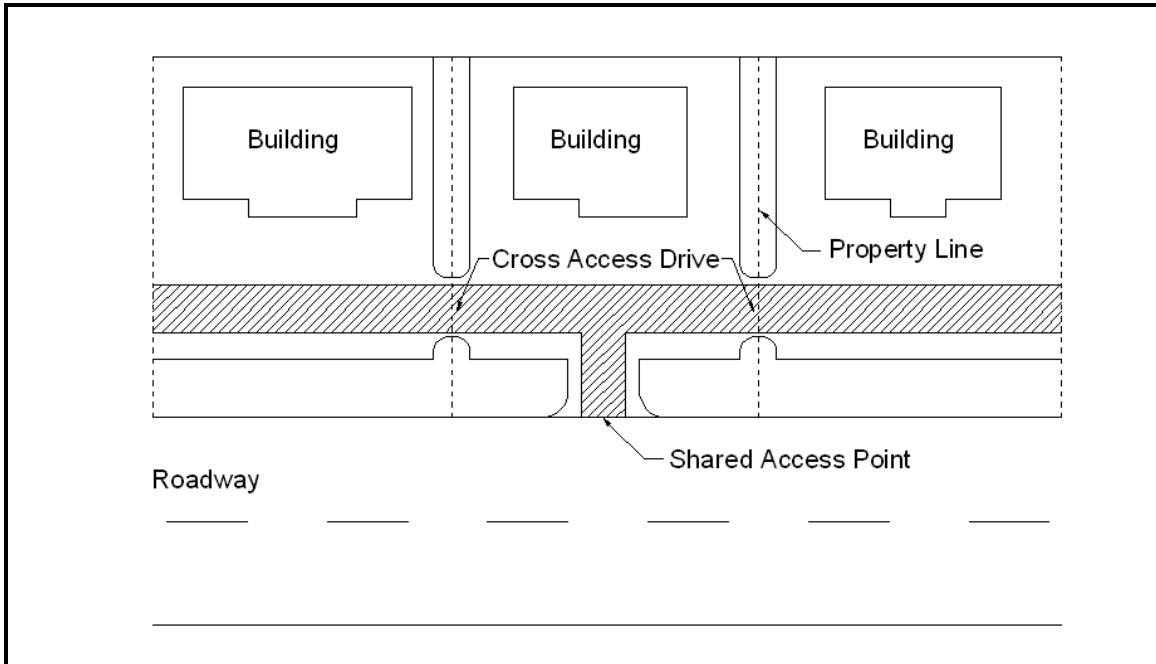
School Type	Student Population	Loop Drive Stacking Length
Elementary	200 – 600	650 – 1,000 Linear Feet
	600 – 1,200	1,000 – 1,500 Linear Feet
Middle	200 – 600	700 – 1,000 Linear Feet
	600 – 1,200	1,000 – 1,500 Linear Feet
High	400 – 800	800 – 1,200 Linear Feet
	800 – 2,500	1,200 – 1,500 Linear Feet
Note: For high school populations greater than 2,500 students, two separate student pick-up drop-off loops should be considered *SCDoT Guidelines for School Transportation Design.		

### Shared Access

Where the frontage of a property is insufficient for proper spacing of an access point the Traffic Operations Department shall require shared. The property owner shall:

- Record a common ingress/egress access easement with the plat allowing ingress/egress to properties that share access as determined by City Engineer or designee pursuant to this policy.
- When ever property is being platted through which ingress/egress is necessary for another property to have access to public right of way then such property shall record a common ingress/egress access easement allowing such other property shared access.

- Use of such easement by other property owners shall be made contingent on such other owner's agreement to the shared maintenance responsibilities on a pro-rata basis, proportional to respective square footage of all properties having access to easement.



**Figure 5: Shared Access**

## Medians

### Medians

Medians should be installed on all new multilane arterials and on existing multilane arterials with an average daily traffic (ADT) volume of 24,000 vehicles per day or greater.

### Median Openings

There are two types of median openings, directional and full opening. Directional median opening generally allows only left or right turns into a driveway, but left turns or through movements are not permitted out of the driveway. A full median opening allows all traffic movements. To preserve the functionality of the median and the adjacent roadway a minimum distance should be maintained between openings. Table 5 shows the minimum distance to maintain by functional classification of the adjacent roadway.

**Table 5: Median Opening Requirements**

Functional Classification	Median Opening (ft)	
	Full	Directional
Principal Arterial	2640	1320
High Speed Arterial	2640	1320

*\*Signalized intersections shall not be spaced less than 2640 ft apart.*

Full medians opening should align with cross streets or with driveways. Left-turn bays shall be provided at all median openings for safe left turn movements.

### **Auxiliary Lanes**

Table 6 shows the thresholds for auxiliary lanes was adopted from the *TxDOT Access Management Manual*. These thresholds represent examples of where left turn and right turn lanes should be considered. Refer to the *TxDOT Roadway Design Manual*, Chapter 3, for proper acceleration and deceleration lengths.

**Table 6: Auxiliary Lane Thresholds**

Median Type	Left Turn to or from property		Right Turn to or from Property <sup>(5)</sup>	
	Acceleration	Deceleration	Acceleration	Deceleration
Non-Traversable (Raised Median)	(2)	All	Right turn egress > 200vph <sup>(4)</sup>	<ul style="list-style-type: none"> <li>• &gt; 45mph where right turn volume is &gt; 50vph<sup>(3)</sup></li> <li>• ≤ 45 where right turn volume is &gt; 60vph<sup>(3)</sup></li> </ul>
Traversable (Undivided Road)	(2)	(1)	Same as above	Same as above

(1) Refer to Table 3-11, *TxDOT Roadway Design Manual*, for alternative left-turn-bay operational considerations.

(2) A left-turn acceleration lane may be required if it would provide a benefit to the safety and operation of the roadway. A left-turn acceleration lane is generally not required where the posted speed is 40 mph or less, or where the acceleration lane would interfere with the left-turn ingress movements to any other access condition.

(3) Additional right-turn consideration:

- ◆ Conditions for providing an exclusive right-turn lane the right-turn traffic volume projections are less than indicated in this table:
  - High crash experience
  - Heavier than normal peak flow movements on the main roadway
  - Large volume of truck traffic
  - Highways where sight distance is limited
- ◆ Conditions for NOT requiring a right-turn lane where right-turn volumes are more than indicated in this table:
  - Dense or built-out corridor where space is limited
  - Where queues of stopped vehicles would block the access to the right turn lane
  - Where sufficient length of property width is not available for the appropriate design

(4) The acceleration lane should not interfere with any downstream access connection.

- ◆ The distance from the end of the acceleration lane taper to the next unsignalized downstream access connection should be equal to or greater than the distance found in Table 1.
- ◆ Additionally, if the next access connection is signalized, the distance from the end of the acceleration lane taper to the back of the 90<sup>th</sup> percentile queue should be greater than or equal to the distance found in Table 1.

(5) Continuous right-turn lanes can provide mobility benefits both for through movements and for the turning vehicles.<sup>1</sup> Access connections within a continuous right turn lane should meet the spacing requirements found in Table 1. However, when combined with crossing left movements, a continuous right-turn lane can introduce additional operation conflicts.

<sup>1</sup>Florida Department of Transportation (FDOT), Florida's Driveway Handbook, 2002.

## Projecting Streets

### Streets

Streets and traffic lanes shall be properly aligned across an intersection. Proposed streets shall be aligned with existing streets. Where an area is built in phases an obvious effort to preserve future alignment shall be made. Local roads should not have access to principal arterials or high speed arterials.

Offset intersections are not permitted on any arterial if the offset distance (or clearance between streets) is less than three hundred feet. The minimal allowable offset shall be 250 ft on collector streets and 125 ft on local streets.

Table 7 lists the intersection spacing requirements by functional classification. Each column describes the criteria in relation to identical intersections.

**Table 7: Intersection Spacing**

Functional Classification	Intersection Spacing (ft)
Minor Arterial	470
Principal Arterial	870
High Speed Arterial	1320
<i>*Signalized intersections shall not be spaced less than 2640 ft apart.</i>	

**Marginal Access Street**

Where a proposed development has residential property fronting a collector road or greater a marginal access street shall be provided. The marginal access street will be parallel to and adjacent to the collector or greater road. The construction of the marginal access street will not relieve the developer of any responsibility or obligation set upon by the *Foresight McAllen Thoroughfare Plan*.

**Traffic Impact Analysis (TIA)**

Where a proposed development is estimated to generate more than 100 peak hour trips, a Traffic Impact Analysis may be required. In the study, the proposed driveways will be analyzed to determine the loss of Level of Service (LOS), if any, and what treatments are necessary for mitigation of such.

**Redevelopment**

Properties with access connections which do not meet the requirements above shall be brought into compliance to the extent possible when modifications to the roadway are made or when a change in use results in one or more of the following conditions:

- When a connection permit is required.
- When plat review is required.
- When site plan review is required.
- When building permit is required.
- When a change in land use(s) occurs on the site that may change the amount or distribution of traffic using any existing access points.
- As road improvements are made within the public right-of-way adjacent to the property.
- When a site experiences an increase of twenty percent or greater in peak hour trips or 100 vehicles per hour in the peak hour, whichever is less, as determined by one of the following methods:
  - An estimation based on the latest edition of the ITE Trip Generation Manual for typical land uses, or

- Traffic counts made at similar traffic generators located in the City of McAllen, or
- Actual traffic monitoring conducted during the peak hour of the adjacent roadway traffic for the property.

Normal maintenance and/or repair of an existing access connection shall not be considered a physical change in the access.

If the principal activity on a parcel with access connections which do not meet the regulations of the above is discontinued for a period of one year or more, then that parcel must comply with all applicable access requirements of the above to the extent possible. The property owner should be made aware that the City of McAllen may at any time, when deemed necessary for safety, mobility, and efficiency of the roadway, modify, remove, or relocate any access point, and may redesign the roadway including any medians, auxiliary lanes, and turning movement restrictions.

## **Variances**

The granting of a variance shall be in harmony with the purpose and intent of this ordinance and shall not be considered until every feasible option for meeting minimum access management standards is explored.

The City Engineer, or a designee, may authorize a variance to any driveway requirement in this article for which specific approval authority has been granted to the city engineer. A request for a variance must be submitted to the city engineer's office in writing.

Request for a variance from the standards herein must provide proof of unique or special conditions that make strict application of the provisions impractical, drawings providing sufficient detail to describe the request, and traffic data or any other supporting information. Incomplete requests will be rejected until all items are addressed by the applicant. Any work related to the variance that proceeds without approval of a variance is subject to removal and replacement in accordance with the city's design standards at the sole expense of the applicant. The application shall include proof that:

- Indirect or restricted access cannot be obtained; and
- No engineering or construction solutions can be applied to mitigate the conditions; and
- No alternative access is available from a side street

Under no circumstances shall a variance be granted, unless not granting the variance would deny all reasonable access, endanger public health, welfare or safety, or cause an exceptional and undue hardship on the applicant. No variance shall be granted where such hardship is self-created.