

Las Cruces Metropolitan Planning Organization

Access Management Guidelines



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Executive Summary

These Access Management Guidelines are intended to outline strategies that can be used by the member jurisdictions of the Las Cruces Metropolitan Planning Organization (MPO) – The City of Las Cruces, Doña Ana County, and Town of Mesilla – in their efforts to maintain capacity and traffic flow on area roadways and promote safety for all transportation modes. Applying access management strategies will help reduce conflict points and preserve the intended function of roads classified as collectors and arterials in the MPO area.

Currently, there are no uniform guidelines for intersection control, driveway spacing, and median design. There is a need for a balance between access and mobility that would be achieved through a comprehensive network of collector and arterial streets. By adopting policy guidelines and strategies, the MPO will promote this balance.

The Access Management Guidelines are divided into the following sections:

- Section 1 – Introduction to Access Management
- Section 2 – Access Management Strategies
- Section 3 – Complete Streets and Context Sensitive Solutions
- Section 4 – Road Classifications
- Section 5 – Intersection and Driveway Spacing Guidelines
- Section 6 – Median Treatments and Openings
- Section 7 – Improving Bicycle & Pedestrian Facilities

These non-binding guidelines provide a basis for MPO member jurisdictions to develop and implement access management standards specifically tailored to their contextual needs in order to create and maintain a safer and more efficient transportation network for all users.



1. Introduction to Access Management

1.1 Introduction

As identified in Transport 2040, these access management guidelines are intended for the use of the Metropolitan Planning Organization (MPO) member jurisdictions in coordinating access management strategies across the MPO area. These guidelines are non-binding and seek to establish a framework wherein the member jurisdictions can coordinate their own access management strategies based on context sensitive solutions that address transportation needs and issues.

The MPO region includes large areas of rural and agricultural land. These guidelines, however, primarily focus on transportation issues in the urban environment where the vast majority of the access management problems exist.

1.2 Purpose

The purpose of the Access Management Guidelines is to describe why access management is necessary and provide general strategies and strategies to coordinate standards across the MPO Area. The purpose of these standards is not to impose one set of standards across the entire MPO area, but rather to establish a common understanding of access management that can be utilized by the MPO member jurisdictions in the crafting of their own individual policies.

1.3 Basics of Access Management

Access management involves managing access between roads and adjacent land uses while simultaneously preserving mobility on the road. Roads serve two purposes: 1) Carrying traffic flow (mobility); and 2) Providing property access (accessibility). These two purposes often have competing needs. Mobility requires traffic flow be given priority. Accessibility requires that breaks or interruptions in the flow occur. Access management is about finding the appropriate balance between access and mobility.

A key element of any successful access management solution involves utilizing the principles of Complete Streets and Context Sensitive Solutions (CSS). These two concepts emphasize the importance of the road network being safe and convenient for all

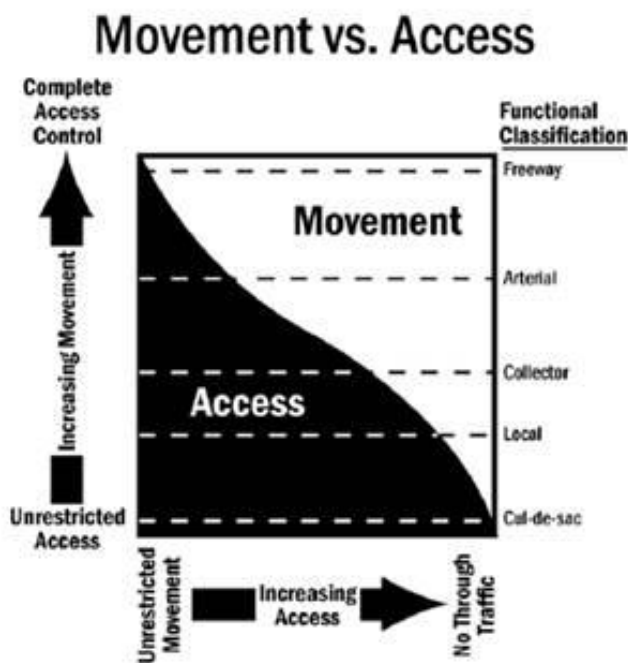


Fig 1. Movement (Mobility) vs. Access



safe and convenient for all modes of travel and of enhancing the relationship between transportation and the surrounding land uses. These access management guidelines will support all road users by recommending the reduction of conflict points along arterial and collector streets. Reducing conflict points protects all road users, but especially the more vulnerable cyclists and pedestrians. These guidelines also emphasize the importance of CSS by encouraging that access management solutions are tailored to needs of the transportation network and the surrounding built environment.

Another critical aspect for successful implementation of an access management policy is community outreach and education. Property issues can be a sensitive subject for many business owners and individuals. Without outreach and education, jurisdictions may find their efforts to implement access .

1.4 Benefits

There are many benefits to implementing access management. First, access management improves safety for all road users. An access management plan should include strategies to improve motorist safety such as reducing the number of conflict points along the road, installing medians and consolidating driveways. Reducing the number of conflict points along a road improves traffic flow, decreases situations causing rear-end collisions, and creates more predictable traffic patterns.

In addition to its safety benefits for motorists, access management benefits pedestrians and bicyclists as well. Fewer curb cuts reduce the exposure of more vulnerable users to conflicts with motorized vehicles. This encourages people to use alternative modes of transportation along major corridors.

Second, access management is an effective tool to mitigate congestion which has numerous economic and environmental benefits. These benefits include providing improved and predictable traffic flow, reducing pollution and fuel waste, and improving the aesthetic appeal of an area. These factors in turn will make an area more attractive to potential customers. Mitigating congestion also improves overall access to businesses and may attract new businesses and increased investment.

Finally, access management also provides direct benefits to jurisdictions. Improving the efficiency of the roadway network reduces the need for expensive network expansion. Reducing conflict points improves the safety of the roadway which can reduce liability for jurisdictions. These strategies reduce budgetary burdens on jurisdictions that may already have limited funding.

1.5 Theoretical Grounding for MPO Access Management Guidelines

The Transportation Research Board (TRB) is a national organization that researches various transportation issues. In 2003 the organization released TRB Access Management Manual. In this manual, TRB distilled ten principles for effective implementation of access management,

1. Provide a specialized road system
2. Limit direct access to major roadways
3. Promote intersection hierarchy



4. Locate signals to favor through movement
5. Preserve the functional area of interchanges
6. Limit the number of conflict points
7. Separate conflict areas
8. Remove turning vehicles from through-traffic lanes
9. Use non-traversable medians to manage left-turn movements
10. Provide a supporting street and circulation system

The Federal Highway Administration (FHWA) has an Access Management Program Plan which states that an access management plan should address the following issues,

1. Facility Hierarchy
2. Intersection and Interchange Spacing
3. Driveway Spacing
4. Traffic Signal Spacing
5. Median Treatments and Median Openings
6. Turning Lanes and Auxiliary Lanes
7. Street Connections

1.6 Las Cruces MPO Access Management Principles

Based upon the above theoretical principles, these access management guidelines establish the following guiding principles,

1. Access management standards should be consistent across the entire MPO area.
2. Access management should be implemented during the development and redevelopment of all MPO thoroughfares.
3. Access management should be supported through the close coordination of land use and transportation planning.
4. Use access management to promote safety for all transportation modes.
5. A balance should be reached between access and mobility.
6. The access management plan should parallel the roadway functional classification:
 - Freeway – highest level of mobility, highest speeds, no direct access to property, access only by ramps
 - Arterials (principal or minor) – in town, relatively high mobility and speed – limited access is possible but prefer only access to other arterials or collectors
 - Collectors (major or minor) – short distance local trips, higher amount of property access
 - Local Streets – lowest level of mobility, intended to provide direct property access

1.7 Definitions

Intersection or driveway types

- Full Access – Typically a 4-way intersection or two driveway cuts that intersect with the main road directly across from each other
- Partial Access – Typically a T-intersection (3 legs) or a driveway that only permits right-in/right-out turns.

Median types

- Traversable – Pavement material that allows left-turn movements
- Non-Traversable – Pavement material or barrier that blocks movement across the median



2. Access Management Strategies

The Las Cruces MPO developed the following strategies in conjunction with its member jurisdictions and the New Mexico Department of Transportation. The strategies provide the basis for the guidelines recommended by this plan.

STRATEGY 1 The access management guidelines will be in accordance with the MPO principles of complete streets and context sensitive solutions, including locating applicable transit, bicycle and pedestrian facilities in a safe and efficient manner on all arterial and collector streets.

STRATEGY 2 Road classifications identifying arterials and collectors shall have specific definitions, functions, and purposes based on the FHWA Functional Classification Guidelines.

STRATEGY 3 Establish access management guidelines for arterials to maintain capacity of roadways, improve safety, and minimize the number of access points.

STRATEGY 4 All arterial and major collector roadways should employ access control techniques.

STRATEGY 5 Review and possible consolidation of property access points should be included during the redevelopment process. Improving the internal circulation of surrounding properties should be encouraged during this process.

STRATEGY 6 Facilities with high crash rates should be evaluated to determine if access management can improve the situation.

STRATEGY 7 The placement of shoulders along rural roads should be encouraged as a means of protecting vulnerable users along those roadways.

STRATEGY 8 Jurisdictions should formalize a variance process in their access management policies.

STRATEGY 9 Jurisdictions should strive to engage and educate the public regarding access management issues.



STRATEGY 10 Land Use Access Matrix (Table 1)

Land Use	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local Road
Single-Unit Residential	Discouraged	Discouraged	Discouraged	Conditional	Preferred
Multi-Unit Residential	Conditional	Preferred	Preferred	Preferred	Conditional
Office	Conditional	Preferred	Preferred	Preferred	Conditional
Low-Density Commercial	Discouraged	Preferred	Preferred	Preferred	Preferred
High-Density Commercial	Preferred	Preferred	Conditional	Discouraged	Discouraged
Industrial	Preferred	Preferred	Conditional	Discouraged	Discouraged



3. Complete Streets and Context Sensitive Solutions

Complete streets are roadways designed to effectively and safely integrate the needs of all road users. The MPO Policy Committee passed a Complete Streets policy in 2008 to promote safe and convenient access and travel for all users – pedestrians, bicyclists, transit riders, and motor vehicle drivers. Context sensitive solutions (CSS) is a process of planning, designing, and implementing projects to provide a balance between the project function and form as well as its relationship with the rest of the built environment. CSS is not a separate set of standards or processes but is an aid to assist the decision-making and planning processes and ensure projects are well integrated with their surrounding environment. Transportation projects benefit from CSS through integrating its function and its impact on the surrounding land uses. This balance must address economic, environmental, historical, cultural and community perspectives. To achieve a balance there must be a collaborative process between public agencies, stakeholders, and the public

As illustrated in the above graphic, context sensitive solutions requires an equitable evaluation of all surrounding factors to arrive at the best set of solutions for an area. There are numerous benefits to applying CSS in transportation planning. The primary benefit is building transportation projects that integrate well with the built environment and effectively serve the community. Through a comprehensive, proactive public involvement process the transportation agency can build trust and partnerships rather than the public agencies, stakeholders, and public viewing each other as opponents. CSS is also an effective means of integrating complete streets principles into transportation planning.

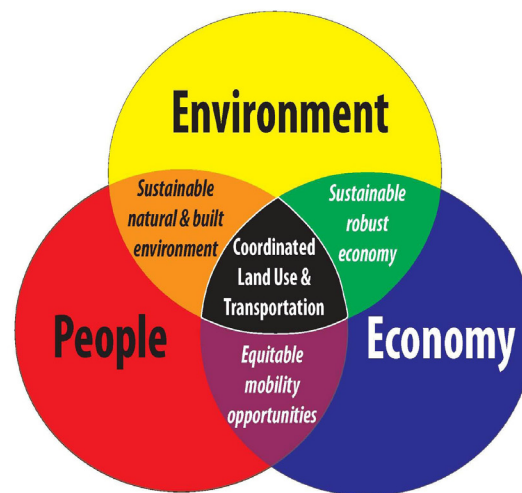


Fig 2. Context Sensitive Solutions

planning processes, policy makers and stakeholders consider all modes of transportation and determine how to best integrate them into the transportation project in the context of the surrounding environment.

These access management guidelines encourage use of context sensitive solutions to fulfill the access management principle of close coordination of land and transportation development. To relate context sensitive solutions directly to access management, the surrounding environment must be evaluated in order to select the appropriate access management solution for an area. Not all potential access management strategies or tools will be appropriate for all areas. Context sensitive solutions is a guide to jurisdictions in the selection of what access management solutions are appropriate for their area.



4. Road Classifications

4.1 Introduction

Each road classification is distinguished by a specific definition, function and purpose. Arterials are intended for high volume, long distance trips; collectors provide mobility between arterials and local streets; and local streets serve the access needs of residential areas. The roadway classifications generally remain consistent whether the road is in urban or rural settings.

Urban Road Classifications (Table 2)

Below are access management recommendations for the different levels of federal urban roadway classifications

ROADWAY	DEFINITION	FUNCTION	PURPOSE
Urban Principal Arterial	Provides for through movements and forms an integrated network for long distance, intercity/cross town travel.	Greatest mobility with limited access points	Serves the major activity centers in a metropolitan area and intra and inter-regional trips. Provides access to major traffic generators
Urban Minor Arterial	Interconnects with and augments the Urban Principal Arterial network. Intended for moderate length trips	High level of mobility while providing a potentially increasing number of access points	Provide intra-community connectivity, but ideally should not penetrate identifiable neighborhoods
Urban Major Collector	Distributes trips between the arterial system and the local road network	Increasing number of potential access points and reducing mobility	Provide land access and traffic circulation for residential and commercial neighborhoods
Urban Local	Collects trips to and from the neighborhoods and connects them to and from collectors	Greatest number of potential access points with overall limited mobility	Serves neighborhoods



Rural Road Classifications (Table 3)

Below are access management recommendations for the different levels of federal rural roadway classifications

ROADWAY	DEFINITION	FUNCTION	PURPOSE
Rural Principal Arterial	Provides through movements for long distance trips. It handles a high percentage of heavy commercial vehicles and forms an integrated network without stub endings except where unusual geographic conditions exist.	Greatest mobility with limited access points.	Provides access to important traffic generators and major cities not served by the Interstate; provides access to inter-modal facilities.
Rural Minor Arterial	Provides a high level of mobility for through movements. It forms an integrated network without stub endings except where unusual geographic conditions exist.	High level of mobility while providing a potentially increasing number of access points.	Provide inter-county access; used for long distance trips.
Rural Major Collector	Connects urban areas as well as conducting traffic from local roads to rural minor arterials.	Increasing number of potential access points and reducing mobility.	Serves intra-county traffic generators of importance and trips between residential and commercial areas.
Rural Minor Collector	Link the locally important traffic generators with their rural hinterland	Collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road	Provide service to the remaining smaller communities
Rural Local	Collects traffic from local roads to rural collectors and has the lowest traffic volumes	Greatest number of potential access points with overall limited mobility.	Serves small population centers and neighborhoods

Frontage Road Classification (Table 4)

Below are access management recommendations for frontage roads

ROADWAY	DEFINITION	FUNCTION	PURPOSE
Frontage Road	A road that provides access to local properties from an arterial.	Direct access to property	Separation of mobility and through movement on the main line from accessing property



5. Intersection and Driveway Spacing Guidelines

5.1 Introduction

Intersections are points where cross roads intersect the main road. Driveways are direct access points to residences or businesses. The implementation of more evenly spaced intersections and driveways can accommodate varying traffic flows in a more efficient manner. Access spacing should be based on posted speed limits and Average Annual Daily Traffic volumes. Please refer to the AASHTO document Policy on Geometric Design of Highways and Streets and the TRB publication A Guidebook for Including Access Management in Transportation Planning.

5.2 Guidelines

Urban settings inherently mean frequent intersections and driveways. The Average Annual Daily Traffic (AADT) volumes will often be higher on urban streets, especially so on arterials. Posted speed limits will usually be lower in urban settings and gaps between signalized intersections will generally be shorter in relation to the higher concentration of people and destinations. Business driveways will predominate on collectors and above. The goal for access points should be to keep access points to a practicable minimum and consolidate existing ones as much as possible.



Fig 3. Urban Setting



Suburban areas have a mixture of higher and lower land use densities. AADT volumes in suburban areas can still be higher on arterials, but residential streets with lower volumes tend to be more common in these areas. Posted speed limits will frequently display greater variety in a suburban setting than in urban or rural ones due to the mixed nature of the surrounding land uses. While business access will still exist in this area, there may be greater emphasis on residential driveways.



Fig 4. Suburban Setting

Rural areas have the lowest density of people and destinations, and thus a lower need for access. The emphasis in these areas is on mobility. On limited access highways and on arterials linking communities the AADT can be high, but on many roads the volumes will be lower compared to urban and suburban settings. However in rural settings greater care has to be taken to ensure the safety of vulnerable users. This places a greater emphasis on placement of bike and pedestrian facilities through the access management process.



6. Access Management Toolbox

6.1 Introduction

All arterial roadways shall be reviewed to incorporate access management using non-traversable medians. Medians are used to reduce intersection conflict points, regulate turn movements, physically separate vehicles moving in opposite directions, and provide a refuge island for pedestrians. Medians are often used to address safety concerns.

6.2 Guidelines for Selecting a Median Type

Use a traversable median, such as a Two-Way Left Turn Lane (TWLTL) when,

- Average Daily Traffic (ADT) and surrounding traffic patterns make advisable
- On collector streets in residential neighborhoods
- On collector streets where access locations are at a minimum

Use a non-traversable median when,

- Building any new multi-lane urban arterial
- ADT make advisable
- Multi-lane highways have high pedestrian activity
- Locations have a high crash rate
- Locations need left-turn access control in order to improve safety

6.3 Median Opening Spacing Considerations

Guidelines for median opening spacing are as follows,

- Sufficient width is needed to allow use as a directional opening
- Median openings should be designed to accommodate the largest design vehicle anticipated to use the opening
- The median opening should be designed to permit U-turns where practical and feasible
- The length needed for left turn bays is based on site-specific conditions
- Median openings at intersections or full-access driveways should be spaced with a minimum frequency based upon the road classification and posted speed
- Adequate storage, deceleration, and taper lengths should be provided for each speed change lane at a median opening based on site-specific conditions

6.4 Driveway Spacing and Medians

The location and interaction of driveway spacing and medians should be based on the following:

- It is strongly recommended that driveways on opposite sides of the road be aligned to create a four-legged intersection with a median opening that provides full access. In this scenario, driveway centerlines should be centered approximately with median opening
- Offset driveway locations that access traversable medians should be avoided whenever possible
- Where offset driveway locations are expected to result in turning movement conflicts at the median opening, access restrictions should be considered.



7. Improving Bicycle & Pedestrian Facilities

7.1 Bicycle and Pedestrian Guidelines

Access management can have beneficial impacts to pedestrians and bicyclists. Several of the following guidelines call for safety improvements that protect non-motorized users from motor vehicles,

- Construct median refuge islands on all 4 and 6 lane arterials
- Locate applicable bicycle and pedestrian facilities on all collector and arterial streets
- Provide bicycle and pedestrian access at the end of cul-de-sacs, if applicable
- Provide buffer zone on all arterials
- Define a minimum and maximum dimension for buffer zone
- Encourage the use of shoulders on rural roads for the safety of vulnerable users

7.2 Multi-Use Paths and Intersections

Several guidance documents from national transportation organizations recommend that multi-use paths (or sidepaths) to accommodate bicyclists and pedestrians be installed along limited access roadways. Fewer access points provide these modes with long stretches of uninterrupted travel.

The entities may also elect to install multi-use paths adjacent to corridors with high speeds and high volumes for the safety of bicyclists and pedestrians. However, in no case shall the adjacent multi-use path be used as a replacement to well-designed and constructed in-road bicycle facilities or pedestrian infrastructure.

Where multi-use paths meet existing intersections, it is recommended that the multi-use paths be brought back to the intersection itself. In this way, bicyclists and pedestrians can use crosswalks as designated places to traverse the intersection. This is also the location where drivers expect to see walkers and bicyclists. The intersection shall be kept clear of obstructions that may block sightlines.