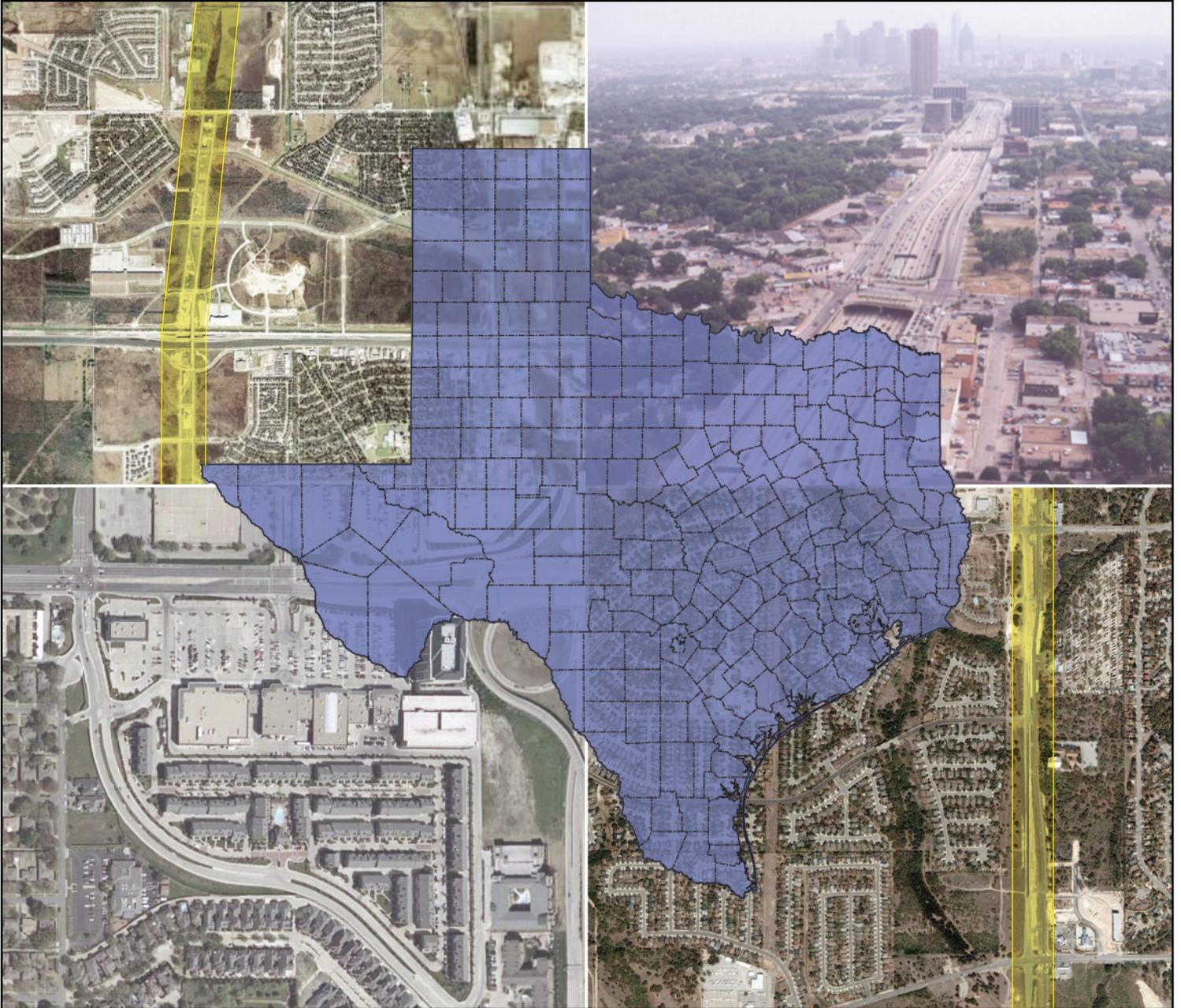


# Guidelines on Corridor Management and Preservation in Texas



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# **GUIDELINES ON CORRIDOR MANAGEMENT AND PRESERVATION IN TEXAS**

by

Edwin N. Hard  
Research Scientist  
Texas Transportation Institute

Patricia L. Ellis  
Research Scientist  
Texas Transportation Institute

and

Brian S. Bochner  
Senior Research Scientist  
Texas Transportation Institute

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## **DISCLAIMER**

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the FHWA or TxDOT. This report does not constitute a standard, specification, or regulation. The research supervisor in charge of this project was Edwin N. Hard.

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## INTRODUCTION

Optimal functionality of state highways requires proper alignments, sufficient right-of-way (ROW), responsive design, and complete implementation. In Texas, due to the separation of powers, it takes both state and local agencies – working in coordination with each other – to make this possible. Both TxDOT and local agencies need to work together to establish and preserve ROWs for new facilities. In the same way, TxDOT and local agencies need to work cooperatively to protect future ROW needs, address land development and access management, and coordinate operations.

As a result, there is a need in Texas, as in most states, for better coordination of land use and transportation decision making along state roadways. The separation and independence of jurisdictions between TxDOT roadways and local land use and development decisions are often the sources of problems in growing and developing corridors. Local-state partnerships in corridor management and preservation (CM&P) are needed to help address this disconnect and lack of integration of transportation and land use.

It is important for TxDOT, like many other state Departments of Transportation (DOTs), to work with communities to ensure that existing and future on-system corridors are managed and/or preserved as part of local and regional planning and development processes. The successful practice of CM&P on TxDOT facilities will require coordination and partnerships with local jurisdictions, since they may have land use control and development regulatory authorities.

This report provides guidelines for how TxDOT districts and area offices can work together with local jurisdictions in corridor management and preservation activities for existing and future TxDOT roadways and corridors. It represents product P1 of TxDOT research project 0-5606, Creating Partnerships with Local Communities to Manage and Preserve Corridors. Relative to the full 0-5606-1 research report, this document is intended to serve as a reference document for TxDOT offices involved with local jurisdictions in corridor management (CM) and/or corridor preservation (CP) activities.

*Guidelines on Corridor Management and Preservation in Texas* is intended for planners and engineers from TxDOT and local jurisdictions who coordinate and interact on planning and development matters within their respective jurisdictions. The document is written for TxDOT, cities, counties, and Metropolitan Planning Organizations (MPOs) alike and provides general guidance on the use of policies, tools and techniques in CM&P that may help bridge the gap in integrating land use and transportation decision making. It stresses the importance of local-state coordination in the land development and planning processes and demonstrates that successful CM&P programs and projects will require ample coordination and partnerships between all entities.

Corridor management and preservation must be considered a *process* and integrated into local comprehensive plans and development ordinances, MPO plans and work programs, and TxDOT policy, project development, and design. Just as well-planned neighborhoods, retaining neighborhood integrity, and good schools are valuable traits of a community, so too are well-planned, well-managed, and aesthetically pleasing community corridors.

### Definitions of CM&P

The Transportation Research Board (TRB) defines corridor as follows:

A **corridor** is a pathway that provides for the flow of people and goods within and between activity centers, and that includes one or more primary transportation facilities, abutting land uses, and the access facilities for development.

The terms corridor management and corridor preservation are often used together or interchangeably, but they do not always relate to the same measures or activities. There are sometimes differences in what they mean and how they are used depending on the particular study, region, or locale. Because of this, definitions for CM and CP, as defined for this guidebook, are provided below:

- **Corridor Management** refers to the management of land development and the transportation facility within an existing corridor to ensure that they develop in accordance with adopted land use plans, roadway improvement plans, access management, future ROW needs, or any specially adopted plans or objectives for the corridor.
- **Corridor Preservation** refers to the practice of acquiring, preserving, or protecting ROW needed for a future transportation corridor. The American Association of State and Highway Transportation Officials (AASHTO) define CP as ‘a concept utilizing the coordinated application of various measures to obtain control of or otherwise protect the right-of-way for a planned transportation facility.’

Both corridor management and corridor preservation include measures or activities for ROW acquisition and protection.

## **Overview of Corridor Management**

Corridor management is comprised of measures or practices to preserve or protect ROW in combination with managing how development occurs along an existing transportation corridor. A 2000 National Cooperative Highway Research Report (NCHRP) synthesis on corridor management generally defined it as ‘the application of multiple strategies to achieve specific land development and transportation objectives along segments of a corridor (*I*).’

CM involves ample communication and coordination on local planning and development activities that impact TxDOT facilities such as property subdivision, zoning and rezoning, site review, public utilities, and access management. It includes coordination on roadway planning and design schematics as well as operational elements such as signalization, medians, and intelligent transportation systems (ITS). It also includes capacity and ROW preservation measures along existing facilities. A primary component of capacity preservation is access management, which includes managing the design and spacing of adjacent access points (including local public streets) as well as roadway design elements such as medians and signal spacing.

From a transportation standpoint, the objective of CM is to protect the capacity, mobility, and safety of a transportation facility such that it will retain its intended function as adjacent development and redevelopment occurs over time. From an economic development standpoint, CM increases property values and creates safe and aesthetically pleasing corridors that businesses and retailers seek. The long-term objective for CM is to create mutually sustainable land development and transportation facilities that remain viable and functional long into the future. In other words, to ensure that developments adjacent to highways and thoroughfares are done right the first time and take into account the ultimate design and function of the roadway.

## **Overview of Corridor Preservation**

Corridor preservation generally refers to the practice of acquiring, preserving, or protecting ROW needed for a planned transportation facility. It starts with long-range transportation planning, often on a regional or statewide scale, and requires coordination and involvement at the local, state, and federal

levels. Throughout the USA, local governments and MPOs play an important role in corridor preservation activities. Adopted plans such as a statewide transportation plan, regional or MPO plans, and local comprehensive and thoroughfare plans typically serve as the basis for corridor preservation.

TxDOT, like many state DOTs, does not have enabling legislation that specifically provides a formal corridor preservation program. In lieu of specific CP authority, TxDOT must coordinate and rely on local jurisdictions and MPOs in transportation planning to assist in corridor preservation, where possible.

TxDOT does have tools in place to facilitate early ROW acquisition through advanced acquisition methods. Advanced or 'early' acquisition is the acquisition of property by state and local governments in advance of the project's final environmental document. Advanced acquisition methods that can be used by TxDOT include hardship acquisitions, protective purchases, donations, and options to purchase. The use of these techniques is limited because they can only be used on a parcel-by-parcel basis, but not applied on a project-wide or corridor-wide scale.

The underlying difficulty in CP for all state DOTs stems from federal National Environmental Policy Act (NEPA) regulations, which require that the environmental clearance process be completed before state or federal funds can be used to acquire ROW on a project-wide basis. Because of this requirement, environmental work is not started until later stages in TxDOT's project development process. This is the 'traditional' process used by most state DOT's. In recent years, the federal government has recognized this problem and included provisions in legislation that requires some environmental work to begin in long-range transportation planning.

The Safe, Accountable, Flexible, Efficient Transportation Efficiency Act: A Legacy for Users (SAFTEA-LU) of 2005 included environmental 'consultation' and 'mitigation' provisions that MPOs must adhere to for MPO and statewide plans. It also included a provision on 'linking planning and NEPA' by allowing results of transportation studies (e.g., corridor or sub area) to be used for NEPA requirements such as purpose and need, preliminary screening of alternatives, and preliminary identification of environmental impacts and mitigation.

The lack of funding and a dedicated funding source for corridor preservation is one of the greatest limitations for TxDOT and local jurisdictions. Most state DOTs, like TxDOT, do not have enough funds to construct all identified project needs, much less the money to acquire ROW for future transportation facilities. Like state DOTs, most local governments are spending all of their transportation budgets on maintaining existing facilities and addressing existing capacity, safety, and congestion problems.

### **Why the Need for CM and CP?**

Typical corridor problems include numerous and poorly spaced driveways, roadway designs conducive to strip development, closely spaced signals, lack of interconnectivity between adjacent developments, and the inability to preserve or protect ROW for future corridors due to development. [Figure 1](#), a section of Westheimer Road (FM 1090) in Houston, is an example of an urban state highway exhibiting some of these characteristics. It has numerous and poorly spaced driveways accommodating strip development, closely spaced signals, and lack of interconnectivity between adjacent development.

These problems include both transportation and land use components which are interdependent (2). Solutions to the problems lie in coordinated corridor management and preservation activities that help bring together land use and transportation planning decision making among the affected jurisdictions and agencies. CM and CP promote local-TxDOT coordination and better planned, more orderly development along TxDOT facilities.

CM and CP benefit many stakeholders, including TxDOT, local jurisdictions, private development, and the community or region in general. It serves to protect roadway capacity, extends the life of existing

facilities, and can reduce or delay the need for costly widenings. From an economic development standpoint, attractive, well-managed roadways provide stability that is attractive to local businesses and national retailers whose investments help increase and sustain property values (1). With increased land values come higher quality development, which increase the local tax base. CM and CP are ‘smart growth’ activities, which facilitate mutually sustainable transportation facilities and land development.



Source: Google Earth™

**Figure 1. Westheimer Road (FM 1090) in Houston Showing Typical Corridor Problems.**

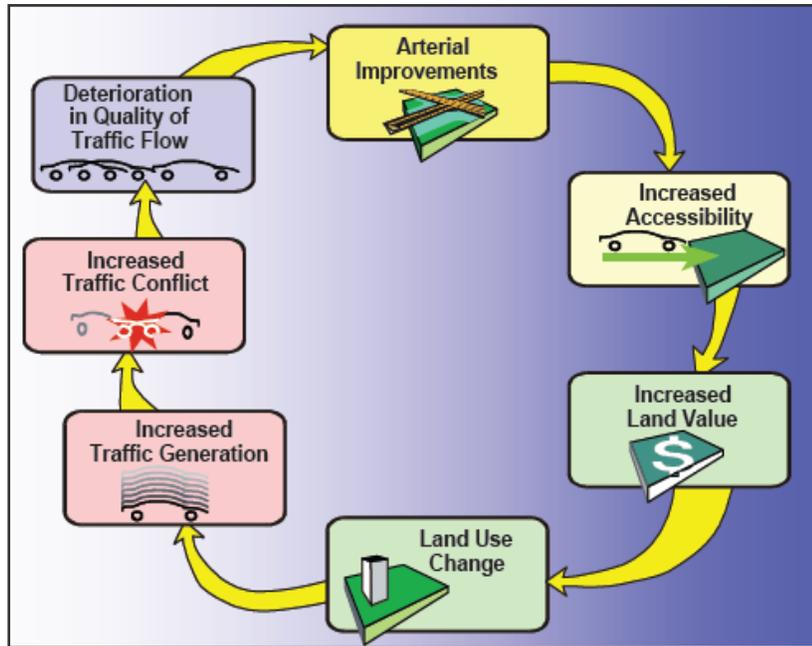
In order for TxDOT to be successful in CM and CP, cooperation and coordination with cities and counties is imperative. State-local coordination and partnerships are needed in implementing local and regional thoroughfare plans, and in local development processes. A comprehensive multi-jurisdictional approach is needed whereby CM and CP strategies can be tailored on a project specific basis, and combined regulatory authorities from among all agencies and jurisdictions can be drawn upon to achieve community objectives.

### **Breaking the Transportation-Land Use Cycle**

Some communities in Texas are breaking the transportation-land use cycle using CM&P, though others continue to go through this age-old cycle. The transportation-land use cycle, shown in [Figure 2](#), begins when major arterial or thoroughfare improvements are made which increase the value and accessibility of adjacent land. The roadway improvements spur new development and re-development, which increase access points and traffic generation. As this cycle continues, over the years the cumulative increases in the amount and intensity of development create traffic conflicts and congestion, which require more arterial improvements – thus starting the cycle again.

For decades, communities in Texas have struggled with development and transportation issues along their key arteries. Many cities in Texas have incorporated corridor management and preservation approaches, to varying degrees, into their planning and development review processes to address these issues and to maintain or improve the appearance and operation of their key thoroughfares and

community gateways. Across the state, there are ample opportunities for TxDOT and local jurisdictions to partner on development and application of CM and/or CP measures for existing and planned TxDOT facilities.



Source: Institute of Traffic Engineers (ITE), Transportation and Land Development, 2<sup>nd</sup> Edition

**Figure 2. The Transportation-Land Use Cycle.**

History has shown that the long-term consequences of failing to manage land use and development along major corridors and failing to plan for future corridors include:

- reduced mobility and increased congestion and accidents;
- a decline in property values and tax base;
- a loss in aesthetic quality;
- gradual economic disinvestment along corridors;
- a loss or re-alignment of a planned corridor due to development;
- displacement of homes and businesses;
- increase in time and delays in project development; and
- increase in project costs due to damages paid and purchase of improved ROW.

Corridor management is an activity that is imperative for sustainability. If development is not actively managed, over time it will destroy the transportation resource that it relies upon for economic vitality (1).



## **PLANS AND AUTHORITY FOR CM&P**

The ability and authority for TxDOT, cities, and counties in the state to undertake corridor preservation and management activities stem from plans, policies, and regulations at the city, county, and state levels. In light of the numerous plans, overlapping jurisdictions, and separation of powers, the challenge of successfully practicing CM&P lies in coordination and collaboration between jurisdictions. No single tool or agency can fully accomplish the job. In applying local subdivision and development regulatory authority to implement CM&P actions on TxDOT facilities, it is important that actions be carried out in accordance with the policies and objectives of the adopted plan of the applicable locale or region.

The basis for the application of corridor management and preservation measures for TxDOT roadways comes from the following:

- TxDOT's *Access Management Manual*;
- provisions in TxDOT's *Right-of-Way Manual* and *Roadway Design Manual* which support CM&P;
- municipal comprehensive plans;
- municipal and county transportation plans;
- regional transportation plans;
- municipal and county subdivision regulations; and
- local zoning and development regulations.

### **TxDOT Practice and Authority**

Like most state DOTs, TxDOT does not have enabling legislation that provides a formal corridor management or corridor preservation program. Over the decades, as TxDOT facilities have increasingly been impacted by urban growth and development, TxDOT has become increasingly involved in CM and CP activities.

TxDOT's ability and authority to undertake CM and CP primarily comes from the following:

- TxDOT's *Access Management Manual* (the manual states that TxDOT will use access management practices in roadway design);
- roadway design and operation (TxDOT's *Roadway Design Manual* is coordinated with its *Access Management Manual*);
- provisions in TxDOT's *Right-of-Way Manual* relating to advanced acquisition of ROW;
- TxDOT policies on purchase of access rights and frontage roads;
- TxDOT coordination with local jurisdictions on access location and permitting, use of land development regulations, and property subdivision adjacent to TxDOT roadways;
- the requirement in the Texas Transportation Code that TxDOT develop a statewide transportation plan;
- local assistance in advanced planning work on TxDOT projects using advanced funding agreements;

- TxDOT involvement in local comprehensive planning and development of county transportation plans;
- TxDOT involvement in MPOs and regional transportation planning; and,
- working with locals to include CM and CP measures for TxDOT roadways in municipal comprehensive plans, MPO transportation plans, and county transportation plans.

Since TxDOT's authority ends at the ROW line, partnerships with local jurisdictions to use local land use, development, and subdivision regulations are paramount to using CM&P measures along TxDOT roadways. From a regulatory standpoint, cities, counties, and ETJ's of cities can generally be considered three different regulatory platforms for CM&P, with the cities having the most authority and counties having the least. There is a significant difference in what tools and actions can be applied in corridor management and preservation in cities, the extraterritorial jurisdiction of cities, and counties in Texas. Obviously, there is a greater ability and urgency to undertake CM&P in urban areas than in rural areas of the state.

### **Municipalities with Comprehensive Plans and Zoning**

The greatest opportunity to undertake CM and CP on or for TxDOT roadways is in cities with adopted comprehensive plans and zoning. This is because cities with adopted plans and zoning in place may regulate subdivision of property, land use and density, and many aspects of site development along TxDOT roadways. Most of the tools needed for CM and CP are contained within local subdivision regulations and zoning ordinances, which are the two key tools cities use to implement their comprehensive plans. Local plans may also contain specific components, policies, or objectives on CM and CP, including prioritization of corridors within the community for CM and/or CP treatment.

Local comprehensive plans are important to TxDOT-local partnerships in CM and CP because:

- They serve as the guide for establishing development regulations to manage growth along TxDOT corridors.
- Zoning cannot be implemented without an adopted plan that contains transportation and land use components. Without zoning, many of the tools needed to practice CM are not available. Zoning serves as the basis for most land development regulations needed in growth and corridor management.
- They allow for the coordination of land use intensity with the functional class of the adjacent roadway, including TxDOT roadways.

Perhaps most important, however, is that comprehensive plans – along with subdivision regulations and zoning – serve as the basis of authority for the majority of tools and regulations used in CM and CP that can be applied along TxDOT roadways. The validity of some regulatory actions, such as ROW/development exactions, setbacks, or access restrictions may hinge on whether they are required in accordance with an adopted plan, an ordinance related to the plan, or policies and objectives contained within the plan.

## Counties and Extra-Territorial Jurisdictions (ETJ)

Compared to cities with zoning, the ability for counties in Texas to practice corridor management and preservation is limited. While all counties in Texas have the authority to regulate the subdivision of land, they do not have land use controls and little, if any, authority to regulate important aspects of development such as use, density, impervious cover, access, and site layout and circulation. With a few exceptions, they lack two important tools needed to engage in corridor management and preservation. These include:

1. the authority to adopt and enforce a transportation plan; and
2. the authority to regulate land use and density via zoning.

Despite lacking land use and development regulatory authority, access management and ROW preservation are two important aspects of CM and CP that can be practiced in Texas counties and ETJ areas. Primary sources of authority to apply CM and CP measures and tools in counties include:

- county subdivision regulations;
- county transportation plans (certain urban counties, minimal application and use);
- MPO transportation plans; and
- TxDOT Guidelines on Access, Roadways Design, and Operations.

The extra-territorial jurisdiction, or ETJ, is the unincorporated territory extending beyond city limits, but located within a county jurisdiction (Texas Local Government Code (LGC) §42.021). In Texas, the size of the ETJ around a municipality varies depending on its population. In addition to county authorities, the following municipal authorities can be extended to, and applied in, the ETJ area:

- subdivision regulations;
- transportation plans;
- access and park land dedication ordinances; and
- development agreements with developers.

Under state law, cities and counties must enter into agreements regarding plat approval in ETJs (Texas LGC, Chapter 242). The agreement establishes which jurisdiction, city or county, has approval authority on plats in the ETJ. It allows for both county and municipal subdivision regulations to be followed, with the more stringent of the two being applied. Based on a 2003 survey, cities assume plat approval authority over 70 percent of the time (3).

Certain urban counties in the state can adopt and enforce a transportation plan and reasonable building and setback lines (Texas LGC, §232.100). As written in state statute, these additional county authorities appear to apply to 20 of the state's 254 counties, which are located in the Houston, Dallas-Ft. Worth, and San Antonio regions along with the most populated counties along the Texas-Mexico border.

While counties can not specifically regulate density and impervious cover, these aspects of development can be influenced in counties and ETJs through:

- minimum lot size and width requirements of county and municipal subdivision regulations in the ETJ; and
- minimum lot size requirements for on-site sewer facilities (OSSF) systems.

- concurrency or adequate facilities ordinances in municipal subdivision regulations which address the timing of infrastructure extensions and require developments to verify that adequate infrastructure to meet health and safety requirements are in place prior to approval.

County authority to regulate minimum lot size for OSSF permits can serve as a key density control mechanism along TxDOT roadways in counties and ETJ areas. The state requires a minimum of one-half acre for OSSF, but counties can adopt rules more stringent than those of the Texas Commission on Environmental Quality (TCEQ). Many counties in Texas require a minimum 1 acre lot size for an aerobic septic system to be used. However, if cities allow their extension of sewer service into the ETJ, it can effectively circumvent this density control mechanism and facilitate sprawl and ‘city’ subdivisions with urban densities along rural county and state roadways.

Other possible opportunities for using CM and CP tools or approaches along TxDOT roadways in a city’s ETJ could occur with the following:

- development agreements between local jurisdictions and developers in the ETJs which establish land use controls and provisions infrastructure and utilities;
- annexation by cities in Texas to exercise control of development within their ETJs, by allowing them to use zoning and development regulations in the ETJ. Once annexed, a rural density ‘holding’ zone designation could be applied to undeveloped areas lacking adequate infrastructure for urban development.
- Extension of parkland dedication ordinances into the ETJ in order to make development in the ETJ area more financially comparable to that in a city. Cities could require direct land dedication or a fee in lieu of land (4).

Counties may also serve as the local administrator of federal (FEMA) floodplain regulations. Through this authority, counties can require developments impacting floodplains to conduct ‘inundation’ analyses and, based on the results, can require building setbacks outside of the inundation area.

## **Overview of Corridor Actions, Plans, and Tools**

Table 1 shows a range of corridor management and preservation actions and their relationships to various types of adopted plans and implementation tools. It shows that adopted comprehensive, thoroughfare, and statewide and regional transportation plans provide the base on which the other more specific plans and implementation tools are built. Those plans specify policies that the implementing agencies would follow in implementation. For example, a city’s comprehensive plan might contain a policy that the city have a corridor preservation program, which prioritizes CM and/or CP treatments, and establishes a funding mechanism and strategies for the city to purchase ROW or options in advance of need.

**Table 1. Types of Corridor Management and Preservation Actions, Plans, and Implementation Tools.**

Corridor Action	Plans			Implementation Tools				
	Comprehensive	Thoroughfare	Statewide or Regional	Design Standards or Policies	Corridor Specific Plans	Access Management Regulations	Subdivision/ Platting Regulations	Zoning Ordinance
<b>Corridor Management</b>								
Connectivity	P	●	P	●	●		●	●
Access roads	P	●	P	●	●	●	●	●
Median openings	P	P	P	●	●	●	●	●
Driveway spacing	●	●	●	●	●	●	●	●
Signal spacing, location	P	●	P	●	●	●		
Access easements	●	●	●	●	●	●	●	●
Acquisition of access rights	●	●	●	●	●	●	●	●
Access management plans	P	P	P	●	●	●		
Clustering development	P			●	●		●	●
Traffic impact analyses	P	P	P		●	●	●	●
ITS/operations strategies	P	●	P		●			
Setback requirements	P	P	P		●			●
Site plan review	P	P	P	I		●	●	●
Access permits	P	P	P	●	●	●		
<b>Corridor Preservation</b>								
Dedication (via plat)	P	P	P	●			I	
Reservation (via plat)	P	P	P	●			I	
Impact fee credit	P		P					●
Purchase development rights	P				P		●	●
Transfer development rights	P				P		●	●
Transfer of density rights	P				P		●	●
Fee simple purchase	P	P	P		I		●	●
Option to purchase	P	P	P		I		●	●
Protective purchase	P	P	P		I		●	●
Hardship acquisition	P	P	P		I		●	●
Early acquisition	P	P	P		I		●	●
Property exchange	P	P	P		I		●	●

Legend: P = policy, I = implementation, ● = specific part of plan or action.

Table 2 shows tools and methods that can be used in cities, ETJ areas of cities, and counties in Texas. For each method or tool, it indicates if it is usable for CM, CP, or both. A check '✓' indicates where a tool can be used.

**Table 2. Comparison of CM&P Authority between Cities, Counties, and ETJs.**

Method or Tool	CM, CP or Both	Cities	Extra-Territorial Jurisdictions (ETJ)	Counties
Comprehensive (land use) Plan	Both	✓		
Transportation Plan	Both	✓	✓	limited
Zoning	CM	✓		
Regulate Land Use/Density	Both	✓		
Overlay Zones -	CM	✓		
Building Setbacks	CM	✓		
Parking Setbacks	CM	✓		
Landscaping Requirements	CM	✓		
Aesthetic Controls (signs, architectural, lighting)	CM	✓		
Clustering Development	Both	✓		
Subdivision Regulations	Both	✓	✓	✓
ROW Dedication via Platting	Both	✓	limited	limited
ROW Reservation via Platting	Both	✓	limited	limited
Street Size via Functional Class	Both	✓	limited	limited
Street Layout / Connectivity	Both	✓	limited	limited
Access Easements	CM	✓	limited	limited
Lot Size / Dimension Requirements	Both	✓	limited	limited
ROW Acquisition/Preservation	Both	✓	✓	✓
Fee Simple Purchase	Both	✓	✓	✓
Negotiated Purchase	Both	✓	✓	✓
Advanced Acquisition (Hardship, Protective, Options)	CP	✓	✓	✓
Condemnation	Both	✓	✓	✓
Temporary Use Agreements	CP	✓	✓	✓
Property Leaseback	CP	✓	✓	✓
Access Management	CM	✓	✓	limited
Driveway Spacing Requirements	CM	✓	✓	limited
Driveway Design Criteria	CM	✓	limited	limited
Purchase of Access Rights	Both	✓	✓	✓
Signal Spacing	CM	✓	✓	✓
Medians/Facility Design	CM	✓	✓	✓
Miscellaneous Tools/Methods	Both	✓	✓	
Development Agreements	CM	✓	✓	
Purchase of Development Rights	CP	✓	✓	
Transfer of Development Rights	CP	✓	✓	
Traffic Impact Analyses	CP	✓	limited	
Density Transfers	CM	✓	limited	
Operational Measures – signal timing, ITS	CM	✓	✓	

## GUIDELINES FOR TXDOT INVOLVEMENT IN CORRIDOR MANAGEMENT

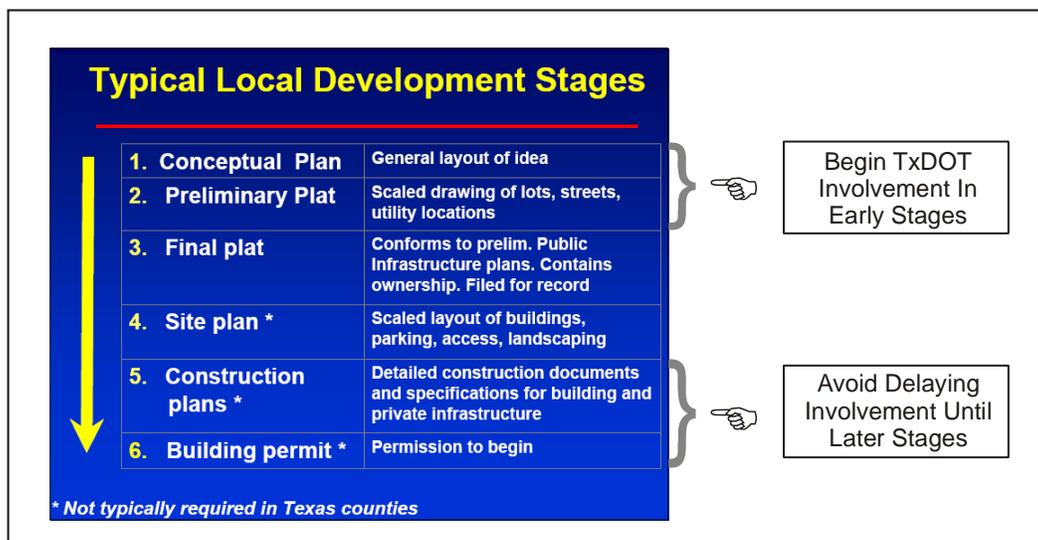
This section provides guidelines to TxDOT district and area offices on how CM plans, practices, and techniques can be applied on existing TxDOT roadways. It discusses approaches that can be used, prioritization of corridors and the tools available to TxDOT within its own authority, and the additional tools and methods that can be applied in partnership with local jurisdictions.

### CM Approaches

Given the separation of state and local powers, a partnership between TxDOT and the local agency is needed for effective corridor management. Tools available are shown in [Table 2](#). Depending on the location and situation, TxDOT may need to coordinate and partner with cities, counties, and MPOs on CM activities. It could also include collaborations with regional transportation authorities and toll authorities. Many cities in Texas already practice various aspects of CM along TxDOT roadways, independent of TxDOT.

For powers that reside under city authority, cities usually prefer to take the lead role. TxDOT can suggest actions to be taken, but the city will have to implement the actions. If TxDOT does not propose or encourage the city to take the initiative, it is possible that no action will be taken until it is too late to achieve the desired condition, or it will be more difficult. As part of CM activities, TxDOT should pursue early and continuing involvement as a partner or advisor in planning and development management activities (e.g., subdivision, zoning, site plan review, access permits, and traffic impact studies). This should be “standard business” and not just an occasional activity used when needs are pressing or time is available.

[Figure 3](#) below shows the typical local development stages in Texas ([5](#)). For developments that impact state ROW and roadways, TxDOT should be involved in the early conceptual planning and preliminary plat stages and should avoid waiting until the driveway permitting stage to become involved.



**Figure 3. Early Involvement in the Development Process.**

The principal activities that TxDOT and local agencies will most frequently need to coordinate are:

- the local site review and development process (continually as part of local city development process and the county subdivision process);
- short and long-range planning (through MPO, regional, and local planning; continually through coordination and involvement in municipal and county land use and thoroughfare planning); and
- TxDOT's roadway design plans and schematics (as part of project development).

TxDOT should also initiate but work in partnership with local agencies to develop and implement along state highway corridors:

- specific local or regional corridor management plans;
- corridor and specific segment or site access management plans (setting up or using an established process for a district or area office-local partnership to apply and enforce TxDOT's Access Management Policy or a city's access ordinances, whichever is more restrictive);
- CM activities for TxDOT projects planned for rehabilitation and/or capacity improvements; and
- zoning overlay districts along, adjacent to, or impacting state highways (TxDOT district-local partnership to develop corridor zoning overlay districts, both project/facility specific and corridor wide).

To make TxDOT's coordination partnership work best, a coordination process should be developed and then established as part of normal procedures. For example, there should be a set of steps for a city to notify interested agencies, including TxDOT, when a subdivision, zoning, or access permit or development application is received by a city (or county) on or adjacent to a state highway or any application that will otherwise impact a state highway. Distribution of the application for TxDOT review, along with a timeline and applicable types of feedback should be established as part of these procedures.

How TxDOT and local jurisdictions coordinate and collaborate on CM can vary widely from district to district. Approaches used by TxDOT and local jurisdictions in corridor management can vary on a project-by-project basis. Reasons for undertaking CM also vary, from safety and capacity preservation objectives to economic development or aesthetic purposes. While CM objectives may vary, a common element of successful CM projects and programs is mutual commitment and collaboration between local jurisdictions and DOTs.

The approaches taken, processes and techniques used, and the scope of activities undertaken can be tailored to address the mutual issues and objectives of the jurisdictions or the corridor. The approaches can and should vary depending on the desired objectives, resources available, and plans and regulations in place.

### **Identify and Prioritize Corridors for CM**

TxDOT and local jurisdictions can identify and designate on-system corridors for management based on mutually agreed factors and criteria. Possible factors and criteria include:

- existing capacity and safety issues;
- timing of future upgrades and rehabs;
- development pressures and immediacy of development;
- land use plans and development trends;
- traffic volumes; proportion of traveling public benefited (relative to other corridors);
- regional mobility and connectivity;
- importance as community entry or gateway; and
- local government support.

Other factors that could be considered in prioritizing corridors for CM include:

- routes serving major tourism destinations, regional attractions, or emergency evacuation;
- corridors located in future growth paths where future widenings or rehabs are likely;
- corridors in older or economically distressed areas where management would help stimulate economic growth;
- facilities with poor aesthetics, visual clutter, or blight;
- preservation of natural scenic value, or having cultural and historic significance; and
- corridors otherwise designated by TxDOT or local agencies for priority upgrades or treatment.

### **CM in Local and Regional Plans**

Corridor management is also an activity which may be used to coordinate land use and transportation planning. It provides the mechanism through which local jurisdictions and TxDOT can work together. All or parts of CM can be pursued individually by cities and TxDOT districts, or it can be done cooperatively between the agencies. TxDOT commonly undertakes aspects of CM, primarily access management as part of project development and access permitting.

#### *Local Comprehensive Plans*

Local comprehensive plans provide the framework for applying the many tools and methods needed in corridor management. They serve as the mechanism that can allow cities and districts to ‘match’ the intensity of land use and pattern of development with the design and function of the TxDOT roadway or corridor.

Comprehensive plans should include, but are not limited to, land use, transportation, and public utility components. They serve as the ‘charter’ that provides for the policies and direction for future development and serve as a city’s guide to establishing development regulations. Special studies such as ‘small area plans,’ corridor studies, or corridor management plans can be adopted and incorporated into the plan.

TxDOT and MPOs should coordinate with cities to incorporate some or all of the following into local comprehensive plans:

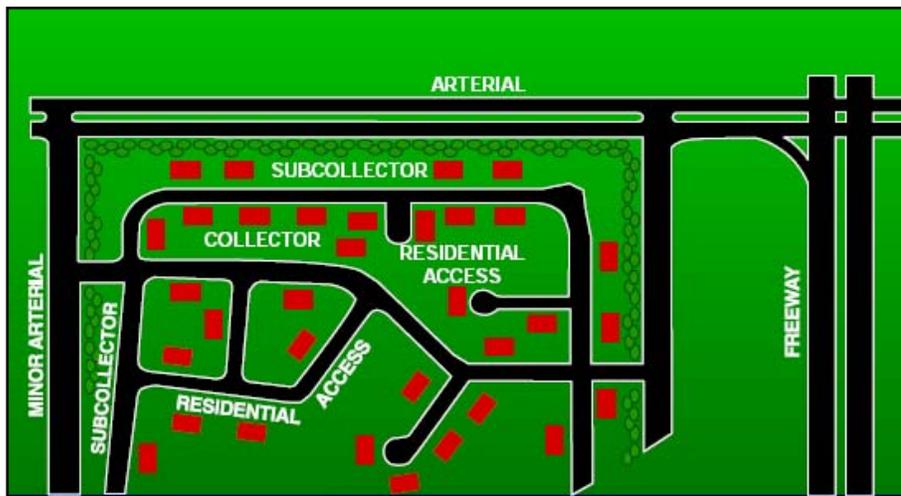
- corridor management policies;
- designation of TxDOT corridors for special treatment;
- prioritization of TxDOT corridors for improvement; and
- specific corridor management projects.

#### *Local and Regional/MPO Transportation Plans*

Like local comprehensive plans, MPO and regional transportation plans should contain components on CM, such as policies, designations, and priorities. Regarding corridor designations and priorities, MPO plans should contain the factors and criteria that should be used within the MPO planning area to prioritize TxDOT corridors for special management status. The criteria and factors should be developed through input from all member entities in the MPO.

MPOs can play a key role in CM through facilitating coordination between local jurisdictions and TxDOT and in educating the public and community leaders on the importance and benefits of CM. Federal law calls for MPO plans to identify corridors in most need of action to prevent destruction or loss (2). MPOs, if they are not already, should include corridor management in their work programs.

Local and regional transportation plans show the general size and spacing of roadways by functional classes such as freeways, arterials, and collectors. These plans can support CM by prescribing that local street networks adjacent to major corridors are sized and laid out following the rules of functional street hierarchy. Under these rules, minor streets serving local short trips should not take direct access to major corridors as shown in Figure 4. TxDOT should be a key participant in local transportation planning to minimize unnecessary minor street connections to state highways.



Source: Listokin, D. and Walker, C. The Subdivision and Site Plan Handbook, New Jersey: The State University of New Jersey. Figure excerpted from Florida DOT Access Management CD Library, 2005.

**Figure 4. Functional Street Hierarchy: No Minor Street Connections to Arterials.**

## *Corridor Management Plans*

A CM plan is a long-range planning document that addresses all aspects of transportation, land use, and development along a designated corridor. It is a detailed planning study on roadway design, access, land use, and traffic operations. When prepared by partnerships of local agencies with TxDOT districts, they are strategic documents that can be used to guide city policy and private development decisions such that they are suitable to the ultimate design and function of the TxDOT corridor. CM plans can be used to address:

- corridor safety, operations, and progression;
- land use types and intensity;
- development patterns, quality, and design standards;
- landscaping and corridor aesthetics;
- revitalization and economic development; and
- location and placement of utilities.

CM plans are of most benefit to corridors situated in the path of growth and development trends, which not coincidentally, are often TxDOT corridors included on MPO transportation improvement plans (TIPs) slated for rehabilitation, widening, and/or urbanization.

CM plans are growth management tools that show local and state foresight and preparedness (*1*). They pay significant dividends in the future in terms of more orderly growth, better progression, enhanced aesthetics, increased tax base and values of private investment, and less costs for future transportation improvements. Once a corridor has been designated for management, all cooperating jurisdictions should adopt resolutions and/or a non-binding partnership agreement on their mutual commitment to manage the corridor.

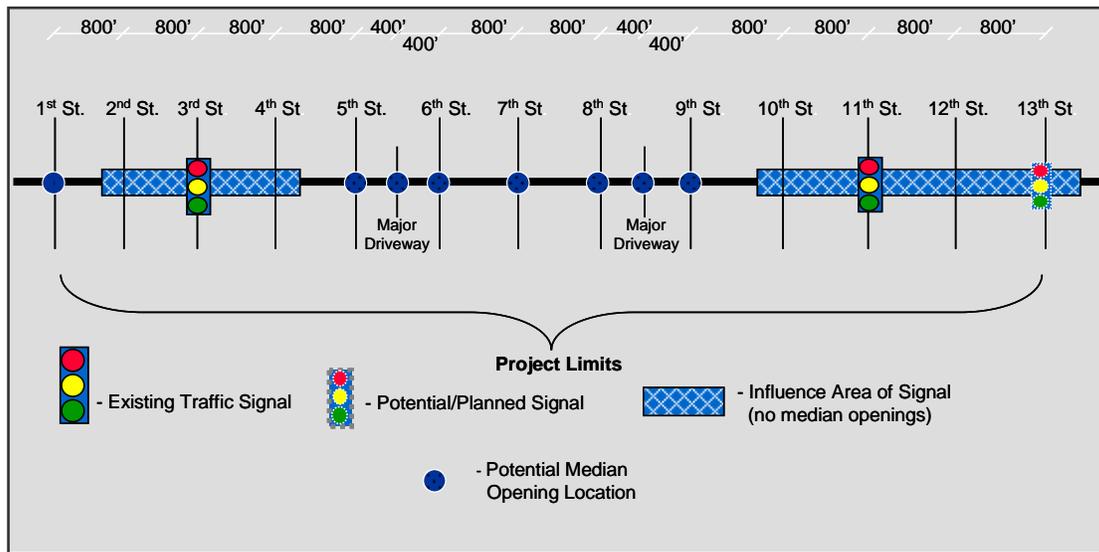
TxDOT and local jurisdictions should develop corridor management plans because they allow for the coordinated application of local land use and development regulations together with TxDOT roadway design, access, cross section and right of way. CM plans address future medians, median openings or closures, future signalization, future cross street intersections and major driveway locations.

CM plans help guide, in conjunction with the comprehensive plan and zoning, future development along a corridor in a strategic manner to achieve an ultimate corridor transportation vision. A corridor management plan enables the partnering agencies to address changes in the corridor on a comprehensive approach, rather than in a piecemeal manner. TxDOT districts, MPOs, and cities should use CM plans as a collaborative approach.

Each corridor management plan will be unique to address the unique conditions, circumstances, or issues of each corridor. Corridor management plans can have many objectives including capacity protection, preservation of safety and efficiency, preserving or enhancing the appearance or unique character of the corridor, promoting economic development, and revitalization. The scope of the CM plan can vary widely depending on the issues and objectives and the future land use plan along the corridor. CM plans typically inventory existing conditions such as land use, access, traffic operations and safety, utilities, topography and floodplains, property lines and ownership to provide a base for the plan. Individual corridors can be designated with local plans for specific actions.

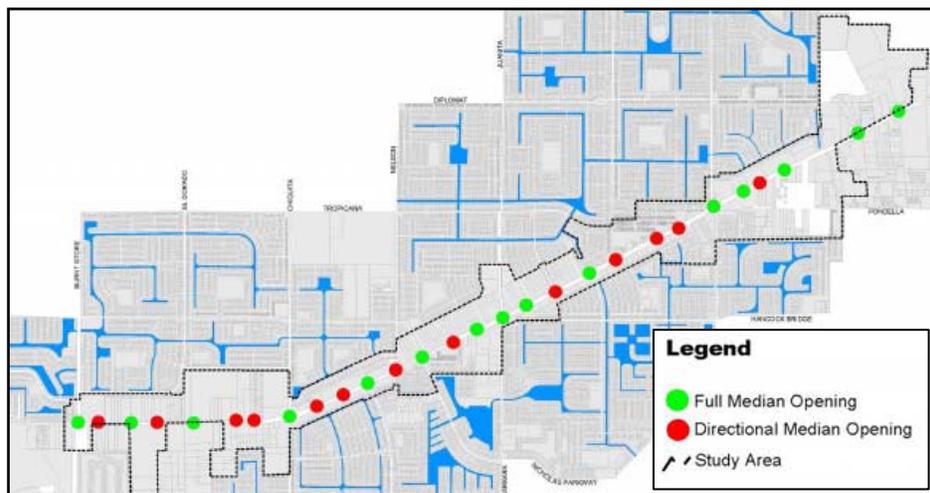
## Corridor Access Management Plans

A corridor access management plan is a corridor management plan that focuses on all aspects of access such as driveways, public street connections, signalization, and medians along the corridor. If corridor limits allow, a base map or schematic of the corridor should be prepared, which shows the existing ROW, roadway cross-section and signalization, property lines, and existing and future land uses. All existing driveways along the corridor should be inventoried and added to the map along with designation of parcels as developed or undeveloped. An example of a conceptual corridor access management plan addressing median openings and signalization is shown in Figure 5. An example corridor plan addressing only median openings is shown in Figure 6.



Source: Corridor Access Management Training, PowerPoint Presentation, Systems Planning Office, Florida DOT

**Figure 5. Conceptual Corridor Access Management Plan.**



Source: Pine Island Road Corridor Master Plan, City of Cape Coral, FL, October 2001.

**Figure 6. Example Corridor Median Plan.**



provide cities increased authority and discretion in requiring that the plan be implemented as development occurs.

## CM Tools and Techniques

This section summarizes the toolbox of methods and techniques that can be used for corridor management. A listing of all CM Tools and Methods covered in this section are shown in [Table 3](#).

**Table 3. List of CM Methods and Tools.**

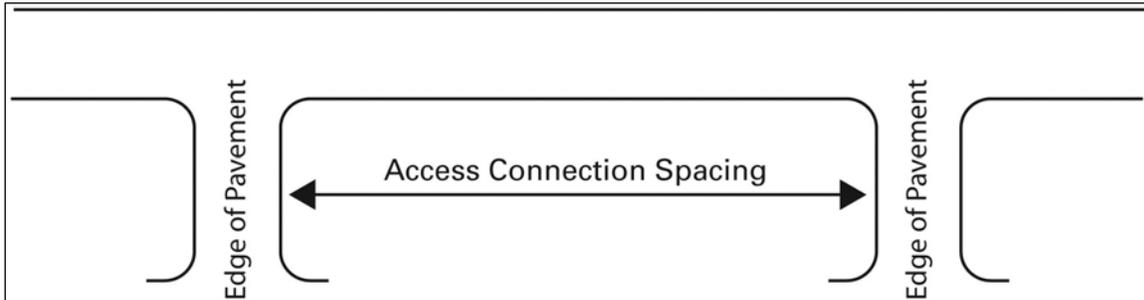
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### *Access Management*

The Transportation Research Board defines access management as ‘the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.’ TxDOT practices access management through its access and roadway design manuals and applies these guidelines to improvements of existing facilities and construction of new roadways. Local or TxDOT access guidelines, whichever the more restrictive, should be applied at all stages of the local development process along TxDOT roadways, as opportunities arise.

Guidelines on the use of various aspects of access management are provided below. For specific criteria on access management, refer to TxDOT’s *Access Management Manual*.

**Driveway Spacing.** Driveway spacing guidelines limit the number of driveways on a roadway by establishing a minimum separation distance between driveways. Spacing requirements help reduce the probability of incidents as vehicles enter and exit the roadway. They also increase the likelihood of shared and or cross access between developments. Spacing distance between driveways, as shown in [Figure 8](#), is measured from the closest edge of pavement of the first access to the closest edge of pavement of the second access.



**Figure 8. Driveway Spacing Measurement.**

TxDOT’s *Access Management Manual* provides driveway spacing criteria for frontage roads and other state highways (see Tables 2-1 and 2-2 in manual). The spacing distances set forth in TxDOT’s access manual, shown in [Table 4](#), are provided for general guidance and informational purposes. The distances are based on posted speed limits and represent distances required for passenger cars on level grade. The distances may be increased for downgrades, truck traffic, and as needed for safety and operational concerns and design constraints or physical limitations.

**Table 4. TxDOT Driveway Spacing Guidelines.**

Posted Speed (mph)	Distance (Feet)		
	Existing State Highways (excluding freeways and frontage roads)	Frontage Roads	
		One-Way	Two-Way
≤ 30	200	200	200
35	250	250	300
40	305	305	360
45	360	360	435
≥ 50	425	425	510

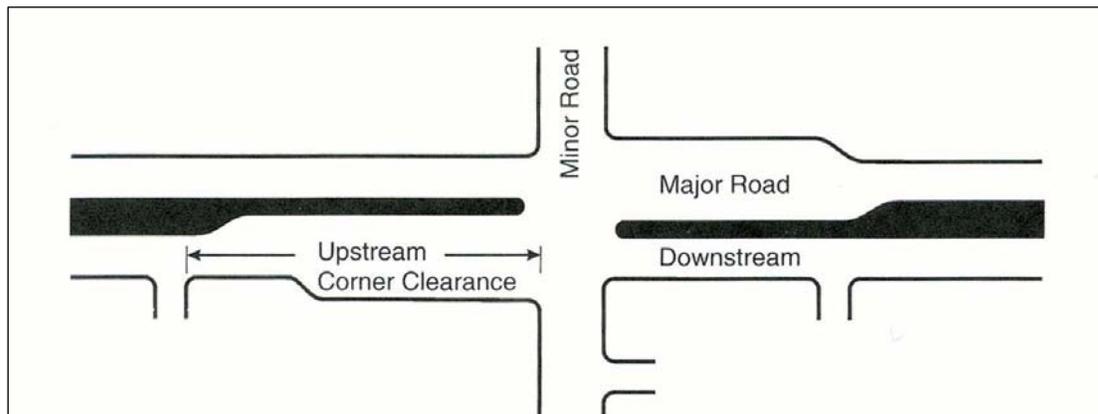
TxDOT’s *Access Management Manual* should be consulted for more detail prior to application of the above guidelines. For frontage roads, special consideration must be given to driveways proposed to be located within the proximity of an entry or exit ramp. The above criteria do not apply to rural highways outside of MPO boundaries where there is little potential for development, and ADT levels are below 2000.

Driveway spacing on TxDOT roadways may also be regulated by local access ordinances or development regulations (if based on sound engineering practice and accepted access management principles). Some local access regulations may be based on roadway functional class instead of the posted speed limit. In instances where spacing distances differ between TxDOT’s criteria and acceptable local access regulations, the more stringent of the regulations should be applied.

Access to non-conforming properties should be reviewed when:

- New driveway permits are requested.
- Significant structural change or enlargement is planned (e.g., requiring a building permit)
- Change in land use is under consideration.
- Change in significant trip generation is noted.

Corner Clearance. Corner clearance is the distance or separation between an intersection and the nearest access point. Corner clearance standards are needed in order to avoid or reduce conflicts between driveway traffic and vehicle queues and turning movements at intersections. If at all possible, driveways should not be permitted in the functional area of an intersection, which includes all areas where auxiliary lanes (e.g., left and/or right-turn lanes) are present. Figure 9 illustrates upstream and downstream corner clearance.



**Figure 9. Upstream and Downstream Corner Clearance.**

TxDOT's *Access Management Manual* requires corner clearance spacing equal to the driveway spacing criteria for the roadway. Some cities require corner clearance spacings greater than the spacing requirements for the roadway, particularly for major signalized intersections. At the local level, such enhanced criteria can be established by ordinance or required at the discretion of the development engineer based on specific traffic conditions. Where corner clearance spacing cannot be achieved due to lack of property frontage, access may be permitted along the property line farthest from the intersection. In such cases, conditions to consider for driveways not meeting corner clearance include:

- a requirement that the access be designed as a restricted movement driveway (e.g., right-in, right-out); and
- a requirement that access be shared with the abutting property.

The following local requirements related to corner parcels may be currently in place or could be included in subdivision regulations or development ordinances to help meet corner clearance requirements:

- shared or cross-access easements shall be required to all abutting properties of corner parcels;
- full movement driveways shall not be permitted in the functional area of a signalized intersection. Restricted movement driveways may be considered on a case by case basis based on an engineering study as appropriate or at the discretion of the local development (review) engineer;
- minimum lot size requirements and/or land use limitations for corner parcels through zoning; and
- outparcels must obtain access from within the site (e.g., shopping center) with no direct access to the public roadways.

Acquisition of Access Rights. Acquisition of access rights to a roadway from abutting parcels is another tool that can be used in CM and CP. Under this method, the property right of access for abutting parcels is acquired through purchase or eminent domain. Compensating property owners for access rights precludes the ability for future claims of a regulatory taking due to denial of access since the right of access is removed. Control of access rights is discussed in Section 15 of TxDOT's *ROW Manual*.

Access control by the acquisition of access rights is federally mandated on the Interstate Highway System. While full control of access is purchased along federal interstate highways, typically only partial access rights are purchased or acquired along state and local non-freeways and arterials. Acquisition of *partial access rights* is where the right of access is prohibited along a highway segment but openings are left at specific locations in the access control line where access may be considered (6).

Acquisition of access rights is a CM method that is used by TxDOT primarily for new highways and new alignments that the Commission has determined to be controlled access facilities. It can also be used by districts on upgrades to existing highway facilities, particularly those where additional ROW is acquired. This technique can be used:

- for prohibiting access on facilities designated as controlled access;
- to control access and sight distance at intersections;
- for establishing long-term or permanent access control;
- to preclude future access in the area of ramps or intersections;
- on a case-by-case basis for safety or design considerations; and
- on opportunities as they arise in ROW acquisition and project development.

Since acquisition of access rights can be expensive and, in some cases, cost-prohibitive, it should be considered in the planning stage or early in project development. Access control lines should typically be determined prior to ROW acquisition, described in the ROW deeds, and included on the project plan sheets. For tollways and expressways, access rights to abutting properties are acquired and only access via well-spaced public road connections should be permitted.

In Texas, new bypasses and loops around communities (or rehabilitation of existing ones) should be developed with a high degree of access control in order to ensure that these facilities maintain their intended function as a means to serve longer trips at higher speeds. Acquiring access rights is one CM method TxDOT can use to develop loops and bypasses as expressway-type facilities to ensure they serve their intended function long into the future.

Non-Traversable Medians. Non-traversable medians are one of the most effective access management tools and in some cases can be the most important component in corridor management. Not only do they improve progression and safety due to reduction in conflict points, but they can also play an important role in influencing land use and how property develops along a TxDOT corridor.

Raised or divided medians installed on urban or suburban corridors ahead of development reduce the likelihood of ‘strip’ commercial development and increase or force the use of inter-parcel connections (e.g., cross-access) between properties. In effect, they can be used to help a city follow its land use plan and address local planning objectives such as avoidance of strip commercial and shared access. Parmer Lane (FM 734) in Austin, shown in [Figure 10](#), is one such example where median installation, in larger part, preceded development.



Source: Google Earth™

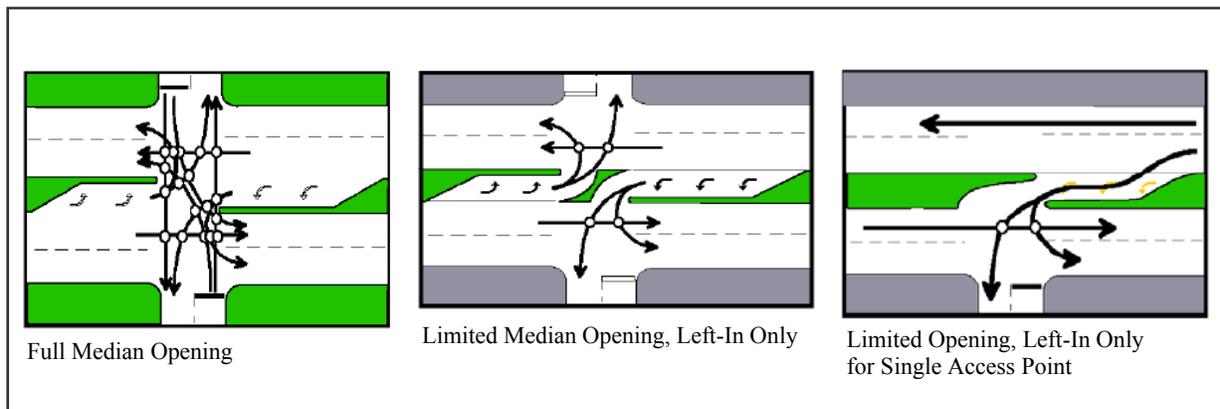
**Figure 10. Raised Medians Parmer Lane (FM 734), Austin, TX.**

It is important that TxDOT districts and local jurisdictions partner on median policy and installation for the following reasons:

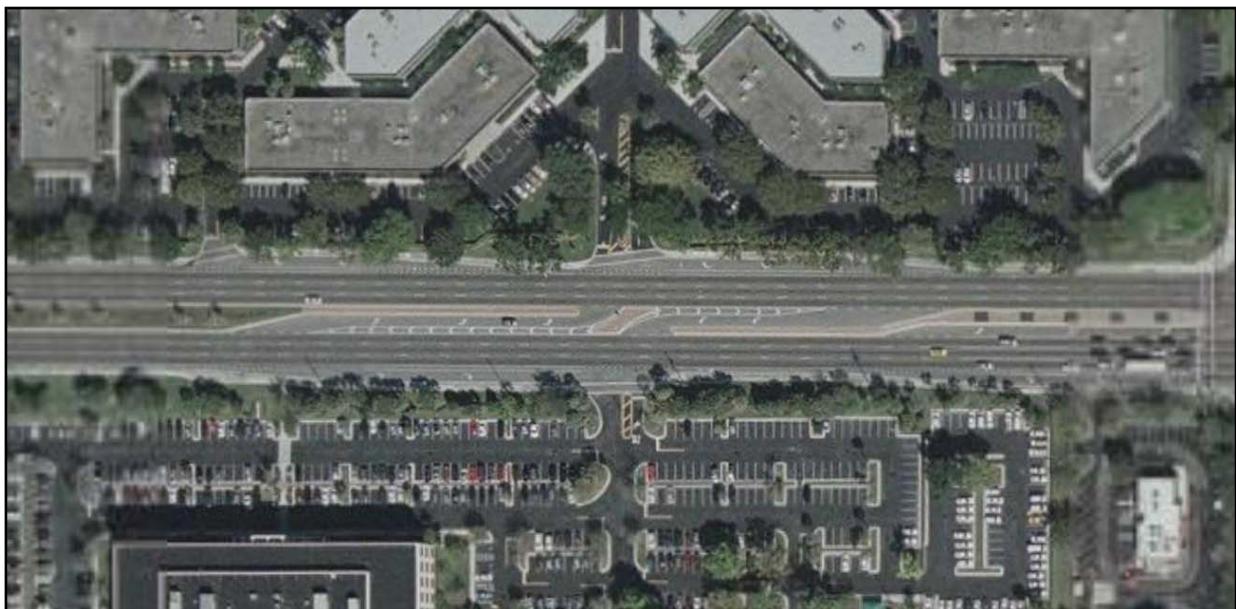
- Median design, particularly openings, should consider (to the extent possible) property lines, site layout, and internal circulation of adjacent properties and developments. Through their zoning subdivision regulations, cities can dictate or influence site layouts and circulation patterns that allow for many or all adjacent properties to benefit from a median opening or gain access to a cross-street. They could also require extended throat depths on driveways at median openings to allow for safer operations.
- Cities and (some) urban counties should adopt a policy and design standards for major thoroughfares on their thoroughfare plans, such as major and/or minor arterials, to include non-traversable medians. Since a high number of major thoroughfares on local plans are state facilities, local median policies would support TxDOT.
- Cities and MPOs should educate community leaders on the importance and long-term benefits of medians and support TxDOT on state projects where medians are needed. There are currently ample educational materials, including videos that should be provided to local community leaders on the importance and long-term benefits of medians.

Median design and minimum median opening spacing requirements can be found in the TxDOT *Roadway Design Manual*, Chapters 2 and 3. Median opening spacing is measured from centerline to centerline of the median openings.

When a full median opening can not be permitted, a directional median opening may be a possible option. A directional median opening has fewer conflict points than a full opening and can be designed to allow only specific turning movements and restrict others. [Figure 11](#) shows full and limited median openings and illustrates the differences in conflict points (shown as hollow dots). In some situations, a restrictive median, in lieu of a fully opened median, could possibly be a compromise option. TxDOT districts or cities should require a detailed traffic study to determine the safety and suitability of restrictive medians. [Figure 12](#) shows examples of a left-turn in only median designs, which may also be known as hooded left turns.



**Figure 11. Comparison of Full and Limited-Opening Medians.**



**Figure 12. Hooded Left Turns, Commercial Blvd, Ft. Lauderdale, FL.**

Signalized Intersection Location and Spacing. The spacing of signalized intersections is a key component of an access and/or corridor management plan. Long and uniform spacing of traffic signals is needed in order to coordinate signal timings, provide for progression, and maintain continuous traffic flow at the speed appropriate for the arterial or corridor. Long signal spacing increases the flexibility with which signals can be timed in order to accommodate peak and off-peak demand and increasing traffic volumes as new development occurs over time.

The distance between traffic signals that is needed to maintain progression typically ranges from one-fourth to one-half mile for major urban arterials. For limited access expressways and regional arterials, signal spacing may range from 1 mile to several miles. (Texas Engineering Extension Service (TEEX), *City Street Design*, pg. 2-41). Spacing distance can vary depending on factors such as traffic volume, cycle length, roadway design and geometry, and turning movements available at each intersection.

Potential for future signalization is an important consideration in local street network planning and in locating and permitting driveways and median openings. The best way to ensure proper signal spacing occurs as a corridor develops is through the development and adoption of a corridor management plan or a corridor access management plan. The plan would cite future signal locations and median openings and address non-signalized access to the roadway from private access and public streets, taking into account the local street network, property lines, future land use, and topography. Without such a plan in place, it is difficult to uphold signal spacing guidelines, and the location of new signals may be determined largely by development activity and the creation of unsafe or problematic intersections.

In cases where TxDOT and local communities receive pressure to install a signal to address a problematic intersection, in addition to a signal, the use of a non-traversable median or a directional non-traversable median should be studied as a potential means to address the problem or concern. This non-signal option could help maintain proper signal spacing and be less disruptive to traffic flow.

Arterial Frontage and Backage Roads. Arterial frontage and backage roads can be used to provide access to individual developments, in lieu of each individual parcel taking access to the major thoroughfare. They minimize or eliminate access points along a corridor or arterial, yet still can provide good visibility and reasonable access to development. Frontage and backage roads can be used as a means to meet access, signal, and corner clearance spacing requirement criteria. They can also be used to consolidate access for multiple developments and as part of corridor management plans. If constructed in phases or done piecemeal as development occurs, temporary driveways could be permitted initially and then removed once the frontage or backage road is fully complete (7).

Frontage and backage roads impact how development occurs and, to some extent, the types of land uses and activities that may occur. They are difficult, if not impossible, to construct ‘after the fact’ on developed corridors or in retrofit situations and work best when included in early planning or a residential or commercial master development plan. They can support or complement adopted plans and steer development in the direction desired by a community, but can lend themselves to strip commercial development if proper zoning and development regulations are not in place.

Careful attention should be given to the design and placement of frontage roads along corridors in order to avoid creating operational problems at intersections. Lack of adequate separation between the frontage road and the arterial at connector intersections can cause vehicle queues that extend back through the intersections. The amount of separation needed may vary depending on the types and intensity of surrounding land uses, and whether the connector is at a public street or a discontinuous access point serving one or more developments. Figure 13 shows an example of an arterial frontage road with inadequate separation between the frontage and the arterial at a local public street. It also includes graphics from TRB’s *Access Management Manual*, which provides that the separation distance be at least 150 feet but preferably greater than or equal to 300 feet (8).

Figure 14 illustrates an example of a backage road serving commercial development along an arterial road. In the example shown, the backage road was required by the municipality as part of the development and is constructed within an access easement.

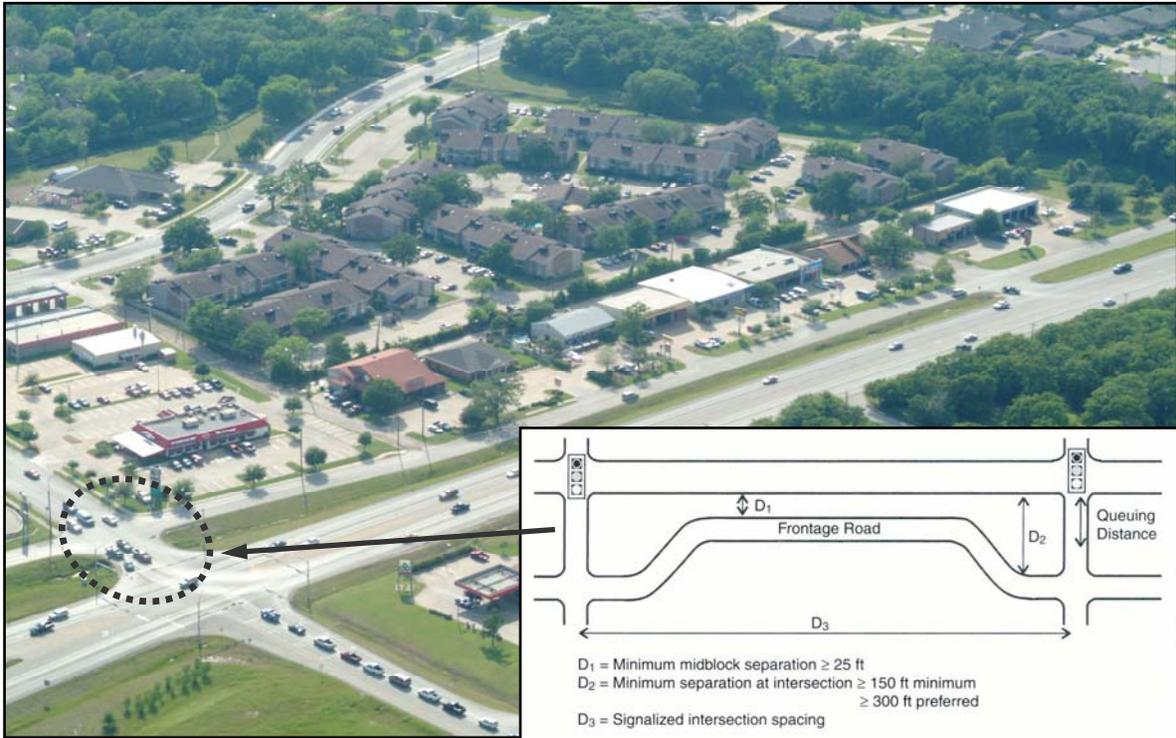


Figure 13. Arterial Frontage Road.



Figure 14. Arterial Backage Road.

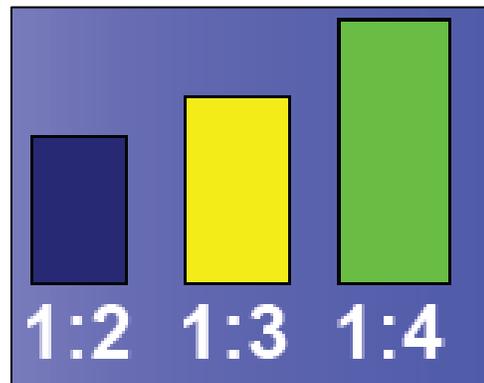
## Zoning and Development Regulations

Zoning is an application of the police power by a government agency. It was originally based on the concept of nuisance (or the interference with the use or enjoyment of one's property) and was created to separate incompatible land uses (9). The allowable uses of land and structures, the intensity or density of development, and the bulk of the building are differentiated by zone or district.

Lot Dimensional Requirements. Deeper and wider parcels along arterials and corridors help facilitate improved access spacing, design, and internal site circulation. Lot dimensional requirements can be included in local zoning districts and include minimum lot frontage amounts and maximum lot width-to-depth ratios. Such requirements can help to prevent the creation of long and narrow or irregularly shaped lots, such as flag lots, that can cause access and site circulation problems, which have a detrimental impact to the corridor. Ideally, minimum lot frontage amounts along a corridor should be at least the same as or more than the access spacing amounts, but in most cases – particularly in urban and suburban areas – this will be difficult to achieve.

For general guidance purposes, the following lot width-to-depth ratios are provided and illustrated in Figure 15:

- 1:4 for rural areas, meaning that lots with 100 feet of frontage may not be deeper than 400 feet, and
- 1:2 or 1:3 for urban and suburban area.



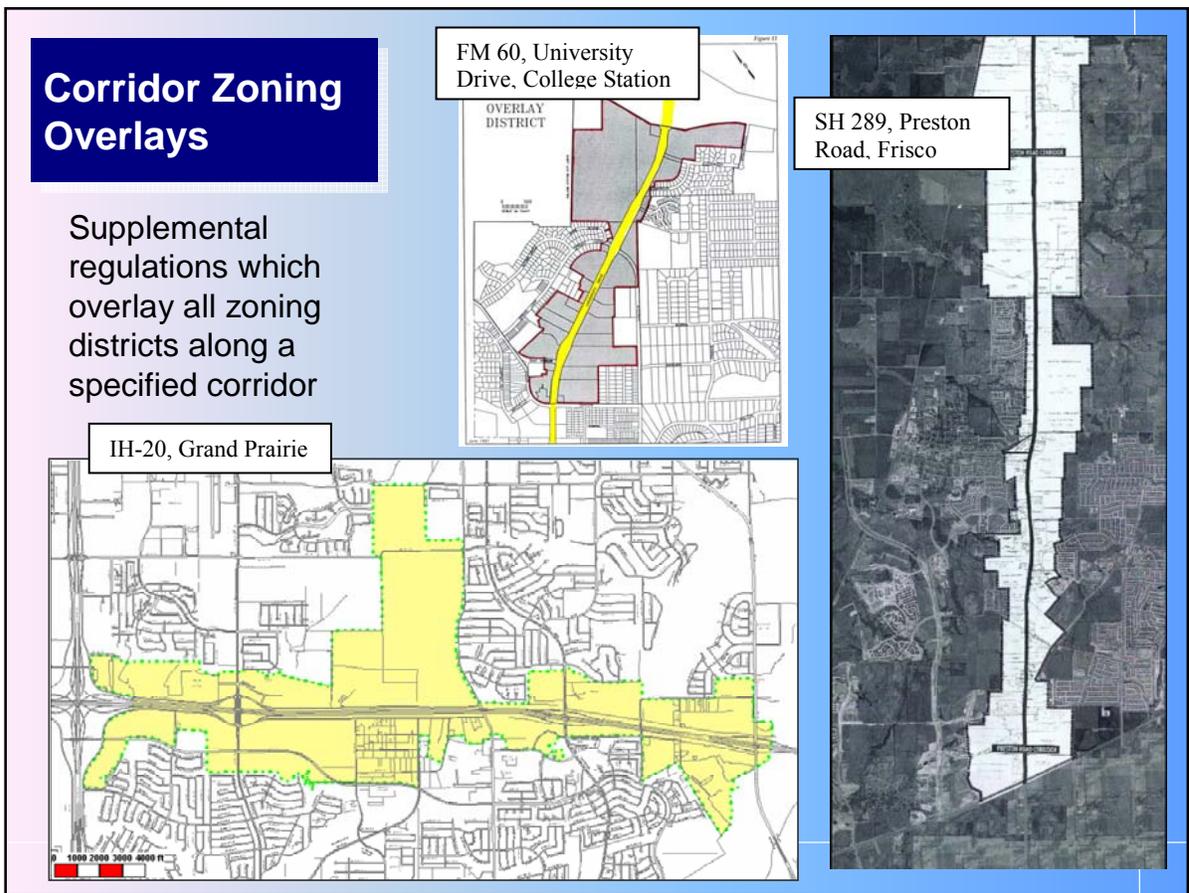
**Figure 15. Lot Dimension Requirements.**

These ratios are cited in many publications around the country on access and/or corridor management. The source of the figures appears to be the state of Florida's *Model Land Development and Subdivision Regulations That Support Access Management*. Greater lot depths along corridors help reduce the likelihood of strip commercial development. Some cities in Texas require minimum lot depths in one or more of their commercial zoning districts as a means to help prevent 'strip' commercial development.

Through local subdivision regulations, lot dimensional requirements can also be used by cities in ETJs. While cities cannot directly regulate density or the number of units per acre in their ETJ, they can establish minimum lot sizes and widths and ROW dimensions. For example, cities can require minimum lot size of multiple acres due a lack of capacity of the adjoining roadway and the lack of availability of public water and sewer. The use of this authority is provided for under Section 212.002 of the Texas Local Government Code in order 'to promote the health, safety, morals, or general welfare of the municipality and the safe, orderly, and healthful development of the municipality'.

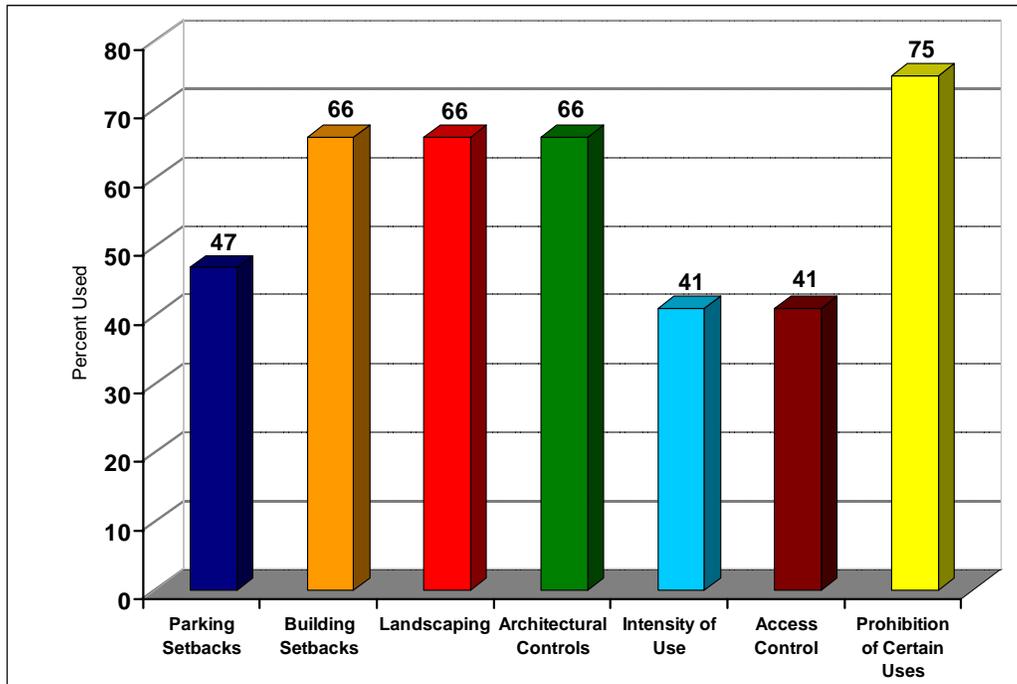
Corridor Zoning Overlays. An overlay zone is a set of one or more special requirements that are ‘overlaid’ onto the existing requirements of the base zoning districts to which it is applied. It superimposes certain additional requirements along a corridor, while still retaining the requirements of the underlying base zoning district of each parcel. Cities in Texas primarily use zoning overlays for prohibiting certain uses and aesthetic purposes, but requirements that have significant transportation benefits can also be added.

A survey of 51 Texas cities in 2007 found that 63 percent of them had used zoning overlays. It is probable that the majority of these are on TxDOT roadways. An illustration of a zoning overlay on TxDOT roadways in the cities of Grand Prairie, College Station, and Frisco are shown in [Figure 16 \(10,11,12\)](#). The overlay zones are represented by the shaded area over the individual corridors.



**Figure 16. Examples of Overlay Zoning Districts on TxDOT Corridors.**

A zoning overlay can be an excellent tool for cities and TxDOT to partner and practice CM along a TxDOT corridor. Zoning overlays can be tailored to address the specific needs or unique conditions of each corridor. Figure 17 shows the types and percentage use of special requirements that are included in zoning overlays based on a 2007 survey to Texas cities.



**Figure 17. Requirements Used in Zoning Overlay Districts in Texas.**

Relative to CM, key items and regulations that can be included in a corridor overlay include:

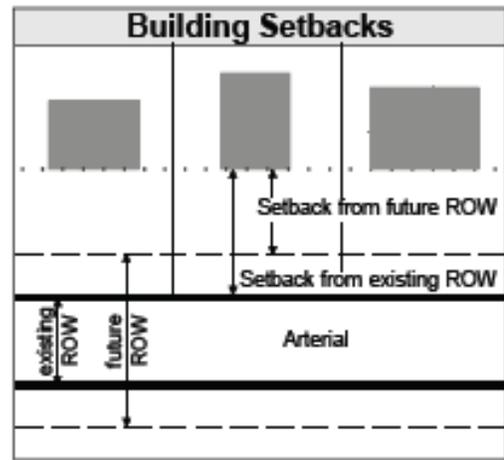
- adoption of an access plan which shows locations of future access points based on meeting TxDOT or local spacing criteria, whichever is greater;
- increased driveway throat lengths;
- shared access and internal connections between adjacent parcels;
- prohibitions on outparcels for direct access to the corridor;
- increased building and/or parking setbacks;
- parking screening (landscaping or berms) between parking and public street ROW; and
- building orientation (e.g., primary structures should face the front of the lot).

Cities in Texas primarily use zoning overlays for prohibiting certain uses and aesthetic purposes, but requirements which have significant transportation benefits can also be added.

**Setbacks.** A setback is an area where permanent structures or improvements are prohibited and required to be ‘set back’ from the existing ROW line. Setbacks are commonly established for front, rear, and sides of parcels and are measured from the property line back to a point where improvements can be constructed. Cities with zoning may establish different setback requirements for different zoning classifications. Building and parking setbacks are commonly used in local development regulations. An illustration of a building setback relative to the ROW line is shown in [Figure 18](#). It shows the setback dimension from both the existing and future ROW line. Under normal circumstances, setbacks can only be based off of the existing ROW line. However, if TxDOT has a schematic prepared which shows the location of the future ROW line and it is consistent with what is represented on an adopted local transportation plan, some local jurisdictions may have the legal comfort level to require setbacks from the future ROW line.

The use of increased building and/or parking setbacks can be an important component in a corridor management plan or a corridor zoning overlay. Many cities in Texas have included increased building and parking setbacks as part of zoning overlays along major community thoroughfares, most of which are TxDOT roadways. Increased building and parking setbacks along a corridor can help reduce property damage and costs if the roadway is widened and corridor aesthetics are improved. Increased parking setbacks often result in increased driveway throat lengths, which aid corridor progression by allowing vehicle storage on-site in lieu of on-road queuing.

Setbacks must be reasonably related to the preservation of public health, safety, and welfare and may not be applied arbitrarily. They can be used along corridors for public safety, aesthetics, noise reduction, and other police power purposes. When applied on a corridor basis as a means of carrying out policies and objectives of an adopted plan or plans, the use of setbacks should be valid and far less likely to be challenged as being arbitrary.



Source: Managing Corridor Development, A Municipal Handbook, Center for Urban Transportation Research, October 1996.

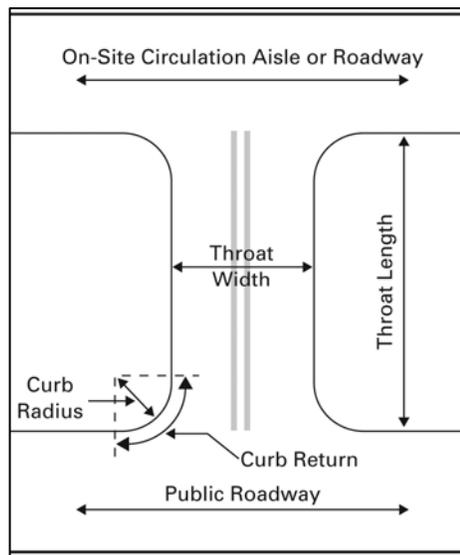
**Figure 18. Building Setbacks.**

Driveway Throat Length. Driveway throat length, as shown in Figure 19, is generally measured from the face of curb or edge of street pavement of the roadway to the closest edge of the on-site parking aisle or circulation roadway. It represents the storage length of the driveway which allows vehicles turning from the roadway to be able to queue on-site rather than waiting in the roadway due to conflicts on-site.

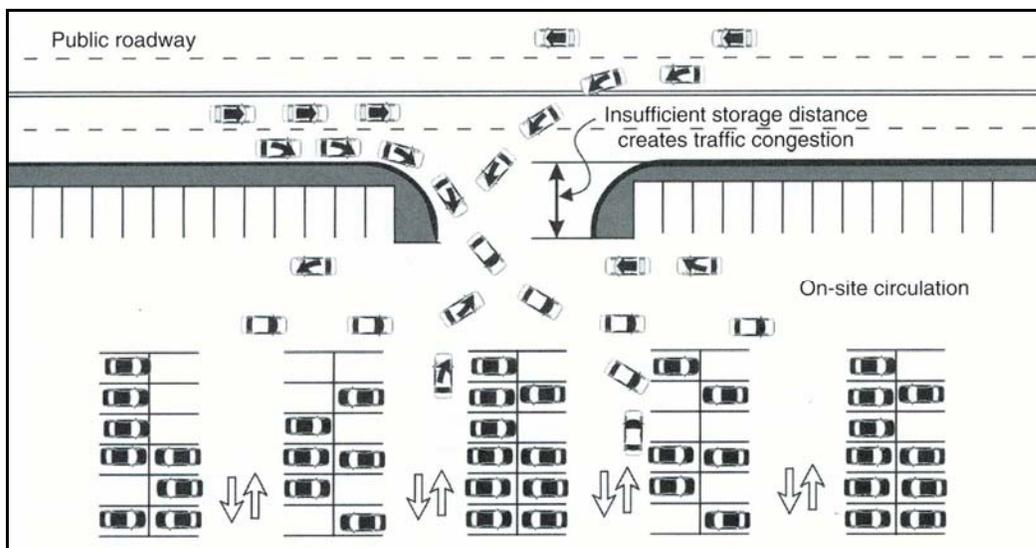
While TxDOT has generally little, if any authority to regulate driveway throat length, cities in Texas regulate throat length:

- on the basis of a roadway’s functional classification,
- on a case-by-case basis depending on the site specific conditions and development intensity, and
- considering a combination of functional class and development intensity.

A local ordinance, which requires a minimum throat length on the basis of functional class, is appropriate for handling most individual sites along an arterial or corridor. Many cities can use their discretionary authority to require greater throat lengths for shopping centers, big box retailers, and other major traffic generators. Figure 20 shows a driveway with inadequate throat length and the resulting conflicts and congestion that can occur.



**Figure 19. Driveway Throat Length.**



Source: Access Management Manual, TRB, 2003.

**Figure 20. Inadequate Driveway Throat Length.**

For general guidance and informational purposes, the City of College Station requires a minimum of 40 and 55 feet, respectively, for throat lengths on minor and major arterials and requires a minimum of 130 feet for more intense uses. Florida's *Model Land Development and Subdivision Regulations That Support Access Management* includes the following guidelines for throat length:

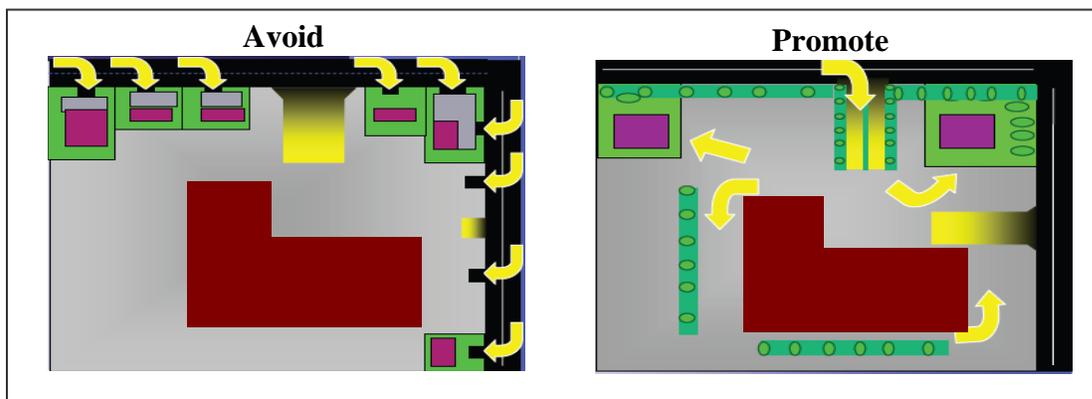
- 200 feet for shopping centers > 200,000 ft<sup>2</sup> Gross Leaseable Area (GLA);
- 75-95 feet for smaller developments < 200,000 ft<sup>2</sup> GLA; and
- 40-60 feet for unsignalized driveways.

The use of driveway throat length regulations along a corridor benefits traffic safety, flow, and aesthetics. When applied in site design and layout, they often have the affect of increasing the parking setback which results in more greenspace and a decreased likelihood of improvements being made in future ROW that may be needed to achieve the facilities ultimate design.

Access to Outparcels. Outparcels are smaller individual lots typically located on or around the perimeter of a larger parcel that abuts a major roadway. Often times, these are the smaller developments such as franchise restaurants or convenience store/gas stations that are located within a shopping center with big box retailers and other anchor stores. Local development regulations and policies can be used to require that outparcels must take access internal to the development and not take direct access to the public roadway. **Figure 21** is a general illustration showing that access from the public street to outparcels should be avoided and that access to these tracts from within the development should be promoted (13).

Access to outparcels should be internalized and incorporated into the layout and circulation of the overall development or shopping center. A requirement for 'unified access and circulation' for developments containing outparcels can be incorporated into local development policies and ordinances. Cross access easements or blanket access easements covering the entire development can be used to implement unified access and circulation.

In cases where land is being subdivided or consolidated to create a development with outparcels, access easements should be included on a master preliminary plat, which provides for unified access and circulation to and between all current or future parcels for all phases of the development. An adopted master preliminary plat or development plan can be used to make all prospective purchasers of outparcels aware of the access requirements.



Source: Land Development Regulations That Support Access Management , Powerpoint Presentation, Center for Transportation Research, University of South Florida, 2002.

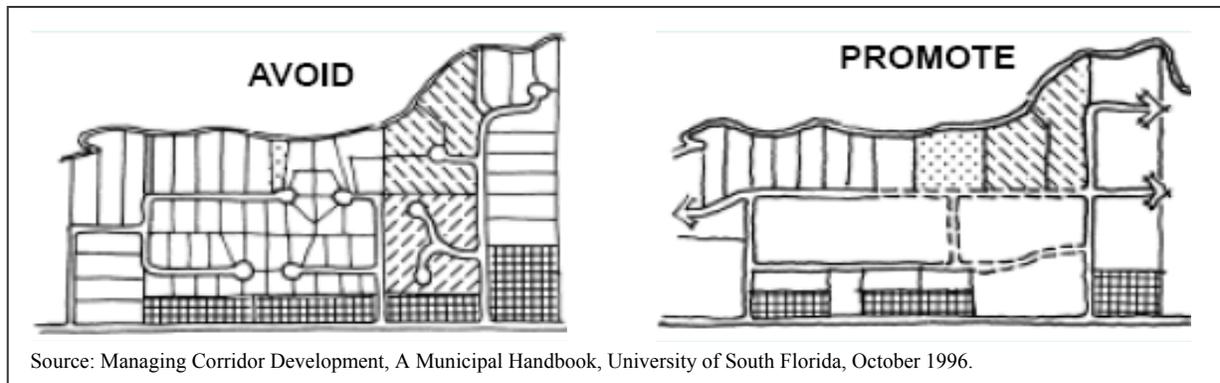
**Figure 21. Access to Outparcels.**

### Subdivision Regulations

Subdivision regulations are used to regulate the subdivision of land and establish requirements for infrastructure (if any), typically in accordance with a comprehensive plan. It is through the platting process that a municipality gains compliance with elements of their plan (e.g., thoroughfares, parkland, and utilities) and some development regulations (e.g., access). Most municipal subdivision regulations reference conformity with their comprehensive plan. It is also during the platting process that key elements of CM and CP such as access and ROW dedication or preservation can be addressed, both along state and local roads. Subdivision regulations, in combination with zoning, can also be used to control lot sizes and depths and require easements for access, drainage, and utilities.

**Local Networks and Connections.** Too many local street connections can have the same detrimental impacts on corridors as private driveways. In the planning and platting of local streets, all connections to TxDOT roadways should conform to adopted spacing standards relative to functional class of the connecting street as well as that of the TxDOT roadway. Properly spaced and laid out local streets can reduce demand on a corridor by serving as a secondary street system. In many cases, local streets paralleling the corridor with reasonably spaced side street intersections will achieve this objective.

Figure 22 depicts general street layouts adjacent to arterials that should be avoided and promoted. Connectivity of the local street network adjacent to the corridor is important because it reduces the need for direct access to the corridor and removes local, short trips from the facility. By virtue of the connections, it can also result in more individual sites along the corridor having access to signalized intersection. Use adopted plans and spacing standards to achieve a balanced network of site streets, improved connectivity, and circulation systems for commercial activity centers.



**Figure 22. Local Street Connections Adjacent to Corridors.**

**ROW Dedication Through Platting.** Right-of-way dedication is the conveyance of property needed for a transportation facility or site related improvement(s) from a private landowner to the public. It is an exaction (e.g., mandatory contribution) placed on a developer requiring ROW dedication in accordance with an adopted plan. Since local thoroughfare plans commonly include state roads – cities and in rare cases, counties – can require that ROW be dedicated for TxDOT facilities when abutting properties are platted or subdivided if:

- additional ROW is needed in order to gain compliance with an adopted municipal or county thoroughfare plan. For example, if the existing ROW is 100 feet and the plan calls for the designated functional class of the facility to have 120 feet of ROW, the local jurisdiction could require 10 feet of ROW dedication; or
- the amount of ROW dedication is roughly proportional to the impact of the development.

It is common practice by most cities in Texas to require ROW dedication and/or reservation of ROW along state facilities as part of their platting process (3). Important factors that cities consider in dedication include the amount of ROW required, its reasonableness related to the development in question, and the stage of planning TxDOT is in on the project for which ROW is needed.

TxDOT districts and area offices should coordinate with cities on state facilities in need of additional ROW. The amount of ROW required for state roadways via functional designations on adopted local plans should be reviewed and changed as necessary to accommodate future TxDOT cross-sections. TxDOT or mutually agreed upon ROW and/or design requirements could also be incorporated into local development regulations. Without TxDOT input, local jurisdictions may not consider TxDOT's future ROW needs when processing plats along state facilities. This can create significant and costly problems because most local development ordinances regulate on-site improvements relative to ROW location.

ROW Reservation Through Platting. A reservation is the designation of future ROW on a subdivision plat. The purpose of a reservation is to prevent development in the reserved ROW. Unlike a dedication, a reservation does not transfer ownership of property. In cases where the impact of the development may not justify dedication of ROW, a reservation may be a possible (negotiated) compromise option.

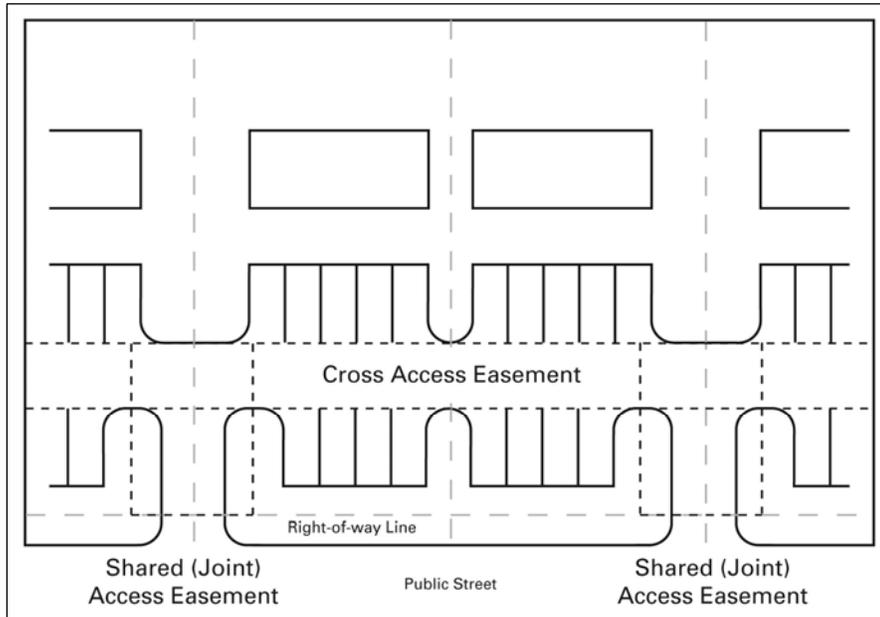
When property is designated as 'reserved' ROW on a subdivision plat, developers cannot make permanent improvements on the portion of their site that has been so designated. This ensures that parking lots and structures are not built on the portion of the tract that is reserved for future state ROW. When TxDOT is ready to develop the facility, perhaps many years in the future, it will then purchase the ROW reserve from the landowner. While ROW reserves do not transfer property ownership, they help to reduce the costs of future ROW acquisition by ensuring that TxDOT will not pay damages for removal of improvements such as parking lots or buildings.

In development cases where a dedication is not or cannot be required, both TxDOT and local jurisdictions can request that the property owner voluntarily set aside or reserve ROW that is needed, particularly on facilities that TxDOT has plans to widen or upgrade. If preliminary design schematics are available that show future back of curb and future ROW lines, many developers may voluntarily agree to reserve the ROW needed knowing that TxDOT will purchase it from them in the future.

Joint and Cross Access. An access easement is a voluntary or required grant of the right of access on or across property by a property owner for use by the public. Access easements are perhaps the single most important tool in carrying out local and TxDOT access spacing criteria as part of the local development process. When property is being subdivided into frontage amounts that cannot meet adopted driveway spacing criteria, local jurisdictions can require access easements (in accordance with an adopted policy or ordinance) in order that proper spacing can be achieved.

Cross access easements, as shown in [Figure 23](#), are situated parallel to the street ROW line and are often centered on parking aisles or circulation roadways. The use of increased driveway throat lengths can result in cross-access easements being located further into the site.

Many cities in Texas have ordinances or policies in place that require access easements. For general information and guidance purposes, a section on cross access easements in a city’s Unified Development Ordinance (UDO) is provided in [Figure 24](#).



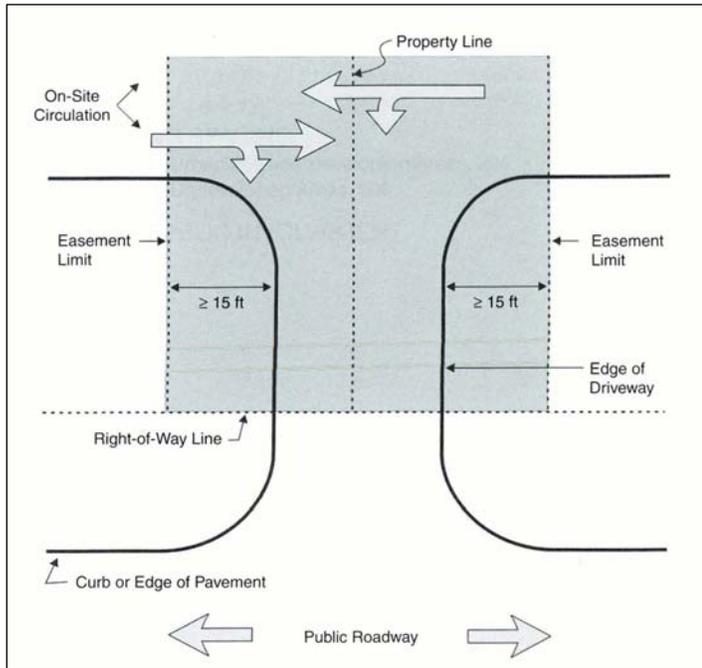
**Figure 23. Placement of Shared and Cross Access Easements.**

**Cross-Access Easements**

- a. If a parcel is to be developed for any nonresidential land use, a cross-access easement shall be provided by the property owner to adjoining properties that front on the same street and that are, or may be, developed as nonresidential land uses.
- b. Cross-access easements shall be situated parallel to the street right-of-way line abutting both parcels. The property owner shall maintain access easements.
- c. The property owner shall provide appropriate documentation of a good faith effort to extend the access easement through all immediately abutting properties. If such an effort fails, the portion of the easement on the subject site shall be developed and designed to ensure future connection to the neighboring properties.
- d. Where a cross-access easement is granted, no permanent structures or parking that would interfere with the proposed access shall be permitted in the easement. Some improvements such as medians and parking islands may be constructed within an access easement if it has been demonstrated that adequate circulation and cross access has been accomplished, and that all applicable standards of this UDO have been met.
- e. The Development Engineer may waive the requirement for an easement of access required above in those cases where unusual topography or site conditions would render such an easement of no useable benefit to adjoining properties.
- f. The Development Engineer may approve the vacation of an easement of access in those cases where adjoining parcels are subsequently developed with a residential use.

**Figure 24. Example Ordinance Language for Cross Access Easements.**

A shared access easement is centered on the property line between two abutting parcels, which allows these parcels to share a single driveway. An illustration showing generally how shared access easements could be reflected on a plat is shown in [Figure 25](#) as the shaded area. Note that the easement begins at the ROW line and is drawn large enough to encompass internal turning movements associated with the driveway.



Source: Access Management Manual, Transportation Research Board, 2003

**Figure 25. Illustration of a Shared Access Easement.**

### *Operational Measures and ITS*

Part of corridor management is management of the transportation facility to optimize operations. Optimization from an efficiency perspective means matching capacity to demand, minimizing delays, and achieving continuity of operation so bottlenecks and queues do not occur. Intelligent transportation systems can be employed technologically, operationally, and through design.

Ideally all major roadway facilities should be included in corridor operations plans. These plans provide for coordinated operations through coordinated and optimized traffic signal operation (signals retimed approximately every three years, signal progression, system management, preventive maintenance program, and regular monitoring and evaluation of operations), incident management (detection and response), and optimized capacity at critical (high volume or turn volume locations.) The latter requires matching volume demands with capacity through operations or capital improvement. Some measures that can be utilized include:

- two lane ramps;
- direct ramps;
- flyover ramps;

- braided ramps;
- auxiliary lanes;
- HOV or managed lanes;
- multiple turn lanes;
- intersection flyovers, underpasses, or grade separations;
- turn restrictions;
- limited median openings;
- reversible lanes or streets;
- queue bypass lanes;
- continuous flow intersections; and
- other innovative or common measures.

In major urban areas, consideration should also be given to having a coordinated operations management team consisting of operations managers from TxDOT and city, county, transit, and other transportation and emergency response agencies. In areas suffering from congestion, a transportation management center, equipped with monitoring and traveler information systems, can be very beneficial if properly used. Staff and financial resources may affect what can be accomplished and how long it will take to have an effective system up and running.

## **GUIDELINES FOR TXDOT INVOLVEMENT IN CORRIDOR PRESERVATION**

This section provides guidelines to TxDOT on general policies, approaches, and techniques that can be used for TxDOT's involvement in corridor preservation. It provides guidance on identifying and prioritizing future corridors, inclusion of corridor preservation measures in local and regional plans, and the tools and strategies available to TxDOT and local jurisdictions to preserve ROW for future transportation corridors. It also addresses the importance of educating the public, local jurisdictions, MPOs, and community leaders on the importance and benefits of corridor preservation in Texas. The guidelines presented herein are predicated on existing state legislation, TxDOT and federal regulations, and local authorities. However, some of the recommended approaches may not currently be practiced.

### **Develop a Corridor Preservation Strategy**

Corridor preservation requires that property for ROW be identified early in the planning and project development process, and that methods are available to determine the conditions where protection of property is appropriate. While TxDOT has the ability to use several advanced acquisition methods, these methods are generally employed on a parcel-by-parcel basis and cannot be used to acquire property on a project-wide basis. TxDOT also has the ability to work with cities and counties to preserve future transportation corridors prior to environmental clearance. However, when preservation is accomplished without completion of environmental requirements, it must be understood that the availability of ROW preserved through the process cannot influence the environmental work or selection of a preferred alternative and alignment. In addition to the restrictions imposed by the environmental requirements, funding for corridor preservation is currently limited. The recommendations found herein were developed in light of the environmental requirements and funding limitations as well as the existing legal and institutional framework in Texas.

### **Establish a Multi-Jurisdictional Approach**

A successful corridor preservation program will require a multi-jurisdictional process. Although TxDOT has a number of tools to use in preserving future corridors, it is important to seek assistance from the MPO and local jurisdictions (cities and counties). The separation of powers and overlapping jurisdictions dictate that corridor preservation must be undertaken cooperatively between all levels of government and affected agencies. Even if a statewide statute and program on corridor preservation were adopted, coordination and partnerships with local jurisdictions would still be imperative due to their land use, subdivision, and permitting authorities.

Partnerships between TxDOT districts, cities, and counties can serve as the foundation of the corridor preservation program. A multi-jurisdictional process that uses the full range of state and local government powers and tools will be the most effective approach to preserving ROW. Under current regulations, no single agency alone can undertake corridor preservation. It must be carried out cooperatively as part of local and regional transportation planning efforts and coordinated application of tools and authorities available among all affected jurisdictions and agencies. The methods and tools used can be tailored to the location and conditions of each individual corridor preservation project.

The multi-jurisdictional corridor preservation approach should be viewed as an ongoing process that is incorporated into state, local, and regional plans and policies. It can be integrated into the TxDOT project development process and be addressed continually as part of the local subdivision and

development processes. To facilitate corridor preservation, adjustments can be made in TxDOT's project development process to allow some NEPA environmental work to begin in the planning stage, prior to project development.

In order to be successful, corridor preservation must be facilitated by agency champions and intergovernmental agreements. Because of the statewide interests, TxDOT should take the lead in establishing the program and process for working with local governments. Tools and techniques available to the local governments for corridor preservation can be discussed and outlined, and a process to facilitate a comprehensive and coordinated corridor preservation effort can be developed. An approach should be established where corridor preservation strategies are tailored to specific projects and regulatory authorities from among all affected agencies and jurisdictions are combined to achieve state and area objectives.

### **Identify and Prioritize Corridors for CP**

In order for corridor preservation to become part of the normal planning process, it is necessary to adopt a method to identify and prioritize corridors for protection.

#### *Corridor Identification*

Corridor preservation requires early identification of a project need, facility type, and general location. Within the MPO planning areas the need, location, and type of new facilities can be identified through the development of the Metropolitan Transportation Plan (MTP). During development of the MTP the need for the project and feasible alternatives will be identified, and sufficient analysis will be performed to determine a list of preferred alternatives. This analysis may not be sufficient to determine the exact facility type or size or whether a new highway will include, for example, HOV lanes or managed lanes, or whether it will be a tolled facility. The MTP process will also not establish a precise alignment, only a general location/alignment. However, it should narrow the alternatives to those that will satisfy the need and meet the area goals and objectives.

Outside of MPO planning areas identification of corridors can be a part of the development of the statewide long-range plan. TxDOT districts can work with counties, cities, and TxDOT divisions to identify corridors for preservation. For most areas, officials will rely upon available data (such as historic and current traffic data), current growth and development trends, and any identified state plans (such as the Texas Trunk System and TransTexas Corridor plans). As in metropolitan areas, the identification of corridors for protection should begin with the identification of need, feasible alternatives, and general location. Analyses conducted in the long-range plan development should be used to narrow the alternatives to generate the list of preferred alternatives.

#### *Corridor Prioritization*

Due to limited resources, corridors identified for preservation during planning will need to be prioritized. Inside MPO planning areas, this prioritization can be a part of the MTP development. The analyses conducted to identify corridors should contain sufficient information that, when coupled with local goals and objectives, enables decision-makers to prioritize corridors for preservation. Criteria used to develop a priority list should include such things as importance of the project to regional mobility, threat of development, capacity and safety issues, support of the local public agencies, and significance of the project in meeting area or statewide transportation goals, but the specific criteria should be cooperatively developed by the agencies involved in the process.

Once corridors have been identified and prioritized within each TxDOT district, each corridor should be evaluated to identify appropriate methods for preserving the future ROW. When applicable, agreements between TxDOT and local officials to preserve the corridor(s) should be implemented. Such agreements can outline the strategies that will be cooperatively used and list agency responsibilities.

After corridors for preservation have been identified, it is imperative that they be included in the MTP, the statewide long-range plan, and local area transportation plans (including county plans where applicable).

#### *Map Identified Corridors for Protection*

It is suggested that TxDOT prepare maps that designate the corridors identified for protection. Separate maps could be developed for each TxDOT district, and/or developed to reflect the anticipated time frame (5-year, 10-year, and 20-year preservation) for each corridor. Mapping corridors identified for preservation can only serve as an information and communication tool between TxDOT and the local governments involved in the process. It must be made clear, however, that they are not maps of reservation, but only to coordinate between land use and development activity and future transportation needs. It is strongly recommended that any future new alignment placed on the map must be a part of the state, regional, and local transportation plans and have been through early environmental review and public involvement processes.

#### **Begin Environmental Work Earlier**

TxDOT uses a traditional project development process that is similar to or the same as most other state DOTs. Since NEPA regulations do not allow state or federal funds for ROW to be expended on a project-wide basis before environmental clearance, ROW actions are concentrated near later stages of the process. The process precludes the ability for TxDOT to acquire land and/or property rights in a corridor early in planning stages, when it is likely to be far less expensive. In the time it takes to obtain environmental clearance, often 3 to 5 years or more, land values can appreciate significantly and development can occur which can increase project costs and change or alter the alignment (14).

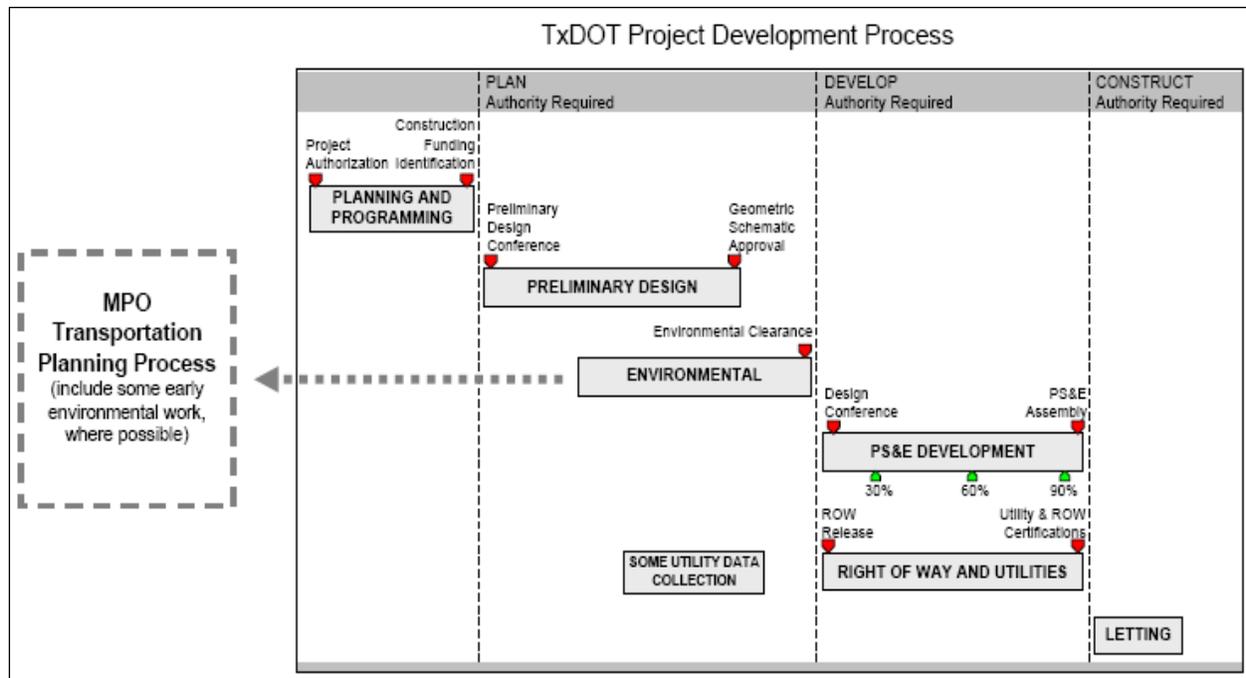
In order for corridor preservation to occur without risking future federal funding, changes to the project development process may be necessary. To be successful, corridor preservation along future alignments may be required many years in advance of project design and completion of the environmental impact statement. To make corridor preservation efforts work within the existing environmental requirements, two approaches are available for consideration: incorporating environmental review during the long-range planning process and using a staged or tiered environmental process.

#### *Early Planning Level Environmental Review*

The federal government recognized the conflict between corridor preservation and environmental requirements, and included provisions in the SAFTEA-LU legislation of 2005 that require some environmental work to begin in long-range transportation planning. This includes environmental 'consultation' and 'mitigation' provisions that MPOs must adhere to for MPO and statewide plans. SAFTEA-LU also includes a provision on 'linking planning and NEPA' by allowing results of transportation studies (e.g., corridor or sub area) to be used for NEPA requirements such as purpose and need, preliminary screening of alternatives, and preliminary identification of environmental impacts and mitigation. Additionally, the regulations provide for early input from resource agencies and allow planning products to be used in meeting NEPA requirements.

At the time this guidebook was developed, TxDOT's Environmental Affairs Division was working with the MPOs to establish the guidelines and framework for meeting the requirements to link environmental work with planning as established under SAFTEA-LU.

Figure 26 shows the long-range transportation planning process relative to TxDOT's project development process and illustrates how some environmental work can begin earlier in the planning process. In light of the new SAFTEA-LU provisions, TxDOT can work with MPOs and begin some preliminary environmental work in the MPO planning process. The NEPA consultation and mitigation provisions will help confront and resolve potential issues early in the planning process and assist in achieving corridor preservation objectives.

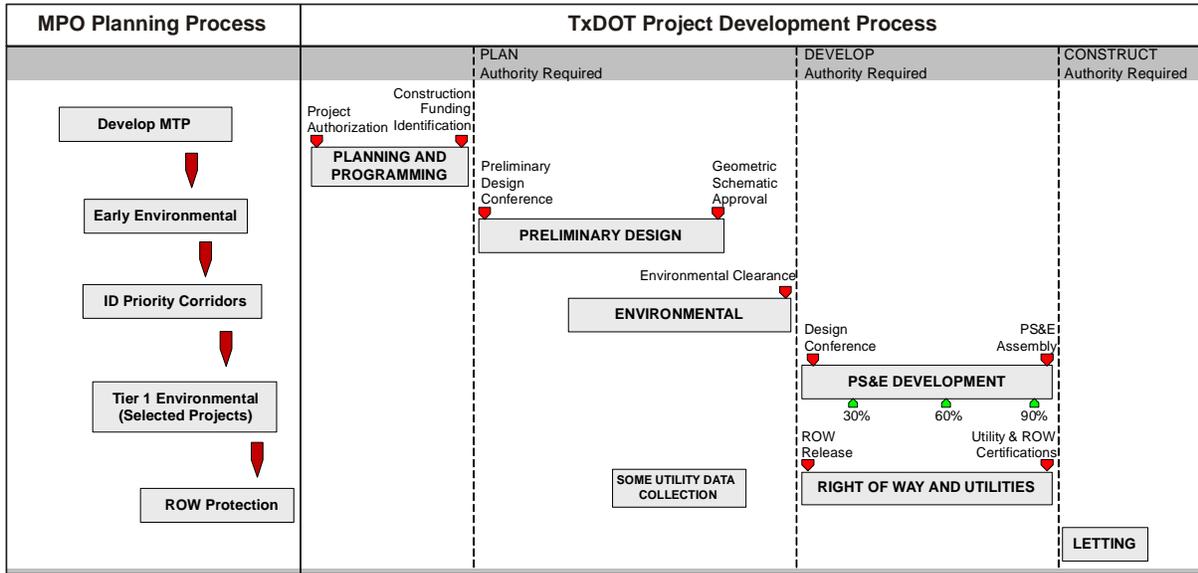


**Figure 26. Movement of Some Environmental Work to Planning Stage.**

*Staged or Tiered Environmental Process*

The use of a tiered environmental process can open opportunity to acquire right-of-way in advance of later project development. This process allows a first tier environmental impact statement that focuses on broad issues such as general location, mode choice, area air quality, and land use implications of major alternatives. The first tier lets an agency focus on a wide range of environmental issues that relate to early planning decisions such as what type of project is preferred, the general location of the project, and major design features. Based on the results of first tier environmental analyses, FHWA may allow advance acquisition of ROW on a project. However, it must be remembered that the advanced purchase of property for a future corridor can in no way influence the final environmental analysis for the transportation facility (15).

Figure 27 illustrates how these two early environmental options can be considered in TxDOT's project development process.



**Figure 27. Early Environmental Option in the Project Development Process.**

### CP Funding Source Needed

A major barrier to corridor preservation is the lack of funds. To remedy this, numerous states have set up dedicated funding for the purpose of corridor preservation. TxDOT may want to work with the legislature to identify and establish a funding source that can be used in early acquisition of ROW for projects identified in the corridor plan. Such a fund could be revolving so that when final project clearance is received, funds received for early acquisition are repaid with project ROW funds.

### Tools and Methods for ROW Acquisition and Preservation

The primary tools and methods available for use by TxDOT and local jurisdictions for property acquisition or preservation are shown in Table 4. The methods can generally be categorized into two different approaches for CP: fee-simple methods and less than fee-simple methods. Under fee-simple methods, the property is purchased outright whereas with less than fee-simple approaches the property is not purchased, but rather certain rights to the property are purchased to preserve it for a future corridor.

**Table 5. Tools and Methods for ROW Acquisition and Preservation.**

Method	TxDOT Authority	Local Authority	Approach	
			Outright Purchase / Possession	Certain Rights to Property Obtained
Fee Simple/Negotiated Purchase	✓	✓	✓	
Condemnation	✓	✓	✓	
Early/Advanced Acquisition				
Hardship Purchases	✓	✓	✓	
Protective Purchases	✓	✓	✓	
Options to Purchase	✓	✓	either	either
Donations	✓	✓	✓	✓
Dedication Through Platting		✓	✓	
Reservation Through Platting		✓		✓
Purchase of Development Rights	✓	✓		✓
Right of First Refusal		✓		✓
Development Agreements		✓	either	either

*Fee Simple/Negotiated Purchase and Condemnation*

By far the most common method that TxDOT uses to acquire ROW for projects is through fee simple, negotiated purchases. Using fee simple to acquire property for existing or future corridors, TxDOT gains full title to the land and has complete control over its use. The use of fee simple for CP, relative to other methods, has fewer complications but requires the greatest amount of capital outlay. In Texas, the property conveyance is assumed to be fee simple unless specified otherwise in the instrument of conveyance.

In acquiring ROW, if a property owner accepts TxDOT’s price offer, or if TxDOT accepts the property owner’s counter-offer, a negotiated agreement has been reached for purchase of the land. If an agreed-upon purchase price cannot be reached, condemnation proceedings are begun to acquire the needed ROW. In condemnation hearings, the legal proceedings take place in the county where the property is located. The presiding court appoints three special commissioners who have knowledge of real estate and property values in the county, and a hearing will be held to determine the value of the property to be acquired. The commissioners will determine the value of the property and file their decision with the court. The basic issue being decided through the use of condemnation and eminent domain is the value of the property for ‘just’ compensation.

Using early schematics, TxDOT could identify parcels within the project or corridor that will likely be total takes, low risk partial takes, and identify critical parcels for advanced acquisition.

*Advanced Acquisition Methods*

Advanced or ‘early’ acquisition can be used as a means to achieve some benefits of CP in the absence of a formal state program. Early acquisition is the acquisition of property by state and local governments in advance of the project’s final environmental document. TxDOT’s ROW manual includes provisions for four methods of advanced acquisition, which include:

- options to purchase;
- hardship acquisitions;
- protective purchases; and
- donation.

TxDOT can use advanced acquisition of certain parcels prior to completion of a project's final Environmental Impact Statement (EIS) if a NEPA categorical exclusion (CE) has been obtained. If a project already has an approved environmental document, a ruling of categorical exclusion is not required. Such buys can be done after a preferred alignment has been selected and after completion of a public hearing. Advanced acquisitions can not influence the final environmental decision regarding build/no-build or project alignment (16).

The use of these techniques is limited because they can only be used on a parcel-by-parcel basis and not applied on a project-wide or corridor-wide scale. Land acquisition for ROW on a project-wide basis can not begin until the environmental process has been completed. Through advanced purchase TxDOT can acquire ROW for a future transportation project provided that:

- It is a necessary project.
- All appropriate environmental analysis has been conducted.
- No relocations, taking of public parks, recreational areas, wildlife refuges, scientific areas or historic sites are involved.

Currently the use of advanced acquisition methods, particularly options to purchase, is limited to large urban districts. Protective and hardship buys require extensive work-ups and very experienced ROW staff. They can also be time consuming due to the approvals needed for their use. Smaller rural districts may not have the resources and staff experience to pursue advanced acquisition methods. TxDOT can increase the use of advanced acquisition methods by facilitating the approval process through a program where experienced ROW professionals in urban districts who have used these methods assist ROW staff in other districts that have not used these methods.

Options to Purchase. An option to purchase is a contract to buy the right to purchase property. To do this, TxDOT pays the property owner a fee, and the owner takes the property off of the market for a specified term. The owner retains possession and use of the property, but TxDOT may exercise its right to purchase within the specified time limit (17).

Options provide TxDOT with the ability to purchase property as specified in the terms of an option contract before a final decision has been made as to whether the project will be located on that property. TxDOT can enter into an option to purchase or option to control development rights if:

- The commission approves the use of options to purchase on the specific highway project for which the property might be used;
- The property may possibly be used for a transportation facility.
- The size and location of the property is reasonably related to the future design and alignment.
- The terms of the contract are likely to be economically favorable to the department.

Purchase options are a ‘less than fee-simple’ method that provides districts the ability to secure the right to acquire certain properties before development occurs. Under TxDOT’s provisions, when options are used it requires the owner to maintain the land in its current state of development. An advantage of options is that negotiations can be settled up front. A drawback to them is the additional cost of the option on top of the actual cost of the property.

Under TxDOT’s regulations, an option contract may not exceed a primary period of 5 years, but may be extended with each extension not to exceed 5 years. Prior to entering into a contract option, TxDOT must conduct a site assessment to determine if the property contains significant contamination of hazardous materials or other environmental concerns. The purchase of an option does not require a CE determination, but the exercise of the option (actual purchase) is subject to the same requirements as an early/advanced purchase.

A variation to an option to purchase that could also be used would be a right of first refusal option contract. This option would give TxDOT, or the local jurisdiction, the first chance to purchase the property if and when the landowner decides to sell.

Hardship, Protective, and Donated Acquisitions. A hardship acquisition is done at the owner’s written request to alleviate the hardship of the inability to sell his property. It allows TxDOT to relieve a distressed property owner when a property can not be sold on the private market due to public knowledge of a pending highway project. Owner distress can include the need to sell because of health, safety, financial hardship, or other personal circumstances. Hardship purchases are typically used for residential property and used to a far lesser extent for commercial property. Although a hardship case must have property owner relief as its primary purpose, it can still be used as part of a CP strategy. Hardship buys can be helpful, but they cannot be used to acquire a significant number of parcels on a project-wide basis.

A protective acquisition can be used for advanced purchase of a limited number of parcels on a TxDOT project to prevent imminent development or increased cost. This method has been used by numerous TxDOT districts and a handful of other state DOTs to purchase critical parcels. What constitutes ‘imminent development’ is not specifically defined in federal regulations, and some states have used protective buys for a wide range of development situations. The ‘imminent development’ and ‘limited number of parcel’ federal requirements confine its use to a parcel-by-parcel basis and not a project-wide basis.

Acquisition of ROW by voluntary donation is an advanced method, though it seldom occurs. Donation of land to TxDOT for ROW requires commission approval and must be handled in accordance with provisions in TxDOT’s *Right of Way Acquisition Manual*. When donations do occur, it is often for economic development reasons such as an exit ramp, an overpass, or a median opening. TxDOT and local jurisdictions can encourage property owners to donate ROW for future transportation corridors. In working with property owners regarding donations, coercive approaches cannot be used, and owners must be made aware of their right to have the property appraised and to be paid full market value. A voluntary donation of land would allow TxDOT to use the land’s fair market value as a credit toward the federal match required for projects involving federal funds.

Another approach that may facilitate donations for districts and benefit local jurisdictions would be for donations for TxDOT projects to be made to local jurisdictions. If there is an advance funding agreement in place between TxDOT and a local jurisdiction, such an approach would not require commission approval, and allow a city/county to apply the donation toward their local match for the project. However, if there is no such agreement, a donation must be approved by the commission the same as other donations.

### *Other Early Acquisition Approaches*

The downside to the traditional acquisition process is that by the time it gets to ROW acquisition, some property owners are disgruntled or even hostile. When a schematic comes out, it can encumber property and have a negative effect on value and marketability.

Districts can identify critical parcels early in the project development process and identify critical parcels for acquisition. Where possible, ROW and other project development work could be performed concurrently, rather than in traditional DOT sequence. The ROW function could be integrated earlier into the project development process and elevate its importance.

Early Acquisition by Locals. One possible approach for property to be acquired early would be for local jurisdictions to acquire or in some way preserve needed ROW. For example, in cases where land that is located within a known future corridor is on the market, local jurisdictions could purchase such property with an agreement that TxDOT would (1) either purchase it from them once they have received environmental clearance or (2) allow them to apply it toward their 10 percent local match for the project. TxDOT may also enter into an agreement with other governmental entities to reimburse those agencies for ROW purchased or obtained by other means prior to project development/construction (Texas Administrative Code, 43 Part 1 Chapter 21 (A) 21.12). *Any indirect method of early acquisition of property for a state highway by using local governments would need to be carefully reviewed and structured on a case-by-case basis to ensure that they do not violate environmental regulations or exceed the state's authority.*

Another method currently being used by TxDOT is a 'flexible takings' program where it buys commercial properties and immediately leases them back or demolishes them in order to avoid having to manage them.

ROW Dedications and Reservations Through Platting. Right-of-way dedications and reservations through platting are defined and explained in the previous section on CM. While they are good tools in CM for protecting and acquiring ROW along existing facilities, they are not as viable for use in CP for new facilities – particularly those without schematics and/or known alignments. New TxDOT facilities can and should be included on municipal and county transportation plans, but takes a very large development to generate enough impact to justify a full dedication of dedication of ROW, particularly those in excess of 200 feet or more. A common scenario is that the developer waits for TxDOT to purchase the ROW from them before proceeding with any platting activity that could require conveyance of property for ROW dedication.

Acquisition of Development Rights/Easements. Acquisition of development rights is used in wildlife resource management, scenic preservation, and as a means to control growth and preserve agricultural and natural areas. When used for these purposes it may be termed as a conservation easement or a development easement. This method could possibly serve as another tool in CP, but there are significant acquisition difficulties peculiar to some of these uses that make them difficult to adapt to highway uses. Not all conservation easements will create these difficulties, but caution should be used in that the particular conservation tool used must be carefully selected to make sure that it is easily adaptable to transportation purposes.

### **Overview of CP Process**

It is feasible for TxDOT to implement a corridor preservation program within the existing legal and regulatory framework. A multi-jurisdictional approach that develops a working partnership with local governments and allows for early environmental review will provide the greatest opportunity to preserve

future transportation corridors. Figure 28 illustrates a general corridor preservation process that would employ the suggestions of this guidebook.

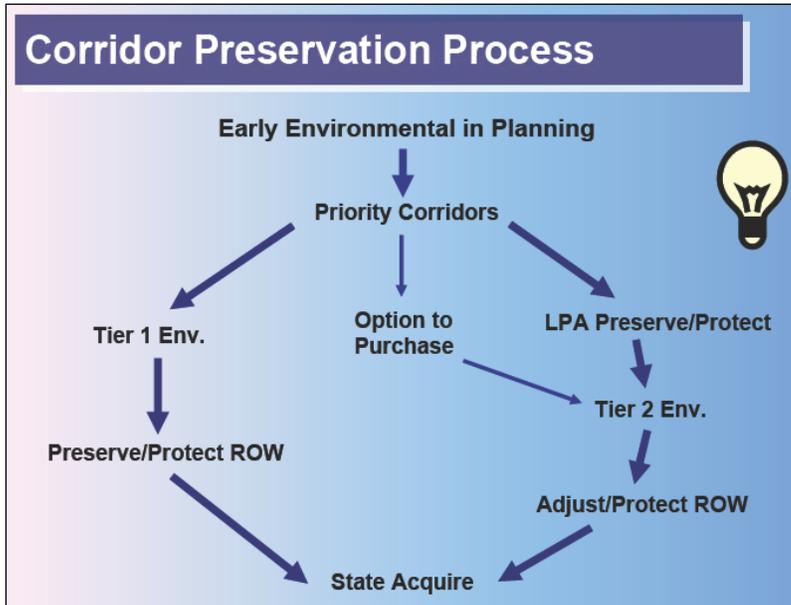


Figure 28. Overview of Possible CP Approach.

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