

1. Report No. FHWA/TX-08/0-5606-1		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle CREATING PARTNERSHIPS WITH LOCAL COMMUNITIES TO MANAGE AND PRESERVE CORRIDORS: TECHNICAL REPORT				5. Report Date September 2007 Published: July 2008	
				6. Performing Organization Code	
7. Author(s) Edwin N. Hard, Patricia L. Ellis, Brian S. Bochner, and Deborah Spillane				8. Performing Organization Report No. Report 0-5606-1	
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. Project No. 0-5606	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Implementation Office P. O. Box 5080 Austin, Texas 78763-5080				13. Type of Report and Period Covered Technical Report: September 2006 – August 2007	
				14. Sponsoring Agency Code	
15. Supplementary Notes Project performed in cooperation with the Texas Department of Transportation and the Federal Highway Administration. Project Title: Creating Partnerships with Local Communities to Manage and Preserve Corridors URL: http://tti.tamu.edu/documents/0-5606-1.pdf					
16. Abstract There is a serious need in Texas for better integration of land use and transportation planning, and better coordination of land use and transportation decision making. Coordinated local-state partnerships in corridor management and preservation would go a long way toward addressing this disconnect and lack of integration. In light of the state's ever-increasing growth and land values, it is critical for TxDOT, like many other state DOTs, to work with communities to ensure that existing and future on-system corridors are managed and/or preserved as part of long-range comprehensive planning efforts and as development occurs. The objective of the research is to develop methods and guidelines where corridor management and preservation can be accomplished through coordinated application of local and TxDOT regulations. The research will assess the role of locally adopted transportation plans, regional transportation authorities, and MPOs in corridor management and preservation. It will detail regulatory components, zoning overlay districts, current practices, and case studies in Texas and throughout the United States for these activities. The research will review methods and tools for acquiring and preserving right-of-way in the context of expediting the environmental clearance process and review how corridors are prioritized, designated, and adopted for management or preservation.					
17. Key Words Corridor Management, Corridor Preservation, Overlay District, Right-of-Way Preservation, Advance Acquisition, NEPA, Environmental Clearance, Tiering, Early Acquisition			18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service Springfield, Virginia 22161 http://www.ntis.gov		
19. Security Classif.(of this report) Unclassified		20. Security Classif.(of this page) Unclassified		21. No. of Pages 156	22. Price

CREATING PARTNERSHIPS WITH LOCAL COMMUNITIES TO MANAGE AND PRESERVE CORRIDORS: TECHNICAL REPORT

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Report 0-5606-1
Project 0-5606

Project Title: Creating Partnerships with Local Communities to Manage and Preserve Corridors

Performed in cooperation with the
Texas Department of Transportation
and the
Federal Highway Administration

July 2008

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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 Federal Highway Administration (FHWA) or the Texas Department of Transportation (TxDOT). This report does not constitute a standard, specification, or regulation. The research supervisor in charge of this project was Edwin N. Hard.

ACKNOWLEDGMENTS

This project was conducted in cooperation with TxDOT and FHWA. The research reported herein was performed by the Texas Transportation Institute (TTI). Mr. Robert Appleton, P.E., district transportation planning engineer of TxDOT's Bryan District, served as the research project director (PD) and Mr. Phillip Russell, director of the Texas Turnpike Authority Division, served as the program coordinator (PC).

The authors would like to thank the members of the Project Monitoring Committee for their advisement and guidance:

- Mr. Jack Heiss, Texas Turnpike Authority, Texas Department of Transportation;
- Mr. John Ewald, Right-of-Way Division, Texas Department of Transportation;
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The authors would like to provide special thanks to Duncan Stewart and Loretta Brown of TxDOT's Research and Technology Implementation (RTI) Office for their assistance in this project and to members of TxDOT's Environmental Affairs Division for their detailed responses to the researcher's questions relating to Environmental Clearance in TxDOT's project development process. The authors also thank the following TxDOT right-of-way (ROW) attorneys, administrators, and agents for their time and insights:

- Mr. John Zimmerman, ROW Division - Austin;
- Mr. Randy Ward, ROW Division – Austin;
- Mr. Travis Henderson, Dallas District;
- Mr. David Bryant, Houston District;
- Mr. Sam Willey, Beaumont District;
- Mr. Bob Clarke, Yoakum District;
- Mr. Sam Wilson, Bryan District; and
- Ms. Sharon Rejcek, Waco District.

The authors would thank Mr. John Overman of TTI for his input and advice in this research project.

Finally, the research team thanks the individuals from over 50 municipalities in Texas who took the time to complete surveys related to local practice and perspective in corridor management and preservation included in this research report.

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1.0 INTRODUCTION

1.1 PROJECT OBJECTIVE

The objective of this research project was to develop methods and guidelines for coordinated partnerships where corridor management and preservation (CM&P) practices can be implemented on TxDOT facilities. The research details how corridor management in Texas can be accomplished through coordinated application of both local and TxDOT regulations and policies. It also documents benefits resulting from this activity.

1.2 BACKGROUND AND SIGNIFICANCE OF WORK

As in most states, transportation and land use planning and implementation in Texas are not highly interactive. As a result, future right-of-way (ROW) needed for new alignments and widening of existing ones, especially in urban areas, is hard to protect, and existing ROW is hard to keep from deteriorating due to local development decisions and resulting access requirements. This disconnect ends up costing TxDOT a lot of unnecessary money for additional facilities to supplement lost capacity or to acquire ROW or access rights that were not properly protected in the first place.

Coordinated local-state partnerships in corridor management and preservation would go a long way toward addressing the difficulties caused by this disconnect and lack of integration. In light of the state's ever-increasing growth and land values, it is critical for TxDOT, like many other state DOTs, to work with communities to ensure that existing and future on-system corridors are managed and/or preserved as part of long-range comprehensive planning efforts and as development occurs.

The Transportation Research Board (TRB) defines corridor as 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. Corridor management and preservation generally refer to measures or practices to preserve or protect ROW in combination with managing how development occurs along a transportation corridor.

The terms corridor management (CM) and corridor preservation (CP) are sometimes 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. CM and CP as defined for this research report are as follows:

- **Corridor Management** refers to the management of land development and transportation facilities 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 ROW for a planned transportation facility.’

It is important to clarify that both corridor management and corridor preservation include ROW acquisition and protection. To reiterate, ROW acquisition or preservation for *existing* facilities falls under the definition of corridor management.

1.2.1 Overview of Corridor Management

Corridor management is 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 defines it as ‘the application of multiple strategies to achieve specific land development and transportation objectives along segments of a corridor’ (1).

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 and 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 and development that remain viable and functional long into the future. In other words, the objective is 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.

1.2.2 Overview of Corridor Preservation

Corridor preservation refers to the practice of acquiring, preserving, or protecting ROW needed for existing and planned transportation facilities. 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 U.S., local governments and MPOs play a vital role in corridor preservation activities. In order for a corridor to be considered for preservation, it needs to be adopted into a local, regional, or a statewide plan, depending on the facility.

As a result of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), many states passed legislation to develop formal corridor preservation programs that authorized their

DOTs to engage in corridor preservation activities. However, few states have established a permanent funding mechanism to acquire or preserve ROW. The 1991 act required states and MPOs to consider preservation of ROW for future transportation projects, including the identification of future corridors as part of the statewide planning process.

Corridor Preservation and TxDOT. TxDOT, like many state DOTs, does not have enabling legislation that specifically provides a formal corridor preservation program. However, TxDOT is involved with MPOs in transportation planning and has tools in place to facilitate ROW acquisition and preservation. Many districts work with local jurisdictions and MPOs to assist in corridor preservation, where possible. TxDOT sometimes enters into advance funding agreements with local jurisdictions for them to do some of the advance planning work and early environmental work that may be needed to determine specific alignments.

CP in Texas at the Local Level. Advance preservation of ROW can be done more easily by local jurisdictions, primarily because of the extra tools they have available. Once a transportation plan has been adopted, a municipality can develop and adopt a thoroughfare map that shows specific alignments and ROW widths of planned major roadways (usually freeways/tollways, arterials, and collectors). As land develops, the continuity and general alignments are maintained, but alignments of specific segments may be adjusted to meet engineering or other development requirements as long as the jurisdiction's design criteria are still met. Normally, development approvals are contingent on the designated or agreed ROW being kept available. Dallas and Houston are two cities that use this approach to protect ROW. Much of the existing right-of-way for Grand Parkway (SH 99) in the Houston area has been pieced together with both dedications and purchases in this manner by an early association and later by the counties.

Local agencies may use bond funds or other sources for advance purchase of ROW if needed. They may use such methods if development is eminent and the owner is not willing or required to dedicate ROW. Where growth is extensive, dedication of ROW is more likely to happen than in areas with little or no development activity.

Cooperation from Local Jurisdictions. In order for state DOTs to be successful in corridor preservation, cooperation and coordination with cities and counties is imperative. Coordination and cooperation is needed in implementing local and regional thoroughfare plans, and in the development process. A comprehensive multi-jurisdictional approach is needed whereby regulatory authority is combined between all levels of government.

Corridor Identification. Corridor preservation requires early identification of a project's alignment, which may be difficult to do without jeopardizing the validity of subsequent alternatives analysis and environmental work. Corridors are identified based on criteria established by state DOTs and/or local governments.

1.2.3 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.



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

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.

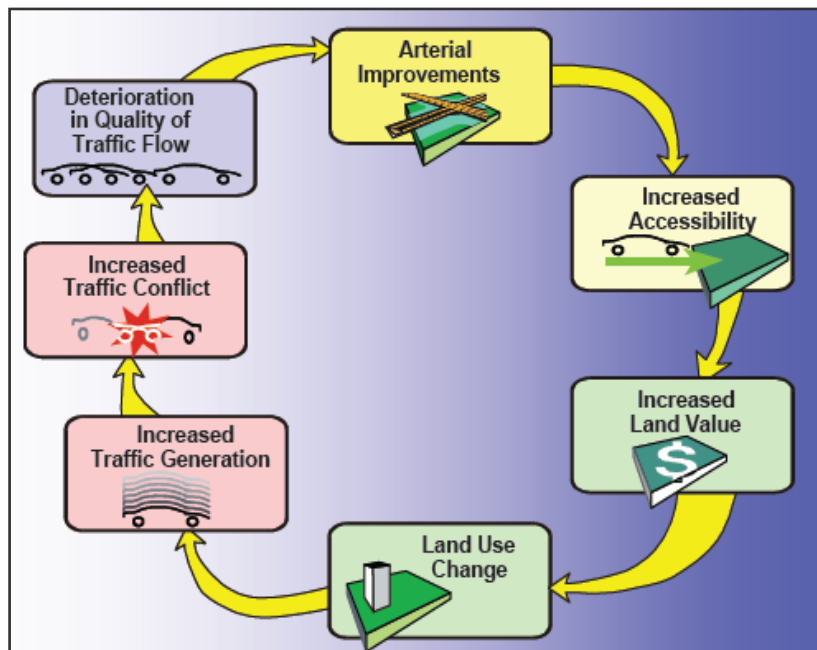
CM&P benefit many stakeholders, including TxDOT, local jurisdictions, private development, and the community or region in general. They serve to protect roadway capacity, extend the life of existing facilities, and can reduce or delay the need for costly widenings. From an economic development standpoint, 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 increases the local tax base. CM&P are ‘smart growth’ activities, which facilitate mutually sustainable transportation facilities and land development.

1.2.4 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 that 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, 2nd 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,
- decline in property values and tax base,
- loss in aesthetic quality,
- gradual economic disinvestment along corridors,
- 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).

1.3 ISSUES AND CHALLENGES IN CORRIDOR PRESERVATION

State DOTs throughout the U.S. face the same or similar obstacles in managing and preserving transportation corridors. Legal, environmental, and monetary constraints are the primary limitations for state DOTs in implementing corridor preservation. The passage of ISTEA required states to consider corridors for preservation in developing their transportation plans. Despite this legislation, preserving future transportation corridors has posed significant problems for state DOTs. The major barriers that have hindered preservation efforts, despite individual state efforts, include:

- inadequate authority and property rights issues,
- funding limitations,
- the development process, and
- the environmental clearance process.

1.3.1 Inadequate Authority and Property Rights Issues

Most state DOTs, including TxDOT, have limited options available for corridor preservation, particularly if legislation authorizing it does not exist. Some states have adopted an official map of reservation statutes, but these are difficult to implement since states do not have the authority to regulate land use and development. Local governments are empowered to regulate land use and development, but often take a cautious and conservative approach in using eminent domain and their police powers for fear of legal challenges. The protection of private property rights under the Fifth Amendment of the U.S. Constitution plays the most prominent role in corridor preservation policy, regulation, and limitations.

1.3.2 Funding Limitations

The lack of funding and a dedicated funding source for corridor management and preservation is one of the greatest limitations for states and local jurisdictions. Most state DOTs, like TxDOT, do not have enough funds to construct anywhere near their 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.

1.3.3 NEPA and the Environmental Compliance Process

For state DOT projects involving federal funds, the underlying difficulty in CP stems from the federal National Environmental Policy Act of 1969 (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. NEPA requires that an environmental impact statement (EIS) be prepared for projects that significantly affect the environment, and it requires that a record of decision (ROD) or equivalent be obtained before federal funds can be placed under agreement to purchase ROW (3). This requirement is a major obstacle in corridor preservation since obtaining environmental clearance can take years, when the need for preserving and protecting a corridor from development could be eminent. Because of this requirement, environmental work is not started until later stages in TxDOT's project development process. This is termed the 'traditional sequential' process, which is commonly used by most state DOTs.

NEPA is a procedural statute that requires agencies to: (1) consider the environmental impacts of their proposed actions; and (2) inform the public that environmental concerns were considered in the planning and development of the project. NEPA serves as a mechanism for public participation in the transportation planning process. Some transportation projects may have little or no environmental impact, but NEPA still requires agencies to demonstrate that the level of impacts was considered. The following three classes of actions are used to determine how compliance with NEPA is documented:

- EIS – when it is *known* that the project will have an environmental impact;
- Environmental Assessment (EA) – when the significance of the environmental impacts is *uncertain* and needs to be determined; and
- Categorical Exclusion (CE) – for projects that do not have a significant effect on the environment and will not need an EIS prepared.

In order for state or federal funds to be used to purchase property, all environmental studies must be completed and either a CE, or a Finding of No Significant Impact (FONSI), or a ROD on the Final Environmental Impact Statement (FEIS) must be issued.

Typically, environmental studies involve an assessment of the transportation need, examination of alternatives to fulfill that need, and documentation of the social, economic, and environmental impacts of the alternative and final selected improvements. Generally, during the alternatives analysis phase, a broad assessment of the social, economic, and environmental impacts is conducted. Initially, however, this assessment was not specific enough to achieve final environmental approval because the precise design cross-section and alignment of the preferred alternative is not known. Without a FONSI or a final ROD, purchasing ROW for a future corridor cannot be accomplished with the use of state or federal dollars.

1.4 FEDERAL TRANSPORTATION POLICY AND CP

At the federal level, a significant initiative for corridor preservation was provided in ISTEA. The act required states and Metropolitan Planning Organizations (MPOs) to consider preservation of ROW for future transportation projects, including the identification of future

corridors as part of the statewide planning process. Despite this legislation, preserving future transportation corridors has posed significant challenges for state DOTs. The major barriers that have hindered preservation, despite individual state efforts, include a lack of a dedicated funding source and the environmental requirements of NEPA.

In an effort to help facilitate transportation planning and corridor preservation, in the early 1990s a new federal provision was enacted that gave state DOTs the ability to ‘streamline’ NEPA environmental clearance using a ‘tiered’ environmental process. The process allows a first tier EIS that focuses on broad issues such as general location, mode choice, area air quality, and land use implications of major alternatives. The second tier of environmental analysis occurs later during project development when the details of the alternative in terms of cross-section and alignment are known. According to FHWA 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 (4).

The use of a tiered environmental process can open opportunity to acquire ROW in advance of later project development. However, the advance purchase of property for a future corridor can in no way be considered in the final environmental analysis for the transportation facility. The tiering process studies the project as a locational issue rather than a detailed analysis of a corridor or alignment, but the process still requires the completion of an EA or an EIS. TxDOT and many other state DOTs have used the tiered environmental approach, and the results have been mixed. TxDOT is currently using a tiered environmental approach on the I-69 corridor development and has found that it has not necessarily expedited ROW acquisition for the project.

More recently, the enactment of the Safe, Accountable, Flexible, Efficient Transportation Efficiency Act: A Legacy for Users (SAFETEA-LU) Act of 2005 (and subsequent statewide and MPO rules) included new provisions for environmental ‘consultation’ and ‘mitigation’ that MPOs must adhere to on MPO and statewide plans. It also included a provision on ‘linking planning and NEPA’ by allowing results of transportation studies (e.g., corridor or subarea) to be used for NEPA requirements such as purpose and need, preliminary screening of alternatives, and preliminary identification of environmental impacts and mitigation.

The approach is referred to as Planning and Environmental Linkages (PEL). SAFETEA-LU Section 6001: Environmental Considerations in Planning requires certain elements and activities to be included in the development of long-range transportation plans, including consultations with resource agencies, such as those responsible for land-use management, natural resources, environmental protection, conservation and historic preservation, which shall involve, as appropriate, comparisons of resource maps and inventories. The new PEL requirements offer an opportunity to preserve corridors through cooperative agreements. Figure 3 provides a summary from the section of the Code of Federal Regulations (CFR) on linking the planning process and NEPA (5).

LINKING PLANNING AND NEPA
23 CFR § 450.212 & 318: Transportation Planning Studies and Project Development

Results or decisions in corridor or sub-area studies may be used in NEPA

- Purpose and need
- General travel corridor, mode, definition
- Preliminary screening of alternatives (& elimination of unreasonable alternatives)
- Basic description of the environmental setting
- Preliminary identification of environmental impacts and environmental mitigation

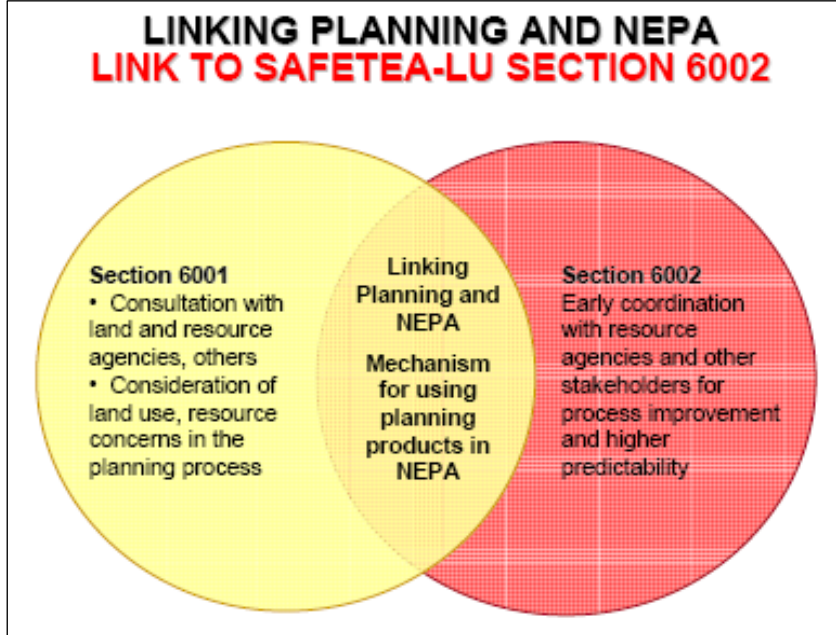
Studies may be incorporated directly or by reference, if:

- NEPA lead agencies agree that it will help in NEPA
- Systems-level, corridor, or sub-area planning studies are conducted with:
 - Involvement of appropriate agencies
 - Public review
 - Reasonable opportunity to comment on planning process or studies
 - Documentation is available for scoping
 - Review of the FHWA and the FTA, as appropriate
- Integration may be accomplished through tiering

Source: North Central Texas Council of Governments.

Figure 3. Summary of Provisions on Linking Planning and NEPA.

Section 6002 of SAFETEA-LU prescribes a new environmental review process for highway projects, public transportation capital projects, and multimodal projects. It is mandatory for EISs and optional for EAs. It specifies changes from current NEPA procedures, including new obligations for public and other agencies' involvement in the development of project purpose and need, and for project alternatives. It requires the development of a coordination plan and schedule that must be provided to all participating agencies and made available to the public. Figure 4 shows a general overview of the relationship of PEL and Sections 6001 and 6002 of SAFETEA-LU (5).



Source: North Central Texas Council of Governments.

Figure 4. Overview of SAFETEA-LU and PEL.

SAFETEA-LU also designated Texas as one of five states that were given delegation of federal authority for environmental review and clearance. This designation means that for delegated projects, FHWA will not be involved in review, coordination, negotiation, etc. Agencies would work directly with TxDOT's Environmental Affairs Division.

2.0 PLANS, PROGRAMS, AND COORDINATION IN CM&P

This chapter documents the roles and relationships of state, regional, and local transportation plans and programs (e.g., city, county, MPO) in corridor preservation and corridor management.

2.1 ADOPTED PLANS AND CORRIDOR PRESERVATION

Corridor preservation and management can be effective ways to preserve and protect planned transportation corridors so they will be available when needed, and once obtained, to protect the capacity and operational efficiency of the corridor's transportation facilities. In most cases, adopted plans pertain more to identifying and then preserving and protecting future transportation corridors. Three types of adopted plans are most frequently used to identify future transportation corridors. These include local comprehensive plans, local thoroughfare plans, and statewide or regional transportation plans.

2.1.1 Local Comprehensive Plans

Comprehensive plans are normally prepared by individual municipalities to guide the development of a city and to establish policies to enable implementation of the plan over time. Comprehensive plans usually include land use, transportation, utilities, and other public facilities. The transportation component usually:

- identifies roads and other types of fixed facilities by functional classification;
- describes the planned ROW width and often the number of lanes and generalized cross-section configuration of existing and future facilities; and
- shows general alignments of future facilities, which usually have not been developed under an engineering study to determine a precise alignment.

The comprehensive plan is almost always officially adopted by the city council or similar body. The comprehensive plan may or may not include a more detailed transportation plan element, which may include some or many of the following elements related to corridor preservation and management:

- early action (implementation) plan;
- modal elements (e.g., thoroughfare, transit, bicycle, pedestrian);
- access management;
- implementation priorities;
- thoroughfare alignments (sufficient to identify ROW); and
- financial strategy or plan for implementing transportation improvements.

2.1.2 Local Thoroughfare Plans

Thoroughfare plans are usually developed at the municipal or county levels (in Texas at the municipal level with the exception of a few counties). They usually include only existing and planned future roadways. Thoroughfare plans may consist of the same three components as do the transportation elements of comprehensive plans, namely:

- identification of roads by functional classification;
- designation of minimum ROW widths by functional class and often the number of lanes and generalized cross-section configuration; and
- illustration of generalized alignments, which rarely have been developed under an engineering study to determine a precise alignment.

A city thoroughfare plan is adopted by the city council. The county commission adopts a county thoroughfare plan. Like the transportation element of the comprehensive plan, the thoroughfare plan may have additional detailed components as listed above.

In addition to local thoroughfares, the local thoroughfare plan adopted at the municipal or county level also includes state facilities. Functional classes may vary somewhat since roadways on local plans are represented more in the context of a single urban area or community, while those on a regional or statewide plan may represent a far larger region or the entire state.

2.1.3 Statewide, Regional, or Urban Area Transportation Plans

Statewide, regional, or urbanized area transportation plans are usually prepared and overseen by either a state DOT (for statewide plans) or an MPO (for regional and urbanized area plans). Most of these plans are prepared under federal transportation planning regulations and policies (i.e., SAFETEA-LU, FHWA policies and guidelines) as well as applicable state DOT policies and guidance.

In general, the statewide transportation plans identify corridors but not alignments other than conceptual linkages. The statewide plan is usually oriented toward statewide or intercity transportation system components and normally does not include what might be considered urban transportation components other than state highways or other such facilities.

Regional and urbanized area plans are usually multimodal and usually include more specific definitions of future transportation corridors, including generalized alignments. However, the alignments do not undergo engineering study until project development starts. These plans may also include strategies for financing and implementing the plans through implementing transportation agencies (i.e., state DOT, counties, cities, transit agencies, toll road and other special agencies). Corridor preservation and access management strategies may be included, but they must be implemented by state, county, or municipal agencies.

Municipal or county sections of regional and urbanized area transportation plans are often adopted into the local thoroughfare plans for the purposes of implementation by or through those agencies.

2.2 ADOPTED PLANS AND CORRIDOR MANAGEMENT

Of the above plans, generally, only the regional/urbanized area plans and the thoroughfare plans are likely to contain corridor management components. The larger regional and urbanized area plans will sometimes contain corridor management strategies (e.g., access management, ITS, capacity or operational efficiency measures). They may also designate projects for the purpose of allocating funding. However, they rarely contain detail on what is to be done. That detail is developed as part of project implementation or as a specific plan element in the case of access management.

However, additional adopted plans or related tools also come into play related to access management. Municipal zoning ordinances and other development ordinances and codes are used to manage development and redevelopment. They can be used to regulate and manage access. They also provide the basis for coordination between transportation agencies and departments and the local agency development departments. This coordination will be discussed later in more detail.

2.3 PLANS AND PROGRAMS THAT AFFECT BOTH CM AND CP

There are additional types of adopted plans or programs that can affect corridor preservation and management, although less directly. These include:

- Transportation funding programs - These are typically local or regional transportation improvement programs (TIPs), state transportation improvement programs (STIPs), and capital improvement programs (CIPs). These programs provide funds for corridor preservation, project implementation, and corridor management. As such, while they do not directly determine what is to be attempted, they do affect the amount of resources available for corridor preservation and management.
- Adopted roadway design standards and policies - Relative to corridor protection, these standards and policies stipulate cross-sections and other design criteria that define ROW requirements. They may also include access management components. It is important to note that many agency design standards and policies are administratively adopted or approved. Some are not formally adopted at all but are used as general practice. Nevertheless, they do help to define ROW needed for future transportation facilities (or improvements to existing facilities).
- Corridor specific plans - These plans are usually used for new alignments where multiple alternatives exist and where an alignment has not yet been determined. Corridor specific plans may also be used to determine the desired level of improvement to an existing facility. These may be developed by state or local transportation agencies and are the result of early phases of project development. They usually are preceded by corridor feasibility and alternatives analysis (and often

environmental analysis) so the designated corridor can be adopted as the preferred alternative or alignment, sometimes subject to minor refinements in preliminary engineering. A corridor plan normally is sufficient to designate ROW preservation limits.

- Access management plans - An access management plan may be developed for one or more corridors with the expectation of using it to manage future access or retrofit existing access. The plan may be adopted and implemented through an overlay district (municipal level) for use as property develops or redevelops along that corridor.

The adopted plans described above accomplish four things:

- they identify existing facilities that are to be improved and new facilities to be built in the future for which ROW will be needed;
- they provide strategies to be used in corridor management to make best use of the facilities and their inherent capacity;
- they provide some tools (or the basis for applying those tools) needed to help obtain ROW and manage access and other operational developments along the ROW; and
- they serve as a mechanism to coordinate transportation and land use.

Table 1 shows a range of corridor preservation and management tools 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 and specify that the city adopt an official map of reservation to preserve ROW as well as budget funds to permit the city to purchase ROW or options in advance of need.

Table 2 shows that there is no one agency that by itself can fully accomplish corridor preservation and management. No single agency can successfully accomplish the entire job due to separation of powers and jurisdictions. Table 2 summarizes these roles by agency type. For example, a state DOT may develop a plan for a transportation corridor, but it lacks the jurisdiction to control where development can and cannot occur. The municipal agency can manage development and protect ROW from being built upon, but may not have the financial resources itself to be able to purchase ROW in advance of need in order to keep from losing the ROW to development.

Table 1. Relationship of CM&P Actions to Adopted Plans and Implementation Means.

Corridor Actions and Tools	Plans					Implementation Means			
	Comprehensive	Thoroughfare	Statewide or Regional	Design Standards or Policies	Corridor Specific Plans	Maps of Reservation	Access Management Regulations	Subdivision/ Platting Regulations	Zoning Ordinance
Corridor Management									
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			●	●			●	●
Retrofitted access	P	P	P	●	●		●	●	●
Traffic impact analyses	P	P	P		●		●	●	●
ITS/operations strategies	P	●	P		●				
Setback requirements	P	P	P		●				●
Site plan review	P	P	P	I		I	●	●	●
Access permits	P	P	P	●	●		●		
Corridor Preservation									
Map of reservation	P	P	P	●		●			
Dedication	P	P	P		I			●	●
Exaction	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	I		●	●
Option to purchase	P	P	P		I	I		●	●
Protective purchase	P	P	P		I	I		●	●
Hardship acquisition	P	P	P		I	I		●	●
Early acquisition	P	P	P		I	I		●	●
Property exchange	P	P	P		I	I		●	●

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

Sources of corridor actions: Williams, Kristine, *Corridor Management – A Synthesis of Highway Practice*, NCHRP Synthesis 289, Transportation Research Board, Washington, DC, 2000, p. 24-34, and *Assessment of Techniques for Corridor Preservation in South Dakota*, Dye Management Group, Inc., Bellevue Washington, March 2002, p. 79 - 110.

Table 2. Summary of Agency Roles in Corridor Preservation and Management.

Agency/Department	Typical Corridor Preservation and Management Role										
	Establish Need	Alignment	Cross-section	ROW Needs	Environmental Documents	Preserve ROW	Obtain ROW	Regulate Development	Grant Access	Manage Access	Funding
State DOT											
Planning/ programming	●										
ROW							●		●	●	●
Environmental					●						
Design		●	●	●							
MPO	●	○ ¹	○ ¹	○ ¹							●
County											●
Engineering	●	●	●	●			○ ²		●	●	
Planning/subdivisions											
Permits								●			
Municipality											
Planning/development regulation	●					●		●			
Development engineering											
Building permits								●			
Public works											
Planning		●	●			●				●	
Capital improvements/design				●	●				●		
Legal/ROW							●				
Regional Mobility Authority											
Finance											●
Special agencies	○	○	○	○	○	○	○	○	○	○	●

¹ Occasionally for multi-jurisdictional corridors.

² Some counties have authority granted by state legislation.

2.4 AGENCY ROLES IN CM&P

Perhaps of greatest importance is the necessity for coordination among the agencies and departments involved in these plans and activities. Corridor preservation and management success requires effective interaction between these entities at several different stages of plan development and implementation and during a corridor’s ongoing land development process. Among the agencies and departments that need to coordinate are the state DOTs, MPOs, counties, municipalities, and various other agencies. The roles of each of these agencies in corridor preservation and management are summarized in Table 3.

Table 3. Agency Roles in Corridor Management and Preservation.

Agency	Role in CM and CP
State DOTs	May establish the need for facility; facility alignment; cross-section; ROW needs; environmental documentation; obtain ROW for state facilities; grant and manage access to state facilities. Their area of activities includes planning and programming, design, and ROW.
MPOs/COGs	May establish the need for facility; in some cases for regional facilities across multiple jurisdictions. May provide alignment, cross-section, ROW needs, environmental. They are involved in planning and programming.
Counties	May establish need for facility; establish facility alignment and cross-section; identify ROW needs; grant access to county roads; and some counties have power to reserve and obtain ROW.
Municipalities	May establish need for a facility and establish facility alignment, cross-section, ROW needs; reserve ROW; obtain ROW; manage development through subdivision, zoning, site plan review, building permit processes; grant and manage access to municipal roads.
Other Agencies	Other agencies may have a role depending on the corridor. Specific authority may be granted over areas such as tolling, transit, ITS, regional mobility, and flood control.

2.5 INTER-GOVERNMENTAL AGREEMENTS IN CM&P

Researchers canvassed various entities to determine current trends and state-of-the-practice in the use of formal and informal agreements between local, state, and other agencies in corridor management and preservation. By way of literature searches, ample review of examples from other states, and personal contacts of land use/transportation professionals, researchers have assessed various approaches to inter-governmental cooperation in this area.

An excellent source of information reviewed for the completion of this task is the NCHRP Synthesis 337 report titled, *Cooperative Agreements for Corridor Management* (2004). According to this comprehensive report, which includes a national survey, of the 22 state and

provincial transportation agencies that responded to the survey, a majority of the respondents (59 percent, or 13 agencies) entered into some type of cooperative agreement to manage arterial corridors to preserve mobility and safety (6). In addition, 9 of these 13 agencies (69 percent) indicated that they use two or more types of agreements to forge cooperation with other agencies or private entities and 6 (46 percent) have used three or more types.

The most common types of cooperative instruments reported were:

- memorandums of understanding (MOU) (69 percent);
- maintenance agreements (54 percent); and
- public-private or development agreements (54 percent).

A MOU is a written agreement that clarifies relationships and responsibilities between two or more organizations that share services, clients, and resources. Various state DOTs have written agreements with local jurisdictions regarding corridor management and preservation. A maintenance agreement is a recurring contract established between the state DOT and local governments. Sometimes other agencies of the state will complete the contracts, such as the use of inmate labor to perform roadside maintenance tasks on behalf of the DOT. Another less formal mechanism that can be used for interagency partnering is a resolution. A resolution is a written motion adopted by a deliberative body. In Texas, Chambers and Bexar counties' Commissioner's Court adopted resolutions regarding county thoroughfare plans.

Typical elements of cooperative agreements included purpose and need, duration, coverage, authority, roles and responsibilities, enforcement mechanisms, monitoring or renegotiation mechanisms, and funding. Finally, the synthesis provided a list of identified "themes" that can contribute or detract from the success of cooperative agreements for corridor management.

2.5.1 Prototypical TxDOT-Local Agreements

In Texas, Interlocal Cooperation Contracts (ICCs) are authorized by Chapter 791 of the Texas Government Code. The purpose of such contracts are to: "increase the efficiency and effectiveness of local governments by authorizing them to contract, to the greatest possible extent, with one another and with agencies of the state." Strengths of ICCs include a high degree of flexibility to provide a wide variety of governmental services, while limitations include a dependence upon how well they are implemented and for what they are provided. Select examples of local-DOT agreements found in the research that are being used in CM&P are provided below.

As part of this research project, a prototypical (example) TxDOT-local agreement, MOU, and resolution were developed which address partnerships between TxDOT and local jurisdictions for cooperative efforts in CM&P for existing or planned on-system facilities. Copies of these three documents are included in Appendix A.

2.5.2 Examples of TxDOT Partnerships

There are numerous examples around the state of TxDOT partnerships and agreements with both public and private entities on the planning and/or development of transportation corridor plans and projects.

Texas I-69 Process Manual and Partnering Agreement

TxDOT and FHWA collaborated with other federal, state, and local agencies to address the complexity of the I-69 project. A Steering Committee and Technical Advisory Committee (TAC) were created, along with the affected MPOs. The TAC/Steering Committee began meeting in late 2001 and early 2002 to formulate an overall approach to the project process. The Committee created the I-69/Trans-Texas NEPA and Project Development Process Manual (Process Manual), the key element to streamlining the I-69/Trans-Texas Corridor (TTC) project. Reviewed and approved by the TAC, the manual provides guidance for each step of the project development process, including how to effectively manage working relationships among many agencies.

The Process Manual includes the partnering agreement, signed by all members of the TAC, which sets forth the goal of initiating a “new way of doing business” and streamlining the I-69/Trans-Texas Corridor project development process (7). The agreement describes the vision, mission, and values that guide project development, and defines the group’s objective: meeting the project’s purpose and need, minimizing the negative impacts of the proposed action, and protecting and enhancing the human and natural environment. The I-69/Trans-Texas Corridor project will be developed using the tiered EIS process, which streamlines NEPA documentation for extraordinarily large projects.

The timeline for development of the Texas portion of I-69 increases the need for expedited review of environmental documents, resulting from the streamlined project planning and development process developed through the I-69 interagency partnerships. The interagency agreement sets forth the responsibilities of the parties relative to the provision of additional resources for expedited environmental reviews of I-69 projects and participation in the joint study and reporting of suggestions for improving and streamlining the environmental process within and between the EPA, FHWA, and TxDOT. The goal is to achieve timely design and implementation of adequate, safe, and economical highway improvements while also assuring such design and implementation is sensitive to the protection of the environment.

The Trans-Texas Corridor (TTC)

A Comprehensive Development Agreement (CDA) between Cintra-Zachry and TxDOT authorizes a master development and financial plan to be developed for the Oklahoma to Mexico/Gulf Coast element of the Trans-Texas Corridor known as TTC-35. A CDA, which was authorized by the Texas Legislature in 2001, is an umbrella agreement that includes several project delivery options TxDOT may use to develop individual segments of TTC-35. These options include traditional design-bid-build methods, design-build, and design-build-operate-maintain and concessions. TxDOT may choose to develop these segments with Cintra-Zachry or other groups. The term of the CDA can be up to 50 years. The master plan will include road, rail, and utility projects along with funding alternatives for the entire 600-mile stretch of TTC-35 (8).

The Trans-Texas Corridor is a proposed 4,000-mile, multiuse transportation system, projected to take 50 years to develop. It is planned as a network of transportation corridors (routes) incorporating separate lanes for passenger vehicles and trucks, rail lines for high-speed passenger and freight rail, and a dedicated utility zone. Components in the system may incorporate existing and new highways, railways, and utility ROW where practical. Up to 1,200 feet wide in some places, the corridor is designed to move people and freight faster and more safely through Texas, from Mexico to the Oklahoma border.

Acquisition of ROW for the TTC will be characterized by public-private investment, including financial participation by utilities, railroads, developers, and landowners. A purchase and lease-back agreement will maintain private use of the property while generating revenue until the property is needed for development.

Ports-to-Plains: Corridor Development and Management Plan

Four state DOTs (Colorado, Texas, Oklahoma, and New Mexico) joined together to create a Development and Management Plan for the Ports-to-Plains Corridor that begins at the Texas/Mexico border in Laredo and continues through Oklahoma, New Mexico, and ends in Denver, Colorado. The Corridor Development Master Plan (CDMP) outlines a series of priorities and steps to improve the corridor and serves as an essential tool for securing federal funding for corridor development.

The plan allows staged implementation of the construction elements, using a prioritization process that first ranks projects based on engineering considerations (such as safety and efficiency), then adjusts the scheduled implementation to fit existing planning on the corridor and reasonable funding and construction times (9). Communities, businesses, trucking associations, and interested members of the public offered strong support for the CDMP. Observed and identified social risks were limited to discrete locations such as relief routes, and the potential negative impact to the regions of the states where traffic will divert from and to the Ports-to-Plains Corridor. From the evaluations, failure to acquire funding for the corridor presented the greatest potential risk to completing the CDMP within a 25-year time frame.

2.5.3 Examples of DOT Partnerships in Other States

Select examples of local-DOT partnerships and agreements in CM&P are summarized in the following bullet points:

- **State of Colorado** – Intergovernmental Agreement among the cities of Brighton, Commerce City, Fort Lupton, and Greeley; the towns of Eaton, Gilcrest, LaSalle, and Platteville; Weld County, and the Colorado DOT – to enter into contracts with each other; to regulate access to public highways within its jurisdiction; to regulate access to a specific section of SH-85, which passes through the jurisdiction of each Agency; and to create and develop an Access Control Plan for the ‘Segment’.
- **State of Iowa** – Corridor Master Plan (US 6) between Iowa DOT and the Cities of Clive, Urbandale, and Waukee – to define parameters for transportation management, access management, land use, and development characteristics along US 6 highway.

The purpose of the Plan is to establish guidelines for managing economic development along US 6.

- **State of Louisiana** – A City-State Agreement titled, “Corridor Preservation and Management Action Plan to Preserve the I-49 Alignment,” for the public purpose of preservation of the Interstate 49 corridor for future construction of the I-49 segment through the City and Parish of Lafayette.
- **State of Florida** – State Road 7 Partnership, between authorized agencies within Broward, Miami-Dade, and Palm Beach Counties to collaboratively facilitate the aesthetic and economic revitalization of the State Road 7/US 441 corridor. The document is not a contract, but shall signify the cooperative intent of the parties. (The Florida DOT commonly enters into MOUs with local jurisdictions for CM purposes.)
- **State of Utah** – Cooperative Corridor Preservation Agreement between Utah DOT and Wasatch County regarding traffic flow and property access along the SR-248 corridor within Wasatch County.
- **State of South Dakota** – MOU between SD DOT, Meade County, Pennington County, and the Rapid City MPO to conduct a Corridor Study served by I-90 and the state and local connecting roads near Piedmont and Black Hawk.
- **Province of Manitoba, Canada** – MOU between Manitoba Transportation & Government Services and the rural municipality of Headingley – regarding the PTH 1W Proposed Highway Upgrading and Access Management Plan. The Access Management Plan is intended to protect the integrity of the highway and provide for future upgrading to a multi-lane divided facility. The MOU represents a formal agreement between Headingley and Manitoba with respect to the establishment of such an access management plan.

3.0 TXDOT AND LOCAL AUTHORITY IN CM&P

The abilities and authority for state DOTs and local jurisdictions to undertake corridor preservation and management activities stem from a wide variety of policies, regulations, and statutes from all levels of government. An important element of such regulations is that they be carried out in accordance with the goals, policies, and objectives of an adopted state, regional, and/or local plan(s).

3.1 EMINENT DOMAIN AND PUBLIC PURPOSE

A key tool and source of authority in corridor management and preservation that is available at all levels of government is the power of eminent domain. Eminent domain is the power of government to take private land for public use. However, this power is limited. When the government takes private property for public use, it must fairly compensate the owner for the taking. States and local jurisdictions are provided eminent domain authority by the U.S. Constitution from the ‘Takings Clause’ of the Fifth Amendment, which states, “[N]or shall private property be taken for public use, without just compensation.” This law allows government to take private property for public use. The Takings Clause applies exclusively to private property, and, it requires that the land is taken for public use. This limitation prevents government officials from taking private land for their own purposes.

Often a controversial question in the use of eminent domain authority is ‘what constitutes a public use?’ Public use is the decision to convert a property held by any individual into property to be used for general public access or purpose. For example, privately owned land is acquired by a city or state to convert to a public park accessible by all. In a classic case of eminent domain, the government determines that it needs privately owned land to create some public benefit, often in the construction of a new highway.

What is included in the scope of ‘public use’ has been controversial; even more so given a recent ruling by the U.S. Supreme Court. Consistent with its prior decisions, in 2005 the U.S. Supreme Court held that the use of eminent domain to further redevelopment and increase tax revenues for an economically distressed area that was not blighted met the ‘public use’ requirement of the federal constitution (*Kelo v. City of New London*, 545 U.S. 469, 125 S. Ct. 2655 (2005)).

3.2 TXDOT POLICIES AND AUTHORITY

Despite the 1991 federal initiative to consider corridor preservation in transportation planning, the State of Texas, like many states, does not have legislation that specifically addresses corridor management and/or preservation for long-term transportation corridors. However, while there are no statutes in place, TxDOT does have a number of policies, regulations, and practices in place that support or facilitate corridor management and preservation. These include the following:

- §201.601 of Texas' Transportation Code, which requires that TxDOT develop a statewide transportation plan;
- Rule §15.60 of Title 43, Chapter 15, Part 1 of the Texas Administrative Code (TAC), which requires that TxDOT, MPOs, and publicly owned transit services cooperatively develop a metropolitan transportation plan;
- §203.002 of Texas' Transportation Code, which emphasizes the construction of controlled access highways and planning for future highways;
- Rule §11.50 of Title 43, Chapter 11, Part 1 of the TAC, which promotes the use of access management on the state system and intergovernmental coordination in this activity;
- TxDOT's *Access Management Manual* adopted in 2003 (revised June of 2004) and the general practice of most of TxDOT's district offices of coordinating with local jurisdictions on access and in the development process;
- Incorporation of access management principles into TxDOT's *Roadway Design Manual*;
- Provisions for advance ROW acquisition in TxDOT's *ROW Manual*, which help to facilitate corridor preservation; and
- Approved legislation in the 80th legislative session (HB 1857), which allows TxDOT and counties to enter into agreements that identify future transportation corridors and allows counties to deny plats if a plat is located within a future corridor that has an approved environmental decision document.

Under current state law (§203.051 of the Transportation Code), the Texas Transportation Commission may authorize TxDOT to purchase through eminent domain:

- an interest in real property; and
- property rights including the right of access and the restriction in development rights for up to seven years, which prohibits new development, modifications to existing developments, or subdivision of the property.

According to state statutes, all environmental documentation must be completed prior to exercising eminent domain proceedings. Under 23 CFR Section 771 of federal NEPA regulations, the NEPA process must be conducted and concluded before federal funds can be used in state DOT projects for ROW acquisition. However, under federal law 23 CFR Section 710.501(a), it provides that states may undertake early acquisition of corridor preservation, access management, or other purposes.

In Texas, current regulations and policies at the state level that have the most affect on corridor management and preservation include:

- access management, including purchase of access rights;
- provisions for early or advance ROW acquisition;

- roadway design policies on frontage roads and medians; and
- intergovernmental coordination on planning and development along state facilities.

3.2.1 Access Management Regulations

TxDOT's *Access Management Manual* applies design and locational criteria for access to four classes of state highways, including new highways or new alignments, freeway mainlanes, frontage roads, and other state system highways. Under legislation enacted in 2004 (§203.031 of the Transportation Code) the manual cannot supersede municipal ordinances and cities with access management ordinances or plans can control permitting driveways on state facilities. This legislation provides that cities with access management programs could be allowed to permit driveways on state facilities, though to date few have chosen this option. Based on feedback received from the '*TxDOT Involvement in Local Development Review*' workshops conducted from 2005 through 2007, the more common approach has been cities and TxDOT coordinating on the issuance of driveway permits as part of the local development process. Thus, to a large extent, the manual fosters partnerships with local jurisdictions by coordinating access review for development along on-system facilities. Importantly, TxDOT's access manual is coordinated with TxDOT's *Roadway Design Manual*, as rules adopted on access management in the Texas Administrative Code state that the agency will use access management in the design of on-system facilities.

3.2.2 Early or Advance ROW Acquisition

Early acquisition means the acquisition of real property by a State or local government in advance of Federal authorization or agreement. Under 23 CFR Section 710.501(a), it says 'the state may undertake early acquisition of corridor preservation, access management, or other purposes.'

Under 23 CFR Section 710.501–710.505, TxDOT may conduct an environmental review for the early or advance acquisition of property for the purpose of protective buying, hardship acquisition, and real property donations provided that an analysis and finding of a categorical exclusion (CE) has been conducted. TxDOT's *ROW Manual* includes provisions for four methods of advance acquisition.

3.2.3 Design Policies, Frontage Roads and Medians

TxDOT's policy related to freeway frontage roads also has implications on corridor management and preservation. In 2001, the Texas Transportation Commission adopted a policy that limited new construction of frontage roads. However, after a series of public hearings the commission withdrew the policy due to concerns from local jurisdictions and retailers across the state who argued that frontage roads are vital to economic development. The current rules for frontage roads provided under §203.031 of the Transportation Code state that TxDOT may:

- designate a state highway on the designated state highway system as a controlled access highway;

- deny access to or from a controlled access highway from or to adjoining public or private real property and from or to a public or private way intersecting the highway, except at specific locations designated by the commission;
- close a public or private way at or near its intersection with a controlled access highway; and
- designate locations on a controlled access highway at which access to or from the highway is permitted and determine the type and extent of access permitted at each location.

Subsequent to the agency’s discussion on the frontage road policy in 2001 and 2002, the commission and TxDOT adopted a comprehensive access management policy. On May 30, 2002, the Texas Transportation Commission approved §11.50–11.55 of the Texas Administrative Code, adopting TxDOT rules for access management on state facilities.

3.3 LOCAL REGULATIONS IN CM&P

For local jurisdictions in Texas, most regulations that can be used for corridor management and preservation purposes lie within local subdivision regulations, zoning ordinances, and other related planning and development policies and ordinances. These regulations provide local jurisdictions with a wide variety of tools that can be used for CM&P purposes. However, there is a significant difference in the ability to engage in corridor management and preservation between cities, the extra-territorial jurisdiction (ETJ) of cities, and counties. From a regulatory standpoint, cities, counties, and ETJs 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. Obviously, there is a greater ability to undertake CM&P in urban areas than in rural areas of the state.

The regulations and abilities to undertake CM&P at municipal and county levels, as well as within extra-territorial jurisdictions of cities in Texas are discussed in the following subsections.

3.3.1 Municipal Authority and Regulation

The ability for cities in Texas to engage in corridor management and preservation stems primarily from an adopted comprehensive plan, land use (zoning) and related development regulations, and subdivision regulations. Subdivision and zoning regulations in combination with a capital improvements program are the primary tools used to implement a comprehensive plan. Municipalities adopt comprehensive plans, subdivision regulations, and zoning under the authority and laws of the State of Texas, particularly under the regulations set forth in the following sections of the Texas Local Government Code (LGC):

- LGC §211 Municipal Zoning Authority;
- LGC §212 Municipal Regulation of Subdivisions and Property Development; and
- LGC §213 Municipal Comprehensive Plans.

Comprehensive Plan Adoption

LGC §213 states that a governing body of a municipality may adopt a comprehensive plan for long-range development and use it to guide the establishment of development regulations. An adopted comprehensive plan serves as the underlying foundation and source of authority for its land use and development regulations. An adopted plan with transportation and land use components is very important because the validity of regulatory actions may hinge on whether an action or requirement is in accordance with a comprehensive plan (10).

Cities cannot regulate land use and adopt zoning ordinances (and related development regulations) without an adopted comprehensive plan in place. Therefore, within cities it is important that specific corridor management and/or preservation plans and development regulations used as tools to carry out aspects of these plans, be based on an adopted comprehensive plan and/or stated policies or objectives of the plan.

Subdivision Regulations

Chapter 212 of the Texas LGC entitled ‘Municipal Regulation of Subdivisions and Property Development’ provides authority for municipalities to regulate subdivisions within the incorporated limits as well as in the ETJ. §212.002 states a municipality may adopt rules governing plats and subdivisions of land within the municipality’s jurisdiction to promote the health, safety, morals, or general welfare of the municipality. Section §213.003 states that the governing body of a municipality by ordinance may extend to the ETJ of the municipality the application of municipal ordinances adopted under §212.002.

Municipal 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&P such as access and ROW preservation can be addressed, both along state and local roads. Subdivision regulations, in combination zoning, can also be used to control lot sizes and depths, and require easements for access, drainage, and utilities.

Land Use/Zoning Regulations

The basic foundation for planning and zoning in the U.S. was established by two standard state enabling acts published by the U.S. Department of Commerce in the 1920s. Also known as the ‘Standard Acts’, the first, *A Standard State Zoning Enabling Act*, was developed in 1921. It included a grant of power, a provision that the legislative body could divide the local government’s territory into districts, a statement of purpose for the zoning regulations, and procedures for establishing and amending the zoning regulations. A legislative body was required to establish a zoning commission to advise it on the initial development of zoning regulations. The second model, *A Standard City Planning Enabling Act* (SCPEA), was published in 1928. The SCPEA covered six subjects:

- the organization and power of the planning commission, which was directed to prepare and adopt a “master plan;”
- the content of the master plan for the physical development of the territory;
- provision for adoption of a master street plan by the governing body;
- provision for approval of all public improvements by the planning commission;
- control of private subdivision of land; and
- provision for the establishment of a regional planning commission and a regional plan.

In Texas, Chapter 211 of Local Government Code allows municipalities to adopt zoning in accordance with a comprehensive plan. This authority allows cities to coordinate land use intensity in relation to the functional class of adjacent thoroughfares, be they local or TxDOT facilities. Cities that have adopted comprehensive plans and zoning ordinances are doing more to manage how development is occurring along thoroughfares, than those that do not. LGC §211 states that the governing body of a municipality may regulate, for example:

- an interest in real property;
- the size of buildings and other structures;
- the percentage of a lot that may be occupied;
- the size of yards and other open spaces;
- population density;
- the location of buildings and land for business, industrial, residential, or other purposes; and
- the outcome of buildings in designated places and areas of historical, cultural, or architectural importance and significance.

LGC §211.004 provides that zoning regulations must be adopted in accordance with a comprehensive plan and must be designed to, in part, reduce congestion; secure safety from fire and similar dangers; promote health and general welfare; provide adequate light and air; prevent the overcrowding of land; avoid undue concentration of population; or facilitate the adequate provision of transportation, water, sewers, schools, parks, and other public requirements.

3.3.2 County Authority and Regulations

The ability for counties in Texas to engage in corridor management and preservation is limited. While all counties in Texas have the authority to regulate the subdivision of land, with the exception of a few counties, they do not have land use controls and only limited authority to regulate what is developed on land and how it develops. Except for specially designated

counties, most counties in Texas lack two important tools needed to engage in corridor management and preservation. These include:

- the authority to adopt and enforce a transportation plan, and
- the authority to regulate land use via zoning.

County Subdivision Regulations

The power to regulate the subdivision of land through the platting process is currently the primary tool available at the county level for corridor management and preservation. It generally includes the review of the layout of lots and streets to meet public health, safety, and general welfare requirements, but typically does not include any land use or site plan review. All counties in the state have the authority to require plats; however, not all counties have subdivision regulations in place that require property owners to submit a plat when property is subdivided. Based on TTI research conducted in 2003, an estimated 83 percent of counties have adopted subdivision regulations (11). It was found that some rural, sparsely populated counties with little growth did not have platting regulations in place.

Chapter 232 of the Texas LGC entitled ‘County Regulation of Subdivisions’ provides the authority for counties to require plats for the subdivision of land. It requires the owner of a tract of land located *outside* the limits of a municipality to have a plat of the subdivision *if* the owner divides the tract into two or more parts to lay out the subdivision, lots, or streets and other parts of the tract intended to be dedicated to public use. Section 232.001 identifies numerous exceptions when a plat is not required in counties. The most significant exceptions are as follows:

- if all lots of the subdivision are more than 10 acres and do not have any improvements to be dedicated to public;
- if the land is to be used primarily for agricultural use, including farming, ranching, wildlife management, or timber production; and
- if the tract is divided into four or fewer parts and the lots are to be sold, given, or transferred to an individual who is a relative or family member (e.g., within the third degree of consanguinity or affinity).

Developments Identified as Manufactured Home Rental Communities (MHRC).

Under section 232.007, MHRC’s are exempt from platting, but counties can establish regulations requiring that they develop an infrastructure development plan to identify the community layout and address water, sewer, drainage, and emergency vehicle access.

Under LGC §232.003, Texas counties have broad discretion in adopting standards for subdivisions including requirements for street ROW amounts and pavement widths. They can adopt specifications for roadway construction (including drainage) as well as require specifications for drainage in a subdivision to manage the flow of stormwater runoff. Part of what counties are allowed to enforce in platting includes requiring ROW for a street or main artery within a subdivision and requiring a reasonable design criteria for streets. Counties can

designate ROW and shoulder widths on subdivision streets, specify road construction and maintenance standards, improve subdivision roads, and assess those costs to property owners.

LGC §232.0025 calls for the timely approval of plats by counties and requires that a county take final action on a complete plat application no later than 60 days after a complete plat application has been received by the county and filed with the county clerk of the county in which the plat is located.

Transportation Plan Adoption: Certain Urban Counties

In 2001, legislation was passed that gave certain urban counties in Texas the ability to adopt and enforce a major thoroughfare plan, similar to what is done at the municipal level in Texas. From a corridor management and preservation standpoint, this legislation is important to TxDOT because it gives counties the potential ability to require ROW dedication for a new or existing TxDOT facility located in a county, if the county has a transportation plan adopted that is consistent with the MPO plan for the region.

SB 873 passed in the 78th legislative session, amended section 232.100 of the LGC and gave certain counties the ability to ‘enforce a major thoroughfare plan and establish ROW’. Under section §232.102, entitled ‘Major Thoroughfare Plan’, a county may:

- require a ROW on a street that functions as a major thoroughfare of a width not more than 120 feet; or
- require a ROW on a street that functions as a major thoroughfare of a width more than 120 feet, if such requirement is consistent with a transportation plan adopted by the MPO of the region.

However, the above abilities to adopt a major thoroughfare plan and require ROW dedication are only applicable to counties that:

- have a population of 150,000 or more and are adjacent to an international border;
- have a population of 700,000 or more; or
- are adjacent to a county with a population of 700,000 or more and are within the same metropolitan statistical area as the adjacent county, and have a population that has increased after the 1990 decennial census, from one decennial census to the next, by more than 40 percent.

Figure 5 illustrates the counties in Texas that can adopt and enforce a major transportation plan under section §232.100.

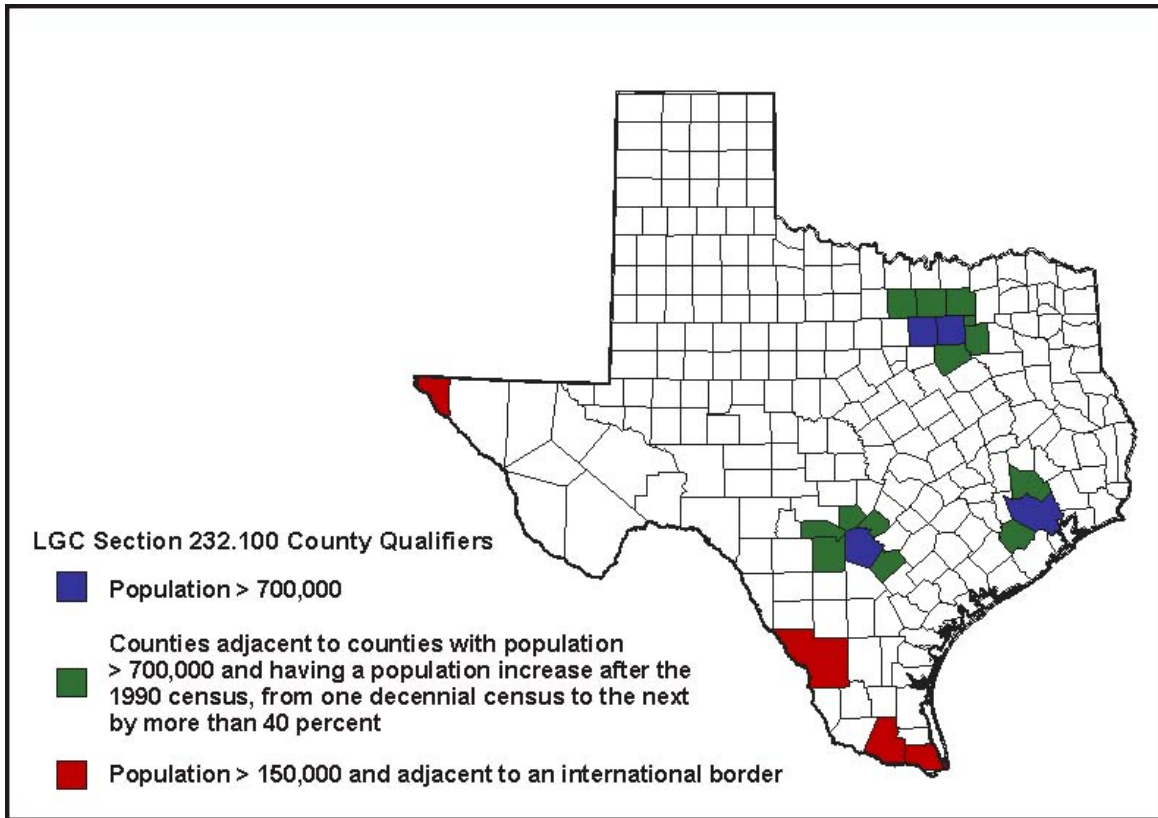


Figure 5. Counties with Ability to Adopt a Major Thoroughfare Plan.

Limited Development Regulatory Authority in Counties

County authority to regulate private land development (other than property subdivision) is limited. Counties have authority to regulate public health and safety measures such as federal floodplain compliance and on site sewer facilities (OSSF), but they have little authority to regulate land use and elements of site development as they relate to corridor management or preservation.

The 2001 legislation giving certain urban counties the ability to adopt a major transportation plan also provided these counties with some authority to regulate lot frontages and setbacks (LGC §233.004). While these counties meeting the ‘urban’ criteria may set reasonable standards for lot frontages and setbacks, they are specifically prohibited from regulating the use of any building or property. Counties also can not restrict the bulk, height, or number of buildings on a parcel; the size of a building; the ratio of building floor space to land square footage; and the number of residential units per acre of land.

Counties may be authorized to regulate development to minimize flood damage and comply with Federal Emergency Management Act (FEMA) flood insurance requirements. Many counties in the state are designated by FEMA as the local administrator of federal flood plain regulations. In addition, counties may be authorized by the Texas Council on Environmental Quality (TCEQ) to administer and enforce septic requirements and regulate solid waste collection. Regarding septic systems, counties have the option of enforcing TCEQ’s requirements or adopting their own regulations that may be more restrictive. The difference

between TCEQ's and county adopted regulations typically relates to lot size requirements and the septic system design. Counties have the authority to enter and inspect public or private property to investigate the design and functionality of septic systems.

Over the past decade, the use of aerobic OSSF has contributed to a proliferation of residential subdivisions in suburban or rural areas containing lot sizes of 1 or more acres. Such large lot rural subdivisions often occur around the periphery of urban and suburban areas where public sewer lines have not yet been extended.

Counties with Special Authority and Zoning

Some counties in Texas have been given special authorities, including land use controls and zoning, in order to address regional or statewide concerns such as flooding and drainage, beach preservation, health and safety issues in border areas, and preservation of state interest recreation areas. Select examples of special county authority are listed in the following bulleted items:

- for counties bordering the Gulf of Mexico there are special provisions that grant the county additional review authority for flood prone areas and protecting damage in these areas;
- counties within 50 miles of an international border are allowed some land use controls, primarily related to inspection of homes;
- in the Houston area, Harris County has been given special, more specific, requirements for the acceptance of infrastructure in order to manage drainage and flooding; and
- counties located below the dam of Lake Livingston are allowed some provisions to regulate the elevations, types, and flood-proofing elements for structures.

Some counties in Texas that contain recreation areas of state interest have been empowered by the legislature to adopt zoning regulations. The legislature has provided this land use authority to Padre Island (in Cameron and Willacy counties), counties containing major lakes around the state, and areas related to the El Paso Mission Trail Historical Area. Provisions for these special zoning areas extend to counties along Lake Tawakoni, Lake Ray Roberts, Lake Alan Henry, Lake Cooper, Post Lake, and Lake Somerville. Counties containing this provision can adopt zoning regulations in accordance with a local comprehensive plan. Such counties have the ability to apply zoning that regulates impervious cover, density, and the height, location, and use of buildings. Counties with these provisions also have the authority to prohibit land uses that are determined to negatively affect these protected areas.

3.3.3 Authority and Regulations in Texas ETJs

Under section 42.021 of the Texas LGC, the ETJ of a municipality is the unincorporated area that is contiguous to the corporate boundaries of the municipality and that is located:

- within one-half mile of those boundaries, in the case of a municipality with fewer than 5,000 inhabitants;

- within 1 mile of those boundaries, in the case of a municipality with 5,000 to 24,999 inhabitants;
- within two miles of those boundaries, in the case of a municipality with 25,000 to 49,999 inhabitants;
- within three and one-half miles of those boundaries, in the case of a municipality with 50,000 to 99,999 inhabitants; or
- within five miles of those boundaries, in the case of a municipality with 100,000 or more inhabitants.

Under Chapter 242 of the Local Government Code, cities and counties must enter into inter-local agreements addressing how platting within a city's ETJ will be handled. HB 1204, passed in June of 2003, requires agreements between cities and counties that identify which entity has the approval authority for plat approval in the ETJ. Based on a survey conducted in 2003, it was found that cities take the lead in processing plats in over 70 percent of these city-county agreements (12).

In addition, section 212.045 of the Local Government Code requires that all proposed land development within the city limits or in the extraterritorial jurisdiction have a development plat of the tract prepared to include, among other building/structure requirements, "...each easement and ROW within or abutting the boundary of the surveyed property..." Although a municipality may not deny or condition the use or development of land because of traffic operations from the proposed development (section 212.103), the code does not prevent municipalities from exercising their authority to require the dedication of ROW. Table 4 summarizes the breakdown of CM&P authority between cities, counties, and ETJs.

Table 4. Comparison of CM&P Authority Between Cities, Counties, and ETJs.

Method or Tool	CM, CP or Both	Cities	Extra-Territorial Jurisdictions (ETJs)	Counties
Comprehensive (Land Use) Plan	Both			
Transportation Plan	Both			
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	✓		
Subdivision Regulations		✓	✓	✓
ROW Dedication Through Platting	Both			
Street Size via Functional Class	Both			
Street Layout / Connectivity	Both	✓	limited	limited
Access Easements	CM	✓	limited	limited
ROW Acquisition/Preservation				
Fee-Simple Purchase	Both			
Negotiated Purchase	Both			
Advance Acquisition (Hardship, Protective, Options)	CP			
Condemnation	Both			
Temporary Use Agreements	CP			
Property Leaseback	CP			
Access Management		✓	✓	
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		✓	✓	
Traffic Impact Analyses	CM			
Purchase of Development Rights	CP	✓	✓	
Transfer of Development Rights	CP	✓	✓	
Property Leaseback	CP	✓	✓	
Density Transfers	CM	✓	✓	
Operational Measures – Signal Timing, ITS	CM	✓	✓	

3.4 CM&P AT THE REGIONAL LEVEL

3.4.1 MPOs and COGs

Metropolitan Planning Organizations are federally required planning bodies responsible for transportation planning and project selection in their regions; the governor designates an MPO in every urbanized area with a population of over 50,000 people. Texas has 25 MPOs statewide. Federal transportation law (SAFETEA-LU) sets forth the guidelines and planning process that MPOs must follow. This process includes the development of a Long-Range Metropolitan Transportation Plan (MTP), a Transportation Improvement Program (TIP), and a Unified Planning Work Program (UPWP).

Councils of Governments (COGs) are voluntary associations of local governments that exist throughout the U.S. and in Texas are formed under Texas law. There are 24 COGs, also called or regional councils, in Texas. COGs address problems and planning needs that cross the boundaries of individual local governments or that require regional attention. Services provided by COGs can vary.

Texas' regional councils of governments are responsible for regional planning activities that may differ from region to region, but typically include planning for economic growth, water supply and water quality, air quality, transportation, emergency preparedness, and the coordinated delivery of various social services. Many COGs establish and host region-wide geographical information systems (GIS) as well as databases on regional population, economic, and land-use patterns

3.4.2 Regional Mobility Authorities

A Regional Mobility Authority (RMA) is an independent local government agency authorized under Chapter 370 of the Texas Statutes. A Regional Mobility Authority is a multi-modal transportation agency that can be formed by one or more counties to finance, design, construct, operate, maintain, and expand a transportation facility or service. An RMA is authorized to implement a wide range of transportation projects, to include highways (tollled or untollled), ferries, airports, bikeways, and intermodal hubs. Projects can be financed using a wide range of methods including the sale of tax-exempt revenue bonds, private equity, public grants, government loans, and revenue generated from existing transportation facilities. RMAs can acquire or condemn property for projects, enter into public-private partnerships, and set rates for the use of transportation facilities.

RMAs have the same powers and duties as TxDOT with regard to the condemnation and acquisition of real property for a transportation project (Section 370.162 of Transportation Code of Vernon's Civil Statutes). This means that with regard to acquiring property through eminent domain, RMAs must follow the same process and procedures that guide TxDOT.

With regard to environmental review, if the project is using state and/or federal funds the project is subject to NEPA. If the project is going to use pass-through tolls it is subject to NEPA.

If a RMA project is not subject to NEPA they can adopt their own environmental review and the rules must, among other things, require the evaluation of the direct and indirect environmental impacts, an analysis of project alternatives, address any mitigation measures that must be undertaken, coordinate with the Texas Parks and Wildlife and the Texas Commission on Environmental Quality, and the environmental review must be accomplished prior to approval of the location or alignment of the project (Vernons section 370.188).

Public or private entities receiving financial assistance from TxDOT for toll facilities or developing a project using pass-through tolls are subject to the same environmental and public hearing requirements as TxDOT (TAC 43 Part 1 Chap 2 (A) 2.20).

3.4.3 State Toll Road Authorities

An example of a state toll road agency is the Harris County Toll Road Authority (HCTRA), which came into existence when, in September 1983, Harris County voters overwhelmingly approved a referendum by a 7-3 margin that signaled the community's interest in improved mobility and allowed for the construction of the Hardy Toll Road and the Sam Houston Tollway.

The Harris County Toll Road Authority is organized under the agency's Director and operates under two separate units: the Services Division, which handles construction management, engineering, ROW acquisition and maintenance; and the Operations Division, which oversees all aspects of toll operations, including revenue collections.

The referendum of September 1983 allowed the Harris County Commissioner's Court to authorize the issuance of up to \$900 million in general obligation bonds, backed by the tax credit of Harris County, for the purpose of constructing, maintaining, and operating toll roads in Harris County. All bonds have a maximum 30-year maturity. The Texas statute that allowed for the creation of the Toll Road Authority states that when all outstanding bonds have matured, the toll roads shall become the responsibility of the Texas Department of Transportation.

Public or private entities receiving financial assistance from TxDOT for toll facilities or developing a project using pass-through tolls are subject to the same environmental and public hearing requirements as TxDOT (TAC 43 Part 1 Chap 2 (A) 2.20).

3.5 BILLS IN THE 80TH LEGISLATIVE SESSION IMPACTING CM&P

There were numerous bills included in the 80th Texas Legislature that are related to CM and/or CP. The major transportation issue that dominated this legislative session was the Trans-Texas Corridor. Elected officials from around the state expressed concern about aspects of the TTC, such as its purpose and need, costs, potential funding, and CDAs. Senate Bill 1892 and House Bill 792 both contained language that placed a moratorium on CDAs. SB 1892 was vetoed by the Governor, and HB 792 was passed and became law; however, several projects were exempted from the moratorium in HB 792 in the Houston-Galveston region.

There were also numerous other bills in the 80th legislature relating to increasing the authority and ability of TxDOT and local jurisdictions for CM and CP activities. Background information and the outcome of these bills are discussed below.

3.5.1 House Bill 1857

HB 1857 was passed into law and took affect September 1, 2007. The bill amended section 232.0033 of the Texas Local Government Code to add a section on ‘Future Transportation Corridors’. Under the bill, a county may refuse to approve a plat in a preserved corridor:

- if it does not state that the subdivision is located within the alignment of a transportation project as shown in the final environmental decision document; or
- if all or part of the proposed subdivision is located within the area of the alignment of a transportation project as shown in the final environmental decision document.

HB 1857 also requires that purchase or lease contracts for land in the subdivision must contain a conspicuous statement that the land is located within the area of the alignment of a transportation project.

3.5.2 House Bill 2268

HB 2268 did not pass. The purpose of HB 2268 was to authorize TxDOT to purchase interests in real property before the location and alignment of a highway has been determined. Under the failed bill, the prohibition against making an advance acquisition by condemnation would have remained. The bill would have amended Section 202.112 of the Transportation Code to authorize TxDOT to purchase fee title, an easement, a leasehold, or other interest in real property and make it subject to the same conditions that currently apply to the use of options to purchase. It also added language to clarify that the legal requirement that an environmental review of a TxDOT project be conducted before the location of an alignment of the project has been determined does not prevent the advance acquisition of property.

Had this bill passed, it would have provided TxDOT an additional advance acquisition tool for use in corridor preservation. Supporters of the bill believed that it would have provided a more attractive option than the ‘option to purchase’ tool. Unlike options to purchase, the bill would had provided landowners willing to sell with certainty and immediate receipt of sale proceeds and removed the uncertainty of when or if TxDOT might purchase their property and at what price.

3.5.3 House Bill 117

HB 117 died in committee. The purpose of HB 117 was to expand the applicability of Section 232.100 of the LGC, which provides certain counties with the ability to adopt and enforce a transportation plan. The failed bill would have increased the number of counties in the state that have this thoroughfare planning ability. The proposed bill would have removed language in Section 232.100 regarding ‘a county that has a population of 150,000 or more and is adjacent to an international border or has a population of 700,000 or more’ and replaced it to read ‘a county that has a population of 150,000 or more’. The bill would have benefited TxDOT and counties by affording an opportunity for some ROW needed for a new or an existing roadway to be potentially purchased, dedicated, or reserved as part of the county platting

process, if the additional ROW was needed to gain compliance with the county's adopted thoroughfare plan.

3.5.4 Bills Relating to the SH 130 Corridor

There were three unsuccessful bills in the 80th Legislative session that proposed to expand city and county land use powers along SH 130 in the Austin area. These bills included SBs 1688, 1689, and 1690, all of which died in committee.

SB 1688 would have authorized a municipality (Austin) to create a transportation infrastructure district anywhere within five miles of SH 130 and within Austin's ETJ and would have granted the city limited annexation authority over the district. It would have authorized the district to issue bonds, establish regulations regarding drainage and flood control, and to implement assessments and impact fees to pay for infrastructure. The bill would have required the city to assume the district's debts upon annexation and would have authorized the district to collect sales tax and property taxes to pay utilities and infrastructure for the district. It also would have forbidden any taxation within the district until residents there had voted in one City Council election.

SB 1689 would have provided small cities along the SH 130 corridor with limited annexation powers if they lie within 15 miles of the corridor. This bill would have allowed these cities to enforce some local ordinances in order to aid them in addressing growth along SH 130.

SB 1690 would have allowed zoning and impact fee authority in certain sections of Williamson and Travis counties, specifically the unincorporated areas of these counties that are located within 15 miles of a toll project (SH 130).

4.0 CURRENT METHODS AND PRACTICE IN CORRIDOR MANAGEMENT

This chapter identifies and reviews the methods and types of regulatory components used to manage development along state highway corridors in Texas. It provides results of a recent survey to Texas cities and case studies on CM from Texas and other states to provide information on current practice.

4.1 OVERVIEW OF CM TOOLS AND METHODS

A wide variety of tools can be used to manage development along TxDOT corridors. Table 5 shows a listing of CM tools and methods used in Texas and throughout the U.S. to manage development. The tools and methods are placed into four general categories including access management, zoning and development regulations, subdivision regulations, and miscellaneous techniques. Table 5 also indicates if the tools fall under TxDOT or local authority.

Table 5. Regulatory Tools Used in CM Along TxDOT ROW.

CM Tool or Technique	Authority		
	TxDOT	City	County
Access Management			
Driveway Spacing	✓	✓	
Corner Clearance	✓	✓	
Acquisition of Access Rights	✓	✓	✓
Non-Traversable Medians	✓	✓	✓
Signalized Intersection Spacing	✓	✓	
Arterial Frontage and Backage Roads	✓	✓	
Zoning and Development Regulations			
Corridor Zoning Overlays		✓	
Building and Parking Setbacks		✓	
Driveway Throat Length		✓	
Access to Outparcels		✓	
Subdivision Regulations			
Lot Dimension Controls		✓	limited
ROW Dedication Through Platting		✓	limited
ROW Reservation Through Platting		✓	limited
Joint and Cross-Access Easements		✓	limited
Development Easements		✓	
Miscellaneous Techniques			
Impact Fees		✓	
Fee In-lieu Payments		✓	
Interim Uses		✓	limited
Transfer of Development Rights		✓	
Density Transfers		✓	
Operational Measures and Intelligent Transportation	✓	✓	limited

Table 5 highlights the importance of local-TxDOT partnerships in corridor management along on-system facilities. It clearly shows that cities in Texas can have a significant impact on corridor development if they have the proper tools in place. The tools and methods in corridor management are described by category in the following subsections.

4.1.1 Access Management

Access Management (AM) is one of the most important components of CM for protecting corridor capacity, mobility, and safety. 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.

AM involves a continual and comprehensive approach to manage all aspects of access, including facility design elements as well as those that are development related, as part of an on-

going, continual process. Guidelines on the use of various aspects of access management are provided below. For more 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 6, is measured from the closest edge of pavement of the first access to the closest edge of pavement of the second access.

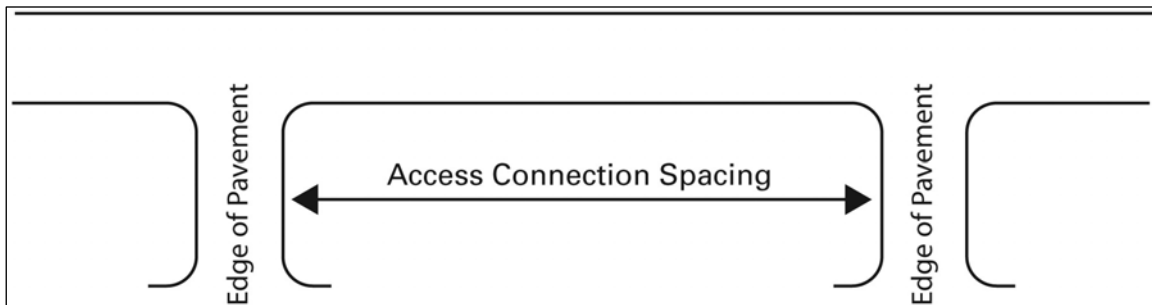


Figure 6. Driveway Spacing Measurement.

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 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.

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.

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 7 illustrates upstream and downstream corner clearance.



Figure 7. Upstream and Downstream Corner Clearance.

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 (13).

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 8, is one such example where median installation, in larger part, preceded development.

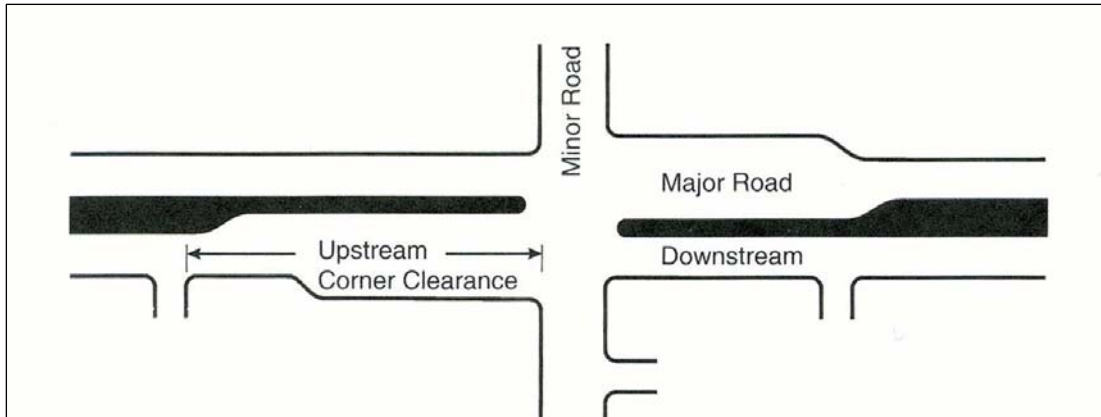


Figure 8. Raised Medians Parmer Lane (FM 734), Austin, Texas.

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.

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 as well as 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.

Arterial Frontage and Backage Roads

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

Figure 10 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 10. Arterial Backage Road.

4.1.2 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 (16). 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.

For communities with zoning, land use controls are used in CM to control the types and intensity of land uses within designated corridors. Cities (and, in some states, counties) adopt future land use plans in order to meet a desired character or objectives for how property along a thoroughfare should develop or re-develop. The land use plan is implemented through zoning authority as part of the land development process. The types of uses that could be incorporated in a designated CM corridor are unlimited. More often than not, these controls are used to exclude certain types or categories of land uses in designated corridors such as high traffic generators, convenience oriented uses, or 'high turn-over' types of retail, or entertainment uses such as bars and night clubs.

Lot Dimension Requirements

Deeper and wider parcels along arterials and corridors help facilitate improved access spacing, design, and internal site circulation. Lot dimensional requirements may 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 11:

- 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 areas (17).

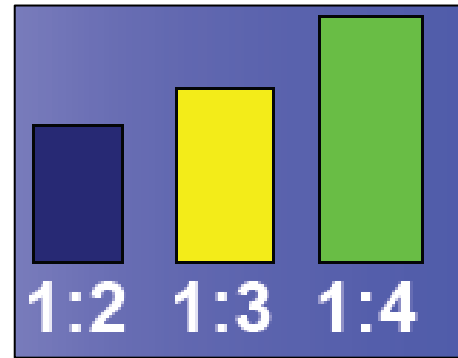


Figure 11. Lot Dimension Requirements.

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 to a lack of capacity of the adjoining roadway and the lack of availability of public water and sewer (section 212.002 of the Texas Local Government Code).

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.

An illustration of zoning overlays on TxDOT roadways in the cities of Grand Prairie, College Station, and Frisco are shown in Figure 12 (18, 19, 20). The overlay zones are represented by the shaded area over the individual corridors.

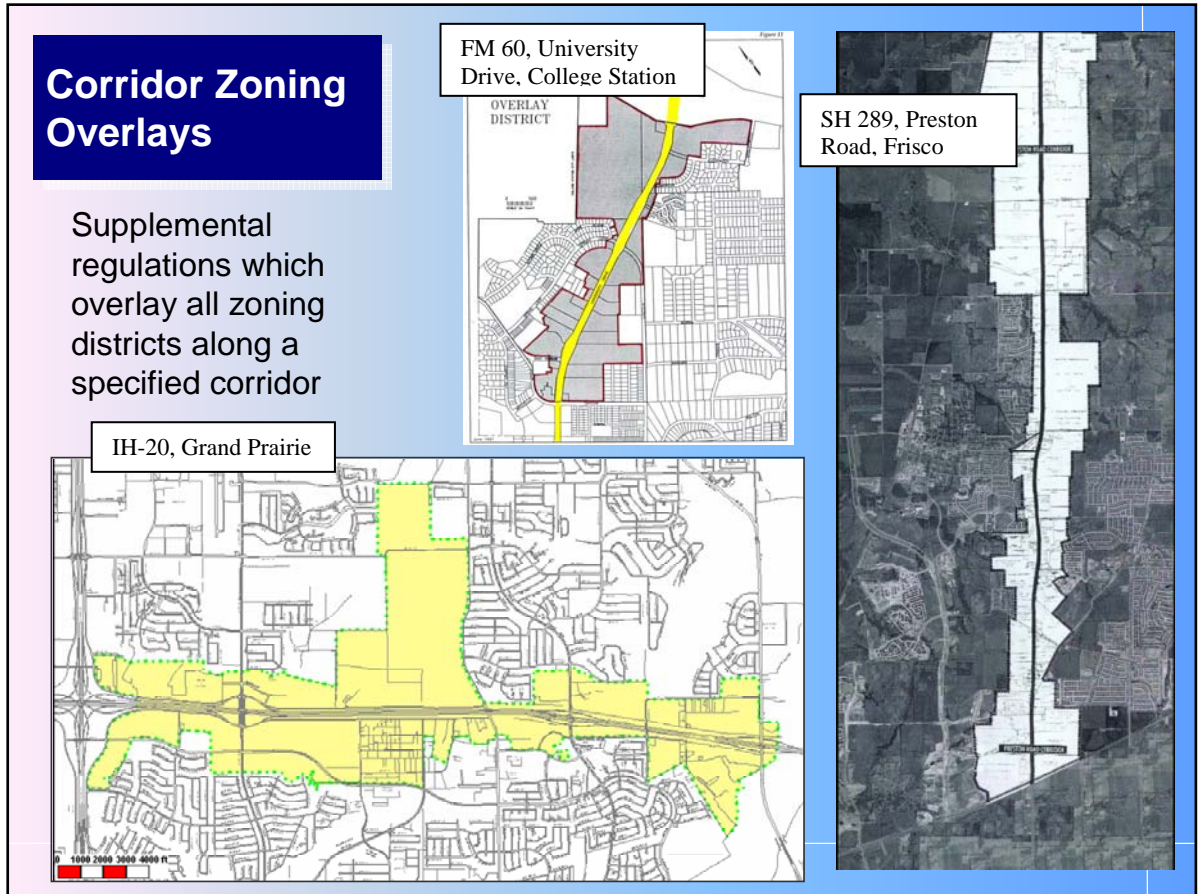


Figure 12. Examples of Overlay Zoning Districts on TxDOT Corridors.

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. There are three basic steps to creating an overlay district:

1. Define the purpose of the district. The district should have a clearly defined purpose.
2. Identify the areas that make up the district. Mapping district boundaries will depend on the natural or cultural resources and the geographic areas that relate to achieving the purpose of the district.
3. Develop specific rules that apply to the identified district.

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 overlays are on TxDOT roadways. Figure 13 shows the types and percentage use of special requirements that are included in zoning overlays in Texas cities based on the 2007 survey.

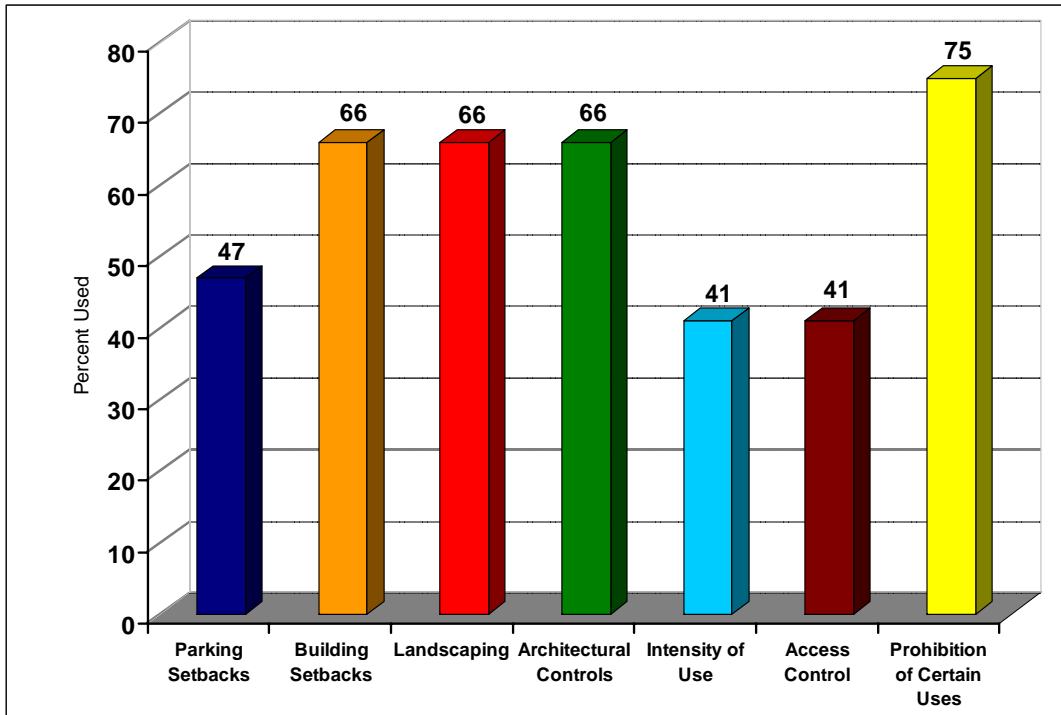


Figure 13. Requirements Used in Zoning Overlay Districts in Texas.

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

- adoption of an access plan that 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 that have significant transportation benefits can also be added.

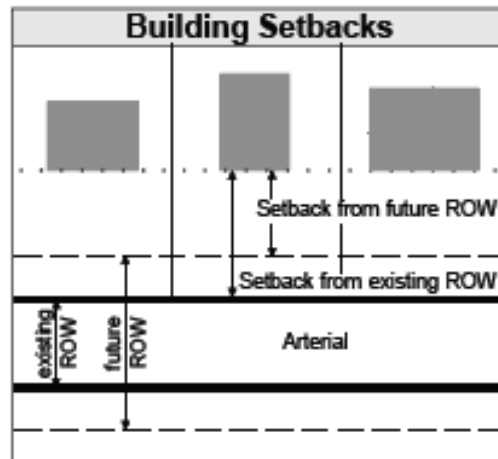
Setbacks

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 14. 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 that 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

Figure 14. Illustration of Building Setback.

Driveway Throat Length

Driveway throat length, as shown in Figure 15, 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.

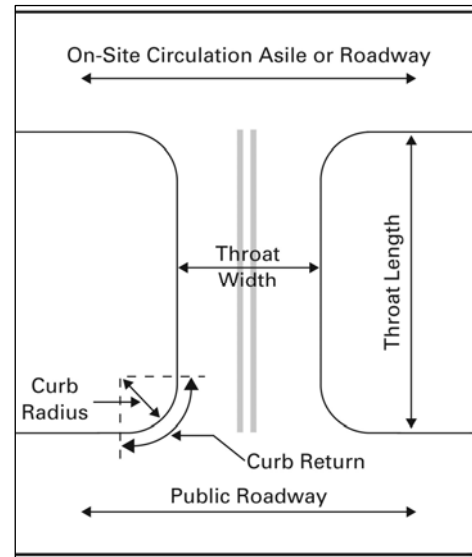
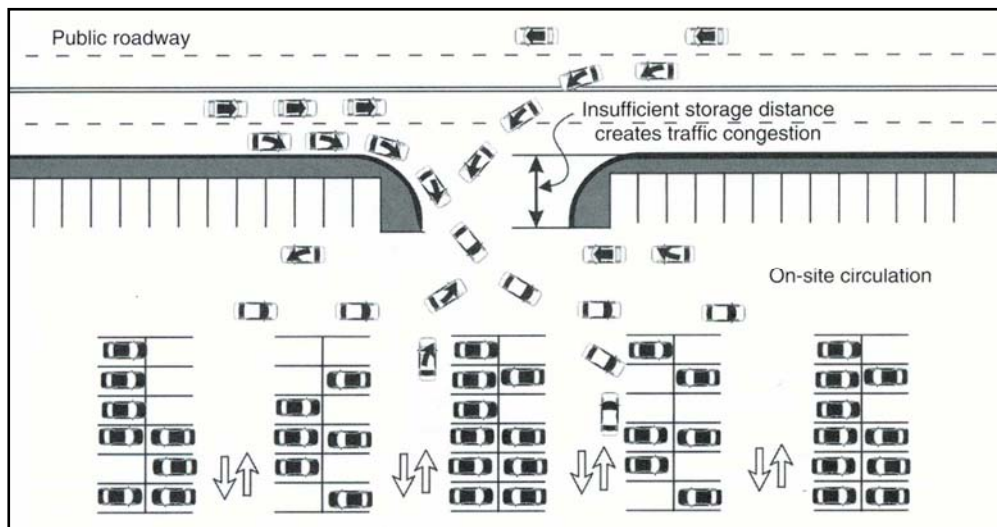


Figure 15. Driveway Throat Length.

A municipal 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. Some cities may use their discretionary authority to require greater throat lengths for shopping centers, big box retailers, and other major traffic generators. Figure 16 shows a driveway with inadequate throat length and the resulting conflicts and congestion that can occur.



Source: Access Management Manual, TRB 2003.

Figure 16. 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 ft² Gross Leaseable Area (GLA);
- 75–95 feet for smaller developments < 200,000 ft² 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 facility's 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 17 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 (21).

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. An adopted master preliminary plat or development plan can be used to make all prospective purchasers of outparcels aware of the access requirements.

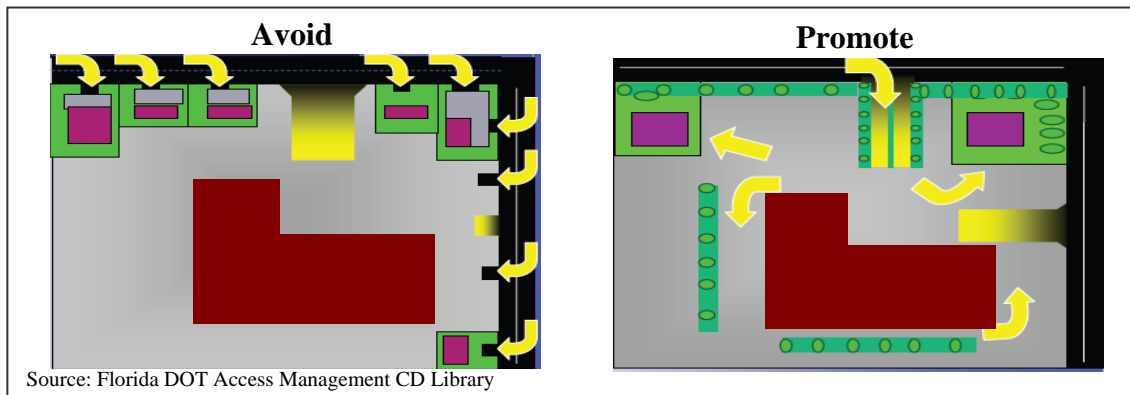


Figure 17. Access to Outparcels.

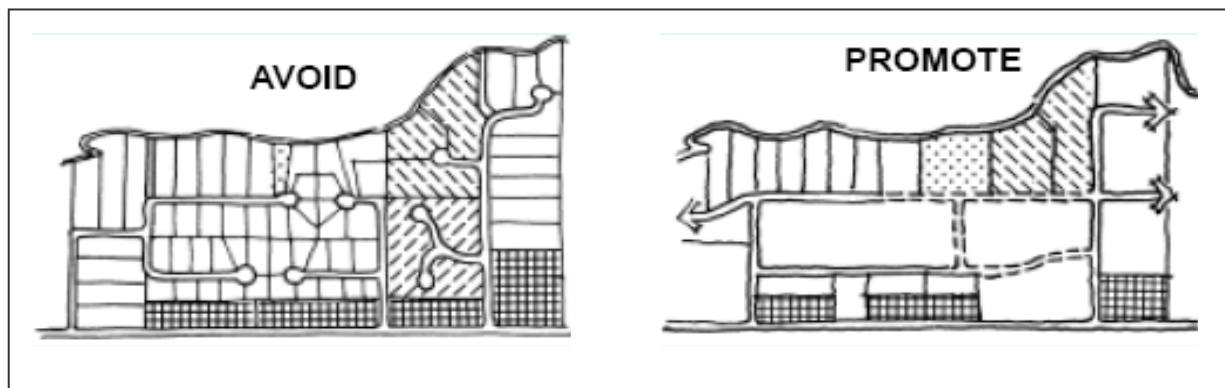
4.1.3 Subdivision Regulations

Local 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 Street 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 18 depicts general local street layouts adjacent to TxDOT roadways that should be avoided and promoted. Connectivity of the local street network adjacent to the TxDOT 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.



Source: Managing Corridor Development, A Municipal Handbook, University of South Florida

Figure 18. Local Street Connections Adjacent to Corridors.

ROW Dedications through Platting

ROW 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; 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 (11). TxDOT districts and area offices should coordinate with cities on state facilities in need of additional ROW.

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 can 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:

- some landowners/developers may voluntarily agree to reserve the ROW needed knowing that TxDOT will purchase it from them in the near future; and
- some cities and counties may have the legal comfort level to require ROW reservation or dedication.

Joint and Cross-Access Easements

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 order that proper spacing can be achieved.

Cross-access easements, as shown in Figure 19, 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.

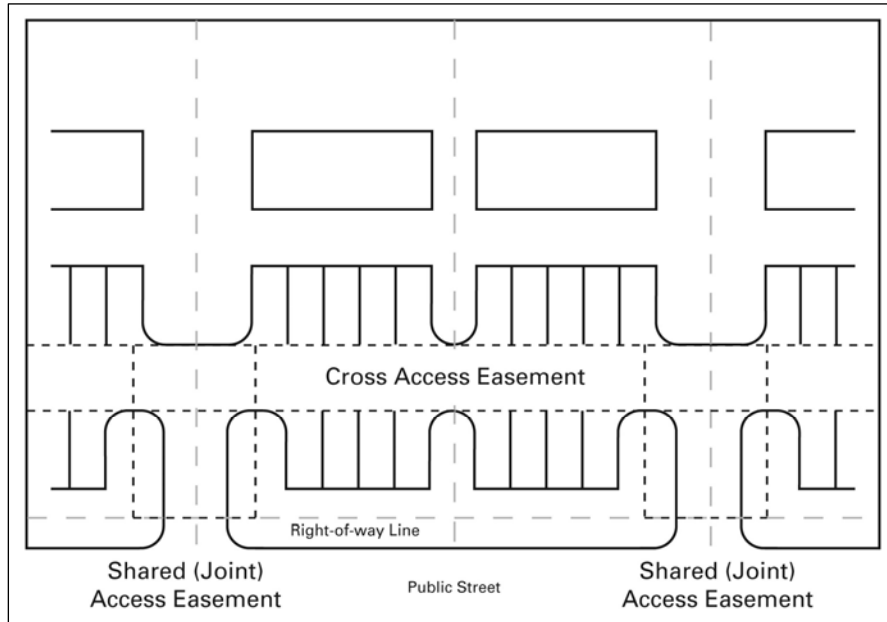
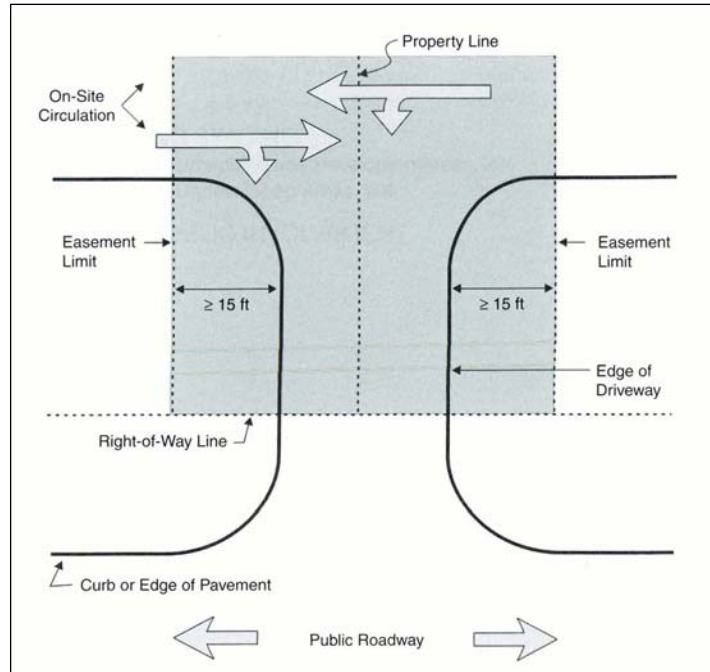


Figure 19. Placement of Shared and Cross-Access Easements.

Many cities in Texas have ordinances or policies in place that require access easements. For general information and guidance purposes, Figure 20 provides a section on cross-access easements in a city's Unified Development Ordinance (UDO).

A shared access easement, shown in Figure 20, is centered on the property line between two abutting parcels, which allows these parcels to share a single driveway. The shaded area in Figure 20 shows generally how shared access easements could be reflected on a plat. 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 20. Illustration of a Shared Access Easement.

4.1.4 Miscellaneous Techniques

In addition to traditional tools and methods in CM&P, there are also other tools and incentives that can be negotiated with property owners to achieve CM and CP objectives. As shown in Table 6, negotiable tools include density transfers, transfer of development rights, tax abatements, and interim/temporary use agreements. Table 6 also indicates if these tools fall under TxDOT or local authority, or both.

Table 6. Negotiable Tools and Measures in CM.

Method or Tool	CM Activity	CP Activity	TxDOT Authority	Local Authority
Density Transfers	✓	✓		✓
Transfer of Development Rights	✓	✓		✓
Tax Abatements	✓	✓		✓
Interim/Temporary Use Agreements	✓	✓	✓	✓

Definitions for the negotiable tools and measures listed in Table 6 are as follows:

- Density Transfer – permits the landowner to build, on a portion of the property outside of the ROW boundary, the square footage or number of dwelling units that were planned for the entire parcel. This technique is similar to cluster zoning and planned unit development (PUD) on one part of a site, leaving the remainder

preserved or open. PUDs are similar in concept to cluster zoning, but differ in that they provide a legal framework for the review and development of the property.

- Transferable Development Rights (TDR) – allows the property owner to develop, on another site, the amount of development that would have occurred on the property claimed by the ROW. The new property does not necessarily have to be contiguous to the original property that was impacted by the transportation corridor.
- Tax Abatements – are a reduction in the amount of tax incurred on a piece of property situated in an identified corridor and left without further development. This can be achieved by assessing the land as an agricultural use or by applying a reduced tax rate on the property. The owner is essentially compensated for not developing the property.
- Interim Uses – allow a low intensity land use designation to be applied to property that will eventually be acquired as corridor ROW.

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 (ITS) 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.

4.2 CITY SURVEY RESPONSES ON CM IN TEXAS

As part of this research, cities across the state were surveyed to identify those with adopted plans and zoning in place and to collect information on previous and on-going CM&P efforts in Texas. Surveys were e-mailed to 126 cities, and completed surveys were received from 51 cities (yielding a response rate of 40 percent). The survey included questions relating to both corridor management and corridor preservation, with about half relating to each particular topic.

The results of TTI's *Survey on Corridor Management and Preservation in Texas*, distributed to city officials and/or city planning departments throughout Texas, indicate a majority of the respondents have used a zoning overlay district. Of the 46 survey respondents, 28 reported their city has used a zoning overlay district, while 14 reported they had not. When asked if they were aware which cities in Texas used a zoning overlay district, several respondents stated they believed the larger cities used them or, at least, that most cities incorporated some level of overlay in the zoning code that addresses many aspects.

Respondents were next asked to indicate (by checking yes or no) which regulatory controls were enhanced or addressed by the zoning overlay(s). Respondents indicated the following regulatory controls – landscaping, architectural controls, building setbacks, and prohibition of certain uses – were utilized in the zoning overlay(s) more often than regulatory controls for parking setbacks, density/intensity of use, and access control/spacing.

4.3 CASE STUDIES IN CM

4.3.1 IH-20 Overlay, Grand Prairie, Texas

The city of Grand Prairie adopted a zoning overlay district on a 4.7-mile stretch of IH-20 within its limits. The district begins at the intersection of SH 360 and extends west to FM 1382 at the city limit line. In anticipation of future development, the city created the I-20 corridor plan and overlay, shown in Figure 21, as a means to create a unique retail district unlike those of surrounding cities. The district establishes land use, zoning, development standards, and design criteria along the corridor that is compatible with a high density, highly traveled urban retail area. It targets specialty retail, arts and cultural establishments, and family recreation. The stated purpose of the overlay is to maximize the corridor's potential as a city asset with sustainable development and address the concerns of property owners that future development will be compatible with existing residential uses (19).

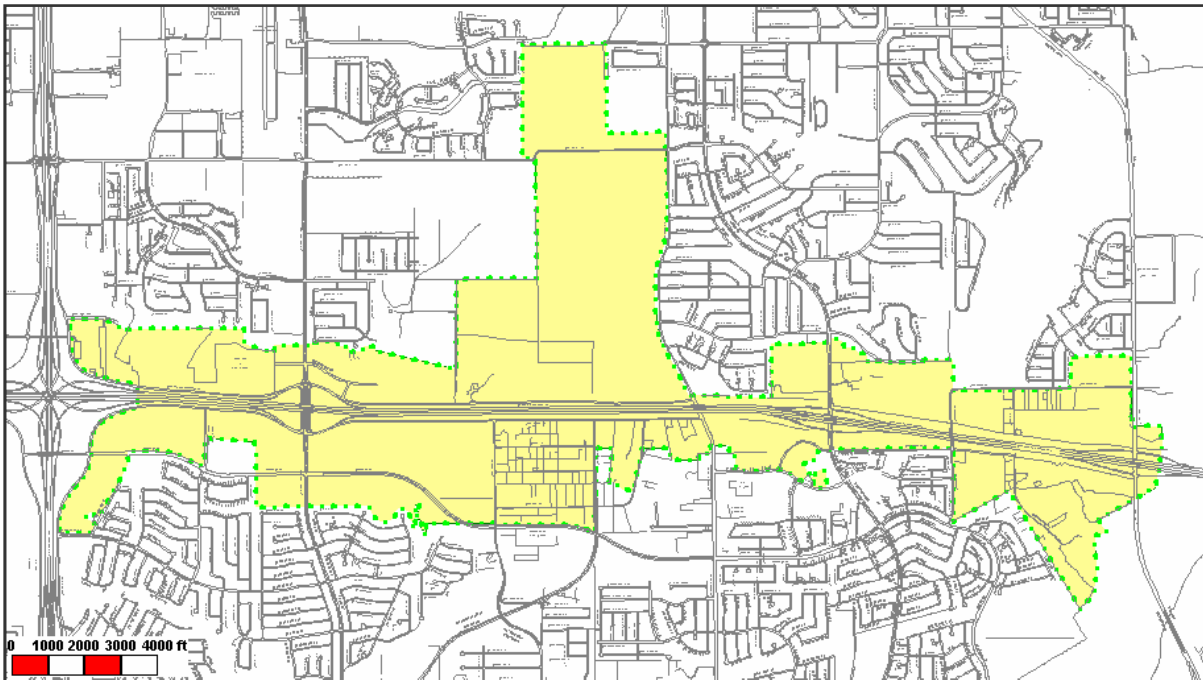


Figure 21. Zoning Overlay on IH-20 in Grand Prairie, Texas.

In 2002, there was a small amount of existing retail/commercial development, but approximately 80 percent of the land within the I-20 overlay was undeveloped. The city's future land use plan calls for the large majority of land abutting I-20 to be commercial, along with a few scattered areas of multi-family uses. The overlay district added development standards and guidelines to the existing base zoning districts, which include residential, institutional, office, service, retail, amusement, and wholesale trade. All properties in the I-20 overlay are subject to

the requirements of the city's unified development ordinance for the base district as well as the following supplemental requirements of the overlay:

- Site Plan Approval - For all non-residential development within the overlay, a public hearing is required at both the Planning and Zoning Commission and City Council in order to gain site plan approval.
- Architectural Requirements - Special requirements are set forth for building articulation, building materials, roofline variations, facades, and building colors.
- Sign Regulations - Additional restricts are placed on pole signs in addition to those in the sign requirements of the city's UDO.
- Landscaping Requirements - In addition to the landscape requirements of the UDO, a tree protection plan must be submitted and incentives, such as a reduction in parking requirements, are provided for existing trees that are incorporated into the site's design.
- Parking Setbacks - A minimum of 30-foot parking setback from the ROW line is required.
- Screening, Lighting, and Utilities - Screening requirements are set forth for parking areas, service areas, mechanical areas, outside storage areas, and garage bays. Lighting is required to be oriented toward the center of the site. All utilities, except for major transmission lines, are required to be underground.

The overlay district also requires a special use permit for numerous uses including, but not limited to, drive-in/drive-through restaurants and car/auto dealerships.

While traffic and transportation considerations were not specifically mentioned in the development of the I-20 overlay, it does contain numerous transportation benefits and items of interest to TxDOT. The city's targeted uses for the overlay – specialty retail, arts and cultural establishments, and family recreation – generally do not include major traffic generators. The 30-foot parking setback from the ROW line benefits traffic progression and access design. The 30-foot setback requirement will result in a minimum driveway throat length of 30 or more feet, which in turn will benefit progression along the roadway by allowing more room for turning vehicles to store on-site instead of in the outside traffic lane.

4.3.2 University Drive (FM 60) Study and Overlay, College Station, Texas

In the early 1990s, the City of College Station conducted a corridor study of a 1.25-mile section of University Drive (FM 60) in College Station. At the time, this section of FM 60 was a four-lane urban roadway with a center two-way left turn lane that was largely undeveloped. The city conducted the study because:

- the corridor served as an important entryway into the city and Texas A&M University;
- they believed (correctly so) that development of the corridor was imminent;

- TxDOT (Bryan District) was developing plans to upgrade this section of roadway to a six-lane facility with a raised median; and
- they wanted the land along the corridor and TxDOT’s widening project to develop in accordance with the city’s community appearance, streetscape, and economic development policies and objectives.

The study, entitled *A Study of the University Drive Corridor*, addressed existing and future land use and zoning, utility availability, traffic mobility and access management, and aesthetic quality of development. To accomplish the city’s objectives, the study recommended a zoning overlay district and developed a corridor driveway location plan (18). Figure 22 shows an illustration of the University Drive overlay, and Figure 23 is an aerial picture of a section of the corridor. The aerial illustrates the enhanced building and parking setbacks and access restrictions required in the corridor.

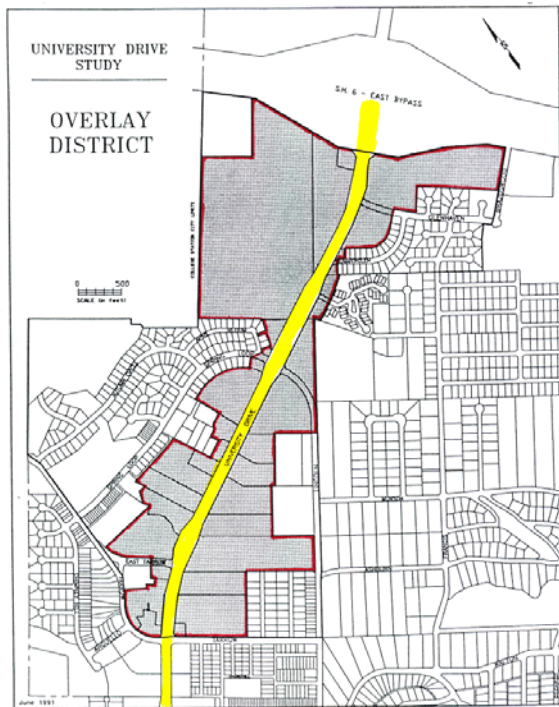


Figure 22. University Drive Overlay District.



Figure 23. View of Setbacks and Access Control in University Drive Overlay.

The zoning overlay district added supplemental requirements in addition to those of the underlying base district for each parcel. It was designed primarily to enhance the visual appeal of the corridor, but in retrospect (now that the corridor is fully developed) it had significant transportation and economic benefits. The supplemental requirements included in the University Drive overlay district included:

- an increase in the front building setback line from 25 to 40 feet;
- an increase in the parking setback from 10 to 20 feet;
- a requirement for building aesthetics such that they be ‘harmonious with the existing manmade or natural environment’;
- a requirement that all development sites be reviewed and approved by a special committee (made up of city Planning and Zoning Commissioners and city staff) to ensure they met the aesthetic requirements of the overlay;
- a requirement that all electrical utilities be underground; and
- enhanced requirements on landscaping requirements, including screening for parking, restrictions on outside storage and display, and special restrictions on signs, including prohibitions on flags and banners.

The driveway plan included in the University Drive corridor study, shown in Figure 24, was developed considering existing access points and applying the city's access ordinance to the undeveloped parcels along the corridor. It established where future access locations could occur and where existing ones needed to be closed or consolidated, either as part of (re)development or as part of TxDOT's widening project. The driveway plan considered property lines, locations of future median openings, and it identified locations where cross-access between parcels would be required.

The University Drive driveway plan was not included in the overlay district, but it was adopted as policy and is subsequently used by the city in review of development and redevelopment along the corridor.



Source: University Drive Corridor Study, City of College Station, Texas, 1991

Figure 24. Driveway Plan for University Drive Corridor.

4.3.3 Preston Road (SH 289) Corridor Study and Overlay District, Frisco, Texas

In 2000, the City of Frisco conducted a corridor analysis on an 11-mile section of Preston Road (SH 289) generally from SH 121 north to US 380. Products of this comprehensive land use and transportation study were the development of (1) a strategic plan for the corridor and (2) the Preston Road (Zoning) Overlay District, shown in Figure 25. The district was developed in close cooperation with the City of Frisco's Millenium Plan, which sets forth the city's desired land use pattern and thoroughfare network. The development of the overlay and its requirements are catalogued in the City of Frisco's *Preston Road Overlay District Development Standards*. This document, dated September 2000, was adopted by city ordinance as a guide to planning and development along this TxDOT corridor (20).

The study used a consensus based planning process where aspects of plan and development standards for the corridor were reviewed and discussed at public meetings. The process resulted in design standards for development along Preston Road and creation of identifiable civic and commercial cores. The zoning overlay district, the mechanism to implement the study, extends out 750 feet perpendicular from the centerline of SH 289 and excluded existing single-family residential development.

Recognizing the 11-mile Preston Road Corridor would not be homogeneous, the overlay district was divided into subdistricts in order to

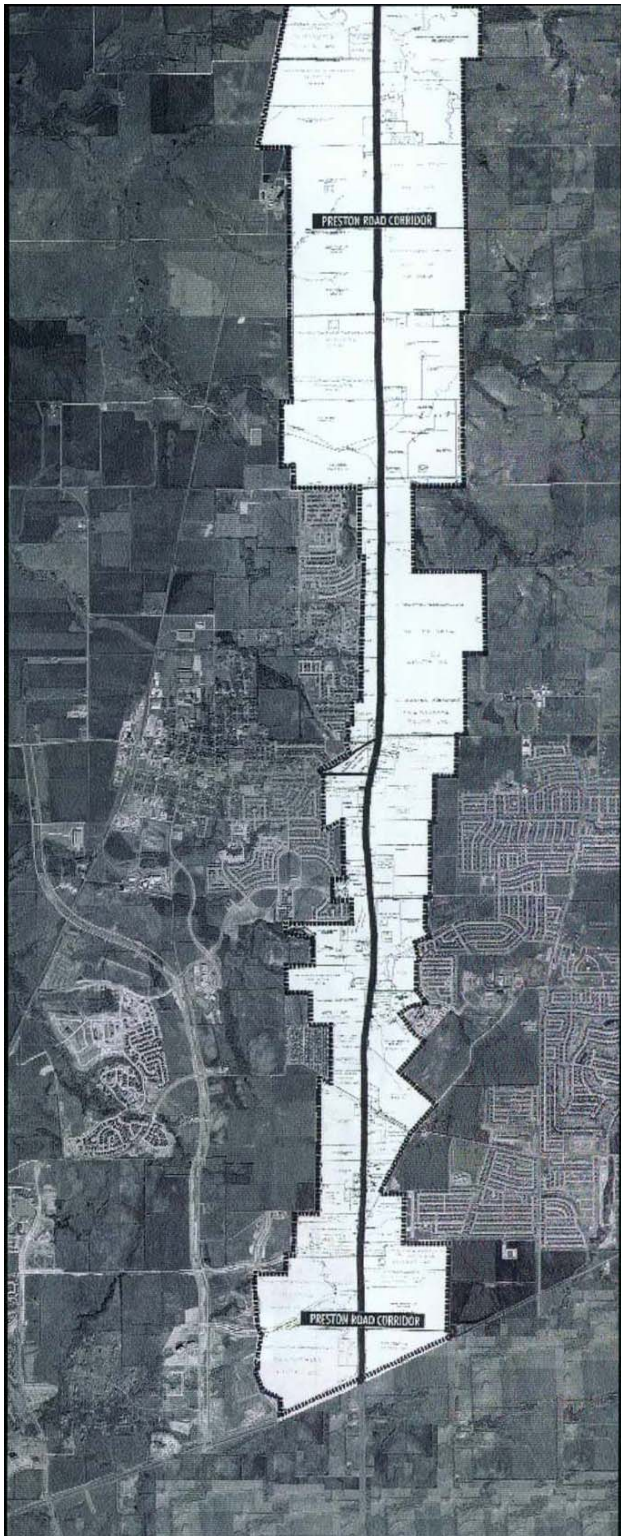


Figure 25. Preston Road (SH 289) Corridor
Zoning Overlay District.

address the unique set of issues and concerns in each of these subareas. Separate development standards were adopted for each of the following subdistricts:

- US 380 and SH 121 Gateways,
- Rural Corridor,
- Main Street, and
- Retail Corridor.

The overlay district addressed some or all of the following requirements and standards with the subdistricts:

- Prohibited Uses with subdistrict containing a detailed list. Common prohibited uses included auto sales, repair, and rental (allowed in retail corridor); light industrial and heavy commercial, mobile/modular homes. Gas stations are prohibited at midblock locations; but allowed at intersections in the retail and rural subdistricts. No outside sales, storage, or operations are permitted unless screened from public view.
- Uses with conditional development standards with each subdistrict containing a detailed list. Typical uses listed in this category include office and professional, banking, certain retail, restaurants, and auto service and repair.
- Enhanced building and parking setbacks. For example, a minimum 50-foot building setback is required in the SH 121 gateway and minimum 100-foot setback required in the US 380 gateway. The setbacks are as low as 30 feet for other subdistricts.
- Special requirements on access such as:
 - requirements for ‘slip roads’ to provide access into and out of developments (it functions essentially as an arterial frontage road);
 - no parking or driving aisles located between a building and the street;
 - medians in driveways (for sites with >200 parking spaces);
 - a minimum driveway throat length of 150 feet (for sites with >200 parking spaces); and
 - enhanced landscape standards, special planting and paving for driveway entries.
- Street Design Standards, which generally included 6 travel lanes, a minimum 14-foot landscaped center median, meandering sidewalks, and a double row of trees along both sides of the roadway contained with a landscape easement.
- Building Standards such as primary building facades must face the street; locations of buildings must consider roadway access and preservation of natural vegetation; and exterior appearance and architectural controls, including materials, colors, projections and recesses, and screening of service areas and equipment.
- Neotraditional Development Standards (for the Main Street subdistrict) for pedestrian-friendly, mixed uses.

4.4 CM CASE STUDIES FROM OTHER STATES

4.4.1 US 98 Corridor Access Management Plan, Polk County, Florida

Excerpted from *Effective Strategies for Comprehensive Corridor Management*. FDOT Report No BD-5506, Center for Urban Transportation Research, Tampa, Florida. 2004.

US 98 between SR 60A in Bartow, Florida, and East Main Street in Lakeland, Florida, is a four-lane divided highway with an abandoned railroad ROW running adjacent to the east side of the highway. The access management needs and requirements of US 98 vary significantly within the study area. From SR 60A in Bartow to the Polk Parkway (SR 570), US 98 is part of the Florida Intrastate Highway System (FIHS), which requires higher access management standards than does the remainder of the study corridor. South of SR 570, with the exception of approximately a 1-mile segment through Highland City, adjacent land is predominantly vacant. North of SR 570, adjacent properties along the US 98 study corridor are generally developed with commercial, industrial, or residential land-uses.

In 2001, as development pressures began north of the long-established city limits of Bartow on US 98 (Bartow Road), local government officials saw the need to take action to prevent access and congestion issues along the previously undeveloped corridor. The Polk County Transportation Planning Organization (TPO), the metropolitan planning organization for the region, drafted a Memorandum of Understanding in response to the TPO Board's recognition of the need to provide orderly and efficient access to a portion of US 98. The MOU led to a Corridor Access Management Plan for the facility.

The MOU, signed by the Florida Department of Transportation (FDOT), the City of Bartow, the City of Lakeland, and Polk County, first established the basis for the widening of US 98 to six lanes, provision of transit service, and development of a multi-use recreational trail along the US 98 corridor. These improvements are detailed in the Polk County 2025 Long-Range Transportation Plan. The MOU also outlines state and local objectives that can be met for the roadway through land development and subdivision regulation. Finally, the MOU discusses Florida Statutes in relation to corridor management. Section 337.273, Florida Statutes, provides that local governments may designate a transportation corridor for management by including the corridor in the transportation elements of the local comprehensive plan, and may thereafter adopt a corridor management ordinance to include criteria to manage the land uses within and adjacent to the transportation corridor.

The MOU then outlined four areas of cooperation:

- All three local government parties (the City of Bartow, the City of Lakeland, and Polk County) agreed to amend their respective comprehensive plans designating US 98/Bartow Road from SR 60 to East Main Street (in Lakeland) as the US 98 Transportation Corridor pursuant to Section 337.273, Florida Statutes.
- The FDOT would develop and adopt a Corridor Access Management Plan (CAMP).
- The local governments agreed to amend their respective land development regulation to implement the CAMP.

- All land development and permitting activities within the corridor would be reviewed by a committee comprised of representatives of all parties prior to the adoption of the CAMP.

A Steering Committee consisting of appointees from each party was formed to oversee the development of the CAMP after the adoption of the MOU in December of 2001. The CAMP was developed through a lengthy process that included a review of national and Florida examples, a review of local comprehensive plans' meetings with the public, and workshops with staff from the FDOT, the Turnpike Authority, the Cities of Bartow and Lakeland, and Polk County. Issues causing delay included lack of agreement between property owners regarding proposed median openings and a need for technical assistance on how to implement service road requirements in the plan. The document was adopted in accordance with Rule 14-97.004(5) by the Florida Department of Transportation on July 6, 2004.

While the FDOT's preference is to merely adopt a series of maps as the actual plan, local government Steering Committee members pushed for more details of implementation to be contained in the CAMP. Key to the usefulness of the final document is a series of tables that provide convenient reference regarding median openings and driveway connections that do not meet the standards for city and county staff. In addition, the CAMP contains recommended policies for local government comprehensive plans. These proposed policies address substandard driveways and joint access, as well as provision for service road ROW. These proposed policies specifically state:

“New and redevelopment proposals for properties with the US 98 Transportation Corridor shall be reviewed for conformity with the Adopted US 98 CAMP, including opportunities to close substandard driveways as identified in the CAMP and opportunities to promote shared or joint access”; and

“New or redeveloped proposals along US 98 (Bartow Road) between Lyle Parkway and DR 540A shall dedicate adequate ROW for the development of a continuous service road system as delineated by the City of Bartow and Polk County. ROW dedication for service roads shall be eligible for impact fee credits.”

The CAMP requires that all nonconforming driveways be closed at the time of redevelopment and further states, “...when parcels are too narrow to provide a driveway connection that meets the minimum spacing standards, cross-access easements should be required such that a shared use (joint use) driveway connection that meets the standards can be implemented.” Access to US 98 is provided via interim driveway connections to be removed at such time “the service road system is sufficiently developed to provide individual developments with access to and from US 98.”

4.4.2 WisDOT Participates in Local Comprehensive Planning

Excerpted from *Vermont Corridor Management Handbook*, Vermont Agency of Transportation. July 2005.

To preserve mobility and safety, ensure environmental protection, and support state-led smart growth efforts, the Wisconsin Department of Transportation (WisDOT) has begun over the past five to 10 years to work with communities on land use issues, improving the linkage between transportation planning, project development, and land use decision making. WisDOT's approach has largely focused on outreach to local communities within the corridor planning process as well as within each community's comprehensive planning process. The agency does not have formal authority to participate in the local planning process, but they are working to build relationships with communities in order to be able to provide input on an informal basis.

District staff are provided with information on the status of local comprehensive plan development in their areas and are encouraged to work with local governments to provide input into these efforts. (State legislation passed in 1999 requires communities to adopt comprehensive plans and establishes a tracking system to monitor plan development.) For example, as part of a corridor planning process for State Highway 21, an important east-west corridor connecting Lake Winnebago and the Fox Valley to western destinations, WisDOT District 3 staff have worked with communities along the highway to ensure that protections are implemented to contain strip commercial development and to preserve ROW for future expansion or realignment. In the Town of Omro, west of Oshkosh, WisDOT staff attended a local planning meeting and review, and commented on drafts of the town's comprehensive plan. In its adopted plan, the town reserved ROW for a limited-access bypass of their own, identified parallel and local street connections, and recommended zoning around interchanges to support commercial development.

For further information, see:

- WisDOT – <http://www.dot.wisconsin.gov/localgov/land/>; and
- State Highway 21 Corridor Study –
- <http://www.dot.wisconsin.gov/projects/d3/index.htm>.

4.4.3 US 183 Corridor Master Plan, Hays, Kansas

Excerpted from *Effective Strategies for Comprehensive Corridor Management*. FDOT Report No BD-5506, Center for Urban Transportation Research, Tampa, Florida. 2004.

Located in northwest Kansas, the city of Hays is the largest municipality in the region with a population of 20,000 residents. Within the City of Hays, U.S. Highway 183 is a four-lane road serving an intensely developed commercial zone with numerous signalized and unsignalized intersections. As early as 1997, the City of Hays, Ellis County, and the Kansas Department of

Transportation (KDOT) had entered into a Memorandum of Understanding regarding necessary changes to U.S. Highway 183 to improve the safety and operation of the facility.

In 1998, city, county, and state officials developed and adopted a Corridor Master Plan for US 183 augmenting a previous MOU “by defining parameters for transportation management, access management, land use and development characteristic.” General standards for corridor management were laid out for defined segments of the corridor specifically addressing planning, through zoning and site plan requirements and access, and operations, through retrofits and improvements. Notably, the Corridor Master Plan called for the creation of alternative access for existing and future development. The plan also specified implementation parameters including, “The City and County agree to adopt all necessary ordinances and/or resolutions and to take such legal steps as may be required to give full effect to the terms of this Plan.”

With support from city officials, KDOT identified the corridor as a “Protected Corridor” within the agency’s Corridor Management Plan in May 2000. The designation defines corridors “in need of an increased level of management to preserve capacity and functional integrity.” As stated in the Corridor Management Plan, US Highway 183 was designated “because of its critical role in north-south movement of people and goods in the region and because of the pressures of development in the city of Hays.” To formalize coordination efforts, KDOT implemented Kansas Statute (KSA) 68-169 that authorizes the Kansas Secretary of Transportation “to enter into written agreements with political subdivisions of the State for highway purposes, including establishment of access control.” This partnering agreement established a mutual commitment to manage the corridor, particularly in relation to access and ROW issues. Most importantly, with the previously adopted Corridor Master Plan in place, the roadway was eligible for state project funding under the System Enhancement Program and the Corridor Management Program.

A U.S. Highway 183 widening from I-70 north to 55th Street was funded as part of the State’s System Enhancement Program in which projects are selected based on potential economic impact, traffic volume, safety, and design. Funding responsibilities are shared by both state and local agencies. In 2003, the Hays City Commission passed Resolution No. 423 authorizing the City to participate in KDOT’s Corridor Management Grants Program that would outline funding sources for acquiring additional ROW and associated improvements to US 183.

Concurrent with the US 183 System Enhancement project, the City of Hays, Ellis County, and KDOT also worked to create alternative access along the corridor. Development pressures on the corridor north of I-70 required the City to devise alternative access approaches. Using KDOT corridor grant funding, the City will construct a reverse access road between 45th and 55th Street (Roth Avenue). Forty-eighth Street will also be extended to the east to intersect with the extension of General Hayes Road. The few businesses abutting US Highway 183 will gain temporary access through frontage roads along the roadway. By 2006, KDOT plans to remove the frontage road and allow access solely from the newly constructed reverse frontage access roads.

4.4.4 Zoning Overlay District, Bowling Green, Kentucky

Excerpted from *Vermont Corridor Management Handbook*, Vermont Agency of Transportation. July 2005.

In Bowling Green in southwestern Kentucky, the Kentucky Transportation Cabinet and the community had reached an impasse over the widening of Cemetery Road from two to five lanes, first proposed in the early 1980s to address congestion and safety issues on this heavily traveled road. Residents feared that the widened road, which serves as an important gateway connecting downtown Bowling Green to I-65, would be overwhelmed with strip development similar to Scottsville Road to the north.

Reviving the project in the mid-1990s, Cabinet district engineers worked with local stakeholders to select a new alignment for an arterial, redesign it as a four-lane divided boulevard, enact land use protections along the alignment through a zoning overlay district, and incorporate bicycle and pedestrian accommodations into the design. The overlay district, written by the city and county planning commission, specifies allowable uses, building design and landscaping features, and connections to the roadway and the shared-use path. The combination of design changes and land use protections allowed the project to move forward, and reconstruction of Cemetery Road was completed in 2004.

5.0 CURRENT METHODS AND PRACTICE IN CORRIDOR PRESERVATION

Despite the federal initiative to consider corridor preservation in transportation planning, the State of Texas does not have legislation that specifically addresses corridor preservation for long-term transportation corridors.

A survey of state government practices in corridor preservation conducted by the FHWA in 2000 found that there is a wide diversity in the CP activities and programs among state DOTs across the country (22). The study placed states into the following categories based on their level or degree of corridor preservation activities:

- states with formal CP programs,
- states with informal CP programs, and
- states with no CP program.

According to the report, states with formal CP programs typically have legislation that authorizes their DOTs to undertake corridor preservation and, in most cases, there are funds set aside to support such a program. States falling in the informal program category have no state level program per se, but work aggressively with local jurisdictions to use local platting and zoning authority for corridor preservation. Some TxDOT districts could fall into this category.

The 2000 survey included Texas in the final category, states with no program. Under this category, there is little or no state involvement and most, if not all, corridor preservation efforts are undertaken at the local level. However, since that time TxDOT has adopted new policies in the area of access management and ROW acquisition that improve the agency's ability in the area of CP.

This chapter reviews current practices, methods, and processes at the local and state level for acquiring, preserving, or protecting ROW for transportation facilities and corridors in Texas. The chapter includes case studies or examples from urban and rural TxDOT districts, small and large cities, counties, and extra-territorial jurisdictions.

5.1 TXDOT'S PROJECT DEVELOPMENT PROCESS AND CP

The project development approach used by TxDOT, as with most state DOTs, is the traditional sequential approach. Under the traditional approach, ROW acquisition occurs after a project's environmental document is final. The National Environmental Policy Act process, as described in FHWA's NEPA Regulations in 23 CFR Part 771, normally must be conducted and concluded with a record of decision or equivalent before Federal funds can be placed under agreement for acquisition of ROW (underline emphasis added) 23 CFR Sec 710.305, Environmental Analysis.

“As a condition of federal aid, the STD (State Transportation Department) shall obtain FHWA authorization in writing or electronically before proceeding with any real property

acquisition, including hardship acquisition and protective buying (see 23 CFR 710.5030).” [23 CFR 710.307, Project Agreement]

Most State DOTs, like TxDOT, follow federal regulations and guidelines for ROW acquisition on projects involving federal funds. Under NEPA regulations, land acquisition for ROW on a project-wide basis can not begin until the environmental process is complete, typically through a FONSI or ROD. Unfortunately, this process may take 3 to 5 years or more and during this time, as community growth and development occurs, the cost of ROW for a project may increase significantly above its initially estimated cost. 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.

TxDOT may conduct an environmental review for the early or advance acquisition of property as prescribed in 23 CFR Section 710.501–710.505 for the purpose of protective buying, hardship acquisition, and real property donations provided that an analysis and finding of a categorical exclusion has been conducted. In other words, TxDOT can, through advance purchase, acquire ROW for a future transportation project provided that the appropriate environmental analysis has been conducted.

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.

5.1.1 Environmental Clearance and the Project Development Process (PDP)

The environmental clearance process is incorporated into TxDOT’s Project Development Process Manual (23). The manual sets forth a description of activities by functional area involved in developing a project. It is intended to be used as a guide by TxDOT engineers and planners. Not all tasks or activities identified in the manual may be applicable to each individual project.

The manual outline, generally depicted in Figure 26, includes six chapters with each chapter representing a functional area or stage in the project development process – from identifying the project need and project authorization to letting the project for construction. Figure 26 shows that most of the stages of the development process take place concurrently. It also shows that stages are grouped into planning, project development, and construction phases. Key milestones in the process are shown in Figure 26 by markers at the beginning and/or end of each chapter/phase.

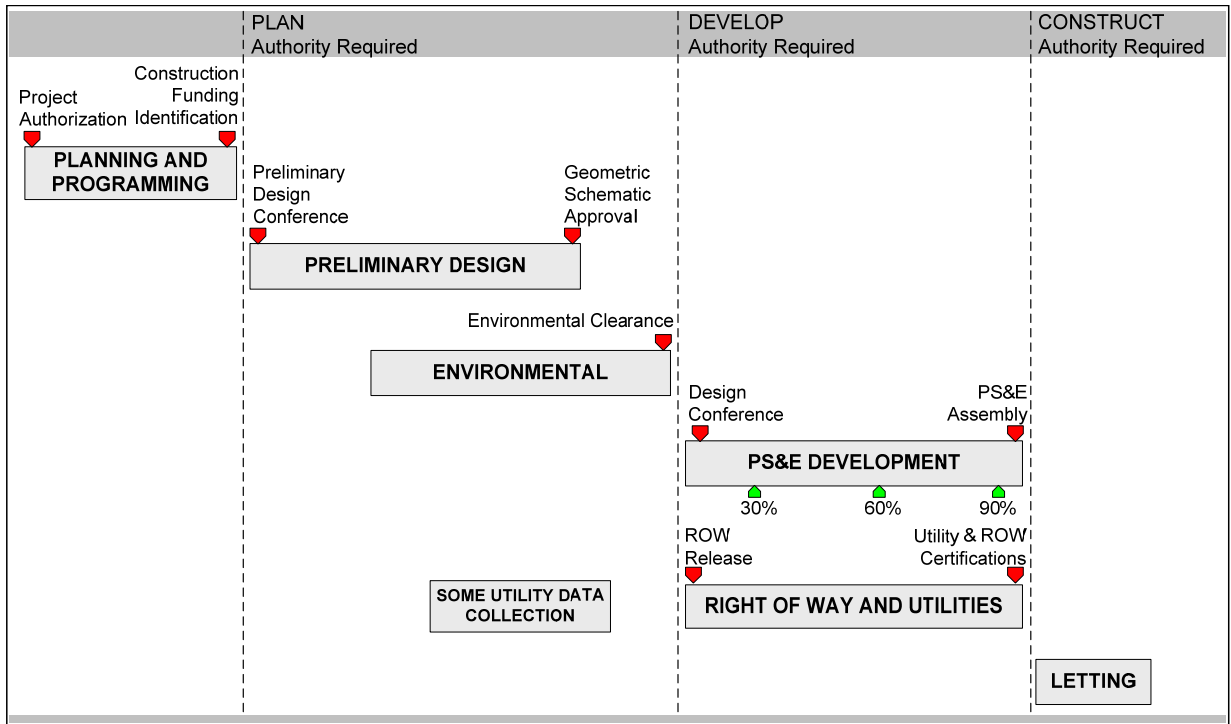


Figure 26. TxDOT's Project Development Process.

The first stage of the PDP is Planning and Programming. The key items in this stage are obtaining project authorization and identifying project funding. It involves identifying the project's needs and scope and evaluating the project's compliance with planning requirements, which may involve input and coordination with local and regional planning agencies. It also includes determining the extent of study required for the project such as the need for a route/corridor feasibility study, a major investment study, conformity with congestion management requirements, and evaluating the need for high-occupancy vehicle HOV lanes or tolling. The project is also placed on the TIP at this time. The final step in the Planning and Programming stage is identifying potential funding sources, including federal, state, local, and levels of funding authority (e.g., Priority 1 or 2), which are assigned based on the project's stage of development. Some of the early environmental analysis such as the 'purpose and needs' statement are also done as part of project initiation in Phase 1.

The second phase of TxDOT's project development process is Preliminary Design. The early steps of this phase include conducting a preliminary design conference, coordinating with stakeholders and collecting data related to project design (e.g., traffic, utilities, related plans or studies), and conducting a public meeting to obtain public input for design. Once data collection is substantially complete, the preliminary schematic step begins, which may include development and evaluation of conceptual alternatives alignments and typical sections. During this step, horizontal and vertical alignments are developed for each feasible alignment for use in determining a preferred alternative. For new location or added capacity projects, districts may request Design Division approval of the preliminary schematic prior to a public hearing. After a preferred alignment of the preliminary schematic has been determined, a geometric schematic having computed alignments is prepared along with preliminary plans and layouts. Among other tasks, this step includes performing hydraulic studies, determining ROW needs, and identifying

utility conflicts. The final step in the Preliminary Design stage is approval of the geometric schematic from the Design Division. Once approved, a public hearing is conducted, and changes in the schematic may be made based on public input.

The third stage of the project development process is Environmental, which for the most part, runs concurrent with the preliminary design phase. It includes identifying the project's environmental variables and planning an appropriate level of public involvement. The initial tasks of Environmental are reviewing the scope and staff requirements for project development, determining the public involvement needs, and developing and implementing the scoping process. Scoping determines the scope of issues in the environmental document and is required when an EIS is required. The second task is determining the environmental permit requirements related to authorities such as NEPA, endangered species, historic preservation, etc. The third task is preparing environmental documents (as determined necessary) such as an EIS, an EA, or a CE. Other key environmental documents (potentially prepared) include a section 4(f) evaluation, a hazardous materials assessment, ROW relocation impacts, noise and air quality analyses, and preparing preliminary environmental mitigation plans (if needed).

After the Preliminary Design and Environmental stages, a public hearing is held to get comments on the project location, design, and environmental impacts. Once public comments have been considered and incorporated (if necessary), final environmental documents are submitted to obtain environmental clearance. The project can not proceed to the next stage until environmental clearance has been obtained.

The fourth stage of the project development process is ROW Utilities. A 'release' to begin ROW work is provided once environmental clearance is obtained, the district ROW map is approved, and any Local Public Authority (LPA) agreements to contribute funds are in place (if necessary). Data collection for ROW and utilities actually starts at the beginning of the environmental stage. Key items collected include existing ROW limits and easements, ownership of abutting ROW and ROW to be acquired, as well as identification of utilities in existing and proposed ROW. Appraisals for ROW to be acquired are conducted in accordance with state and federal guidelines. The acquisition process starts once appraisals are reviewed and complete. The final task in this stage is obtaining ROW clearance and encroachment certifications. The ROW certification certifies the completion or completion date for ROW acquisition, while the encroachment statement certifies that the ROW is free of encroachments. Both of these certifications are signed by the district engineer and are included in the PS&E submittal letter for the project.

The fifth stage of TxDOT's PDP is Development of the Plans, Specifications, and Estimates (PS&E). To begin this stage, a design conference is held to review and/or change any basic design elements before commencing detailed design work. Early pre-design tasks include planning traffic control/construction sequencing, obtaining miscellaneous permits, addressing environmental mitigation details that need to be implemented during construction, and work on hydraulics that affect project alignment, bridge, and/or channel design. Once vertical and horizontal alignments are finalized, roadway design work begins, which includes areas related to earthwork, landscape and aesthetics, and developing plans and profiles sheets. With alignments finalized, ROW limits for projects requiring additional ROW can be determined and the acquisition project begun. Other key aspects of the PS&E stage is design for signals and illumination and design work for bridges, drainage, retaining walls, and other miscellaneous

structures. The final step of this stage is PS&E assembly, which involves producing a final set of all plan sheets, including general notes and specification sheets.

Most final PS&Es are submitted to the Design Division for review and processing. For projects having FHWA oversight, FHWA may be involved in PS&E review. Once funding and PS&E approvals are obtained, a request for bids is advertised and the project is let for construction.

5.2 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 7. 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, where as 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 7. 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/Advance 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		✓		✓
Official Mapping/Maps of Reservation		✓	either	either
Land Swapping			✓	
Abandoned Corridor Acquisition	✓	✓	✓	

5.2.1 Fee-Simple 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 advance acquisition.

Under current state law (§203.051 of the Transportation Code in Vernon's Civil Statutes), the Transportation Commission may authorize TxDOT to purchase through eminent domain:

- an interest in real property; or
- property rights including the right of access and the restriction in development rights for up to seven years that prohibits new development, modifications to existing developments, or subdivision of the property.

The Commission may authorize such a purchase only when it is necessary for a state highway to be constructed, reconstructed, maintained, widened, straightened, or extended. Furthermore, according to state statutes, all environmental documentation must be completed prior to exercising eminent domain proceedings.

5.2.2 Advance ROW Acquisition Methods

The exception to traditional acquisition is early or advance acquisition. Early acquisition means the acquisition of real property by a State or local government in advance of Federal authorization or agreement. In other words, the acquisition is in advance of the project's final environmental document. Under 23 CFR §710.501(a), it says 'the state may undertake early acquisition of corridor preservation, access management, or other purposes.'

Under 23 CFR §710.501–710.505, TxDOT may conduct an environmental review for the early or advance acquisition of property for the purpose of protective buying, hardship acquisition, and real property donations provided that an analysis and finding of a categorical exclusion (CE) has been conducted. TxDOT cannot use advance acquisition of property if the purchase is for protective buying that requires relocation, requires the taking of public parks, recreational areas, wildlife refuge, scientific area, or a historic site that is either public or private.

Taking of property for early acquisition requires that all environmental documentation for advance acquisition be complete. It only applies to the acquisition of a specific parcel and does not imply approval of construction of a project. Advance acquisition can not influence the final environmental decision regarding build/no-build or project alignment. If a project has an approved environmental document (EIS), a ruling of categorical exclusion is not required (Texas Administrative Code Title 43, Part 1, Chapter 2, Subchapter A, Rule 2.17 (e)).

Advance or ‘early’ acquisition can be used as a means to achieve some benefits of CP in the absence of a formal state program. TxDOT’s ROW manual includes provisions for four methods of advance acquisition, which include:

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

TxDOT can use advance acquisition of certain parcels prior to completion of a project’s final Environmental Impact Statement if a categorical exclusion has been obtained. If a project has an approved environmental document (EIS), 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. Advance acquisitions can not influence the final environmental decision regarding build/no-build or project alignment.

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 advance purchase TxDOT can acquire ROW for a future transportation project provided that:

- it is a necessary project;
- all appropriate environmental analysis has been conducted; and
- no relocations, taking of public parks, recreational areas, wildlife refuges, scientific areas, or historic sites are involved.

Currently the use of advance 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 advance acquisition methods. TxDOT can increase the use of advance 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.

Early acquisition methods can be used for qualifying parcels within a project or corridor, but not on a project-wide basis. Land acquisition for ROW on a project-wide basis can not begin until the environmental process has been completed.

5.2.3 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.

Options provide TxDOT with the ability to purchase property as specified in the terms of the 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, and
- the terms of the contract are likely to be economically favorable to the department (24).

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.

An option contract may not exceed a primary period of five years, but may be extended with each extension not to exceed five years (TAC 43 Part 1 Chap 21 (A) 21.16). 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/advance 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.

5.2.4 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 advance 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.

Local planning ordinances or, in some states, state legislation are used to encourage property owners to donate ROW for future transportation corridors. The voluntary donation of land allows a state to use the land’s fair market value as a credit toward matching shares in federal aid highway projects under the *Surface Transportation and Uniform Relocation Assistance Act of 1987* (ISTEA).

Acquisition of ROW by voluntary donation is an advance 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 may not 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. Such an approach would not require commission approval, and would allow cities and counties to apply the donation toward their local match for the project.

5.2.5 Advance Acquisitions by Other Entities

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 (TAC 43 Part 1 Chap 21 (A) 21.12).

Early Acquisition by Locals

Another possible approach for districts to acquire advance acquisitions would be for local jurisdictions to acquire needed ROW. For example, in cases where land that is located within a known future corridor is on the market, districts could work with local jurisdictions to 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). *These indirect methods of early acquisition of property for state highways 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

ROW 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 it is unlikely a local jurisdiction could require full dedication of ROW.

It would take a very large development, perhaps involving 100s if not even 1000 or more acres, to generate a large enough impact that could justify a forced dedication of a section ROW (perhaps 120 to 240 or more feet wide) that would be needed for a new TxDOT facility. Even if full dedication of the ROW could be justified, if a preferred alignment was not determined or if environmental clearance was not obtained, it would probably preclude a city from requiring dedication due to the uncertainties and potential legal implications. The more likely scenario is that the developer would wait for TxDOT to purchase the ROW from them before proceeding with any platting activity that could require conveyance of property for ROW dedication.

In cases where large, perhaps regional-scale, developments come in advance of a planned TxDOT facility and the facility is included on a municipal or county transportation plan, preserving the future highway ROW as a ROW reservation in development plans and plats may be an option that TxDOT and local jurisdictions could pursue through negotiation with the development.

5.2.6 Miscellaneous ROW Acquisition Methods

Other ROW acquisition methods include maps of reservation, land swapping, abandoned corridor acquisition, and conservation easements. Definitions of these methods are as follows:

- Maps of Reservation - There is no statutory/TxDOT authority for use of maps of reservation in Texas, although this method is currently in place in some states to preserve corridors for future improvements. The maps depict an official alignment for a planned transportation facility and they are filed with municipal or county governments to show the intent for a new facility. Once filed, locals must not grant approval of any development proposal for a prescribed time period. At the expiration of this time period, the state must either commit to the purchase or negotiate some type of agreement with the property owner(s). A state statute must be in place enabling the use of maps of reservation before a state DOT can use this ROW preservation method.

- Land Swapping - Land swapping can occur when a governmental agency determines that a development may encroach or threaten a planned ROW. Alternative pieces of land are offered from the agency's inventory of excess property to the developer in exchange for their parcel or parcels.
- Abandoned Corridor Acquisition – This acquisition is the purchase or regulation of transportation corridors that are or will be abandoned. Privately owned transportation facilities such as railroads, ports, and piers are examples of property that can be preserved for future transportation corridors.
- Conservation 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.

5.3 DISTRICT PRACTICE IN ACQUIRING AND PRESERVING ROW

Researchers contacted numerous TxDOT ROW administrators from urban and rural districts to review and compare acquisition practices being undertaken around the state. For all districts contacted, the traditional sequential approach of beginning ROW acquisition after environmental clearance was the standard practice being used. Some districts commented on tasks that can be done ahead of time (prior to clearance), such as getting a surveyor under contract, so that the process can begin immediately once clearance is obtained. Since all districts follow TxDOT's project development process manual, researchers focused questioning on the use of advance acquisition methods being used at districts.

It was found that smaller districts rarely, if ever, use advance acquisition methods – particularly options to purchase. Several districts responded that protective and hardship buys required extensive work-ups and required very experienced ROW staff, which they did not have. One rural district commented that advance buys were very time consuming because you had to get approvals and that most ROW offices were not very excited about them.

For many years the only advance acquisition tools available were hardship and protective buys. From a project-wide standpoint, these tools are of very limited value because they can only be used on qualifying parcels and not on a project-wide basis. Hardships or protective buys can be helpful, but cannot be used to acquire a significant number of parcels on a project-wide basis. The option to purchase is the best advance acquisition tool currently available (even though they are limited to only five years). Options were designed to be used when environmental had not been obtained. TxDOT attorneys have not been successful in the area of long-term options.

Attorneys in TxDOT's ROW division looked into the ability to apply 'advance acquisition' on a project-wide basis, but say it is not possible. Recent legislation adopted related to rail corridor preservation provided advance acquisition ability on a project-wide basis for rail

corridors, but not for highway corridors. TxDOT's General Counsel said that since it did not specifically mention highways, it could not be applied to acquire ROW for highway corridors. (call to Randy Ward and John Zimmerman, 4/27/07).

5.3.1 Dallas District

The Dallas District (Travis Henderson, 4/27/07) has executed options to purchase with landowners and done both protective and hardship purchases after a FONSI has been issued. The option to purchase has worked well for the Dallas District. They were the first district to use an option to purchase. Their hardship purchases are almost always for residential uses and not on businesses or commercial property. They use hardship more than protective buys. It was relayed that advance acquisitions were an extensive undertaking, requiring ample time and experienced ROW staff.

A 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. It was suggested that a better approach would be for TxDOT to go out and acquire property early for known future corridors in advance of project development and environmental clearance using 'arm's length' agreements with property owners. Under this approach, a schematic has not encumbered property, and landowners have not endured a lengthy process of public hearings/meetings and would be more open to talking to TxDOT about potential sale of their property. Various methods of acquisition or land preservation could be used, such as outright purchase, options to purchase, or purchase of development rights. By acquiring the property early, it significantly increases the likelihood of 'willing seller, willing buyer' transactions.

The Dallas District has also coordinated with local jurisdictions on needed ROW for TxDOT projects. For example, in cases where property was on the market or there was a willing seller, the district has coordinated with local jurisdictions to purchase such property with an agreement that TxDOT would (1) either purchase it from them once they had received environmental clearance or (2) allow them to apply it toward their 10 percent local match for the project.

Regarding donations, the Dallas district has rarely (if ever) received a simple donation of ROW. Usually property is donated for economic development reasons such as for an overpass, an off ramp, or a median opening. It was commented that a recent change by the legislature to require that land donations be approved by the commission has had a negative impact on the way they do business. Because of this change, in cases where property is to be donated, the district has the owner donate it to a local jurisdiction and it is applied toward their 10 percent match.

5.3.2 Houston District

The Houston District (David Bryant, 4/27/07) has done many advance acquisitions. They say they have done more hardship buys than protective buys. Hardship purchases were used along a section of IH-10 in the late 1990s on about 60 homes. They have not used options to purchase that often, but currently have a request in to use it along US 290.

For the US 290 project, the district has requested minute order authority. As of the writing of this report, a decision regarding this request has not been made. The Houston district also used options to purchase on sections of Grand Parkway (SH 199), FM 362, and FM 529.

5.3.3 Yoakum District

The Yoakum district (Bob Clarke, 4/27/07) has only done a few advance acquisitions. They have done two hardship buys, but have never done an option to purchase or a protective buy. They have received some donations, but these have been off-system. Mr. Clarke noted that it was more and more common to out-source ROW acquisition to land companies that are in the business of purchasing ROW.

For projects where the alignment is known and/or they are certain of parcels to be acquired, the district will go ahead and get a surveyor on board before environmental clearance so that once it is obtained they can proceed immediately. This is done in order to expedite the process. Many of the Yoakum District's projects involve the Corps of Engineers and are held up by the Corps due to mitigation for wetlands.

5.3.4 Bryan District

The Bryan District, (Sam Wilson, 4/27/07), like most smaller districts, almost always uses the traditional sequential approach in acquiring ROW for projects. They have not used any advance acquisition methods and had one acquisition by donation many years ago. For smaller districts like Bryan, with limited staff and resources, hardship and protective buys are too difficult to use. The Bryan district works with counties on ROW acquisition for on-system and off-system bridges.

5.3.5 Beaumont District

The Beaumont District (Sam Willy, 4/27/07) has done advance ROW acquisition. They have done hardship and protective buys, but only a few. Like other districts, hardships were used more for residents than for businesses. It is rare for businesses to be able to qualify for a hardship buy. One example of a protective buy in the Beaumont district was a convenience store that was destroyed by Hurricane Rita. ROW from this property was going to be needed for US 69 and the district used a protective purchase to acquire the property prior to the store being rebuilt.

The Beaumont district has never used an option to purchase. It was commented that an option was not a good tool for a corridor project if the alignment is not known, but it would be good for acquiring property for TxDOT facilities such as an AE's office or a rest area. It was noted that advance buys are very consuming because of the approval process, and that generally ROW offices are not excited about them.

The Beaumont District has worked and coordinated with landowners and local jurisdictions in acquiring and preserving ROW for existing and new alignments. On more than one project, agreements have been worked out whereby land needed for a project under development has

been deeded or donated to a city or county and subsequently applied toward the local match for the project.

5.3.6 Waco District

The Waco District, like the Bryan district, almost always uses the traditional sequential approach in acquiring ROW for projects. Its use of advance ROW acquisition measures has been limited to protective buys (Sheila Mills, 10/2/07). To date, the district has not used options to purchase or receive a donation as an advance acquisition. However, in October of 2007, the district was looking into using options to purchase 11 parcels along IH-35.

5.4 ROW ACQUISITION AND PRESERVATION AT THE LOCAL LEVEL

TxDOT may 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 (TAC 43 Part 1 Chap 21 (A) 21.12).

According to Section 8 of TxDOT's ROW manual, local public agencies may purchase (or reserve) ROW for a state project prior to completion of the environmental process without jeopardizing state and federal participation if certain conditions are met. Included is the condition that the acquired property must not influence the need for or location of the project. In effect, without environmental clearance, local governments may acquire property for a future project, but it is at their own financial risk.

Cities, by virtue of their ability to regulate land use and development, have a number of tools that can be used to (1) protect future transportation corridors from development and/or (2) acquire the ROW for future transportation corridors well in advance of construction. Cities may have opportunities to protect and/or preserve future ROW through:

- land use planning and zoning;
- land dedications in accordance with a transportation plan and subdivision regulations;
- advance acquisition (in coordination with a TxDOT district); and
- cooperative arrangements with districts such that TxDOT is notified of any subdivision or building permit request for property located within the proposed ROW. TxDOT or the city could then negotiate for an option to purchase or purchase of development rights. A city could acquire the property in advance, but it would be at their own risk of not being reimbursed.

Since Texas counties have less authority to regulate land use and development, they have fewer options available for preserving future corridors. A significant limitation to corridor preservation in counties is their lack of authority to adopt and enforce a transportation plan. As discussed in Chapter 2, except for a handful of specially designated counties, most counties do not have the authority to acquire or preserve ROW in accordance with a transportation plan. Methods available to Texas counties for corridor preservation include:

- preserve the future ROW through advance acquisition;
- preserve the future ROW through cooperative arrangements such that TxDOT is notified of subdivision plats and permit requests that may impact a planned TxDOT facility; and
- refuse approval of subdivision plats located within ROW of the planned corridor, or require that a statement be included on the plat or in each parcel purchase or lease contract that the land is located within a (future) transportation corridor (HB 1857).

5.4.1 City Survey Results on CP in Texas

As part of this research, cities across the state were surveyed to identify those with adopted plans and zoning in place and to collect information on previous and on-going CM&P efforts in Texas. Surveys were e-mailed to 126 cities and completed surveys were received from 51 cities (yielding a response rate of 40 percent). The survey included questions relating to both corridor management and corridor preservation, with about half relating to each particular topic. Responses to key questions relating to corridor preservation are shown in Table 8. For questions 1 and 3, two cities did not respond, thus the total responses were less than 51.

Table 8. City Survey Responses to CP.

Survey Question	Response	
	Yes	No
1. Is your city actively involved in corridor preservation?	32 (63%)	17 (37%)
2. Does your city have?		
An adopted transportation plan	46 (90%)	5 (10%)
An adopted comprehensive plan	47 (92%)	4 (8%)
Zoning	49 (96%)	2 (4%)
A driveway ordinance	37 (73%)	14 (27%)
3. Does your city require master development plans or master preliminary plats in the ETJ?	42 (82%)	7 (14%)
4. Does your city have a dedicated funding source to purchase ROW for future thoroughfares?	4 (8%)	47 (92%)

Figure 27 provides information relating to the types of methods being used by Texas cities in acquiring ROW for roadways. For each type of ROW acquisition method shown in the figure, it shows the percent of the cities (of the 51 surveys received) that indicated that they use or have used the particular method.

In response to the survey question, ‘How is ROW typically acquired for thoroughfares on your city’s transportation plan?’, the most common response was through platting and plat dedication with the next most frequent response being ‘city purchase’. Other responses to this question included donations, development agreements, and condemnation.

The survey included a question asking about the sources of funds the city uses to acquire ROW. This question provided the following options: general revenue funds, bond funds, specially adopted fees or taxes, state or federal funds, and others (to list). The number of ‘yes’ responses by option were as follows:

- 36 of 51 (71 percent) for general revenue funds;
- 32 of 51 (63 percent) for bond funds;
- 12 of 51 (24 percent) for specially adopted fees or taxes; and
- 21 of 51 (41 percent) for state or federal funds.

Other sources of funds listed in response to this question included impact fees, tax increment financing (TIFs), certificates of obligations (COs), ½ cent sales tax, county partnerships, and grant funds.

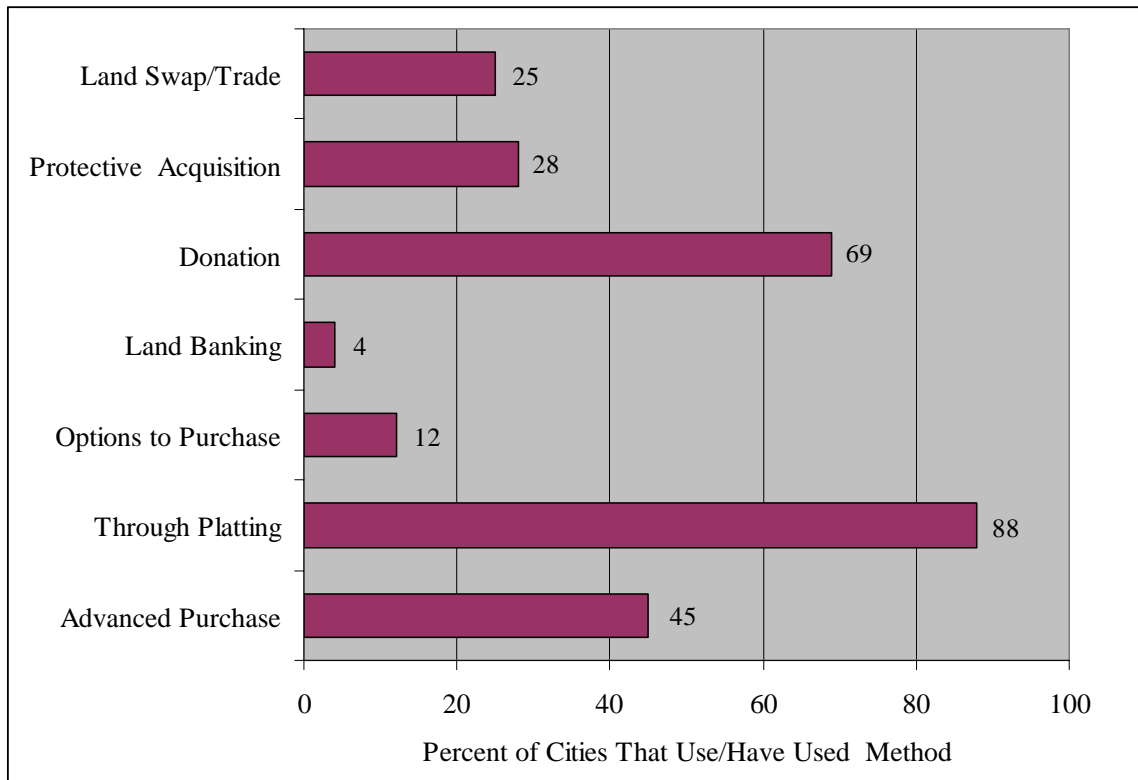


Figure 27. City Survey Response on ROW Acquisition Methods Used.

The survey to Texas cities included a question asking about the types of tools or incentives they have used to achieve CM or CP objectives. The results of this question are shown in Figure 28. For each type of tool or incentive shown in the figure, it shows the percent of the cities (of the 51 surveys received) that indicated that they use or have used the particular tool/method to achieve CM or CP objectives.

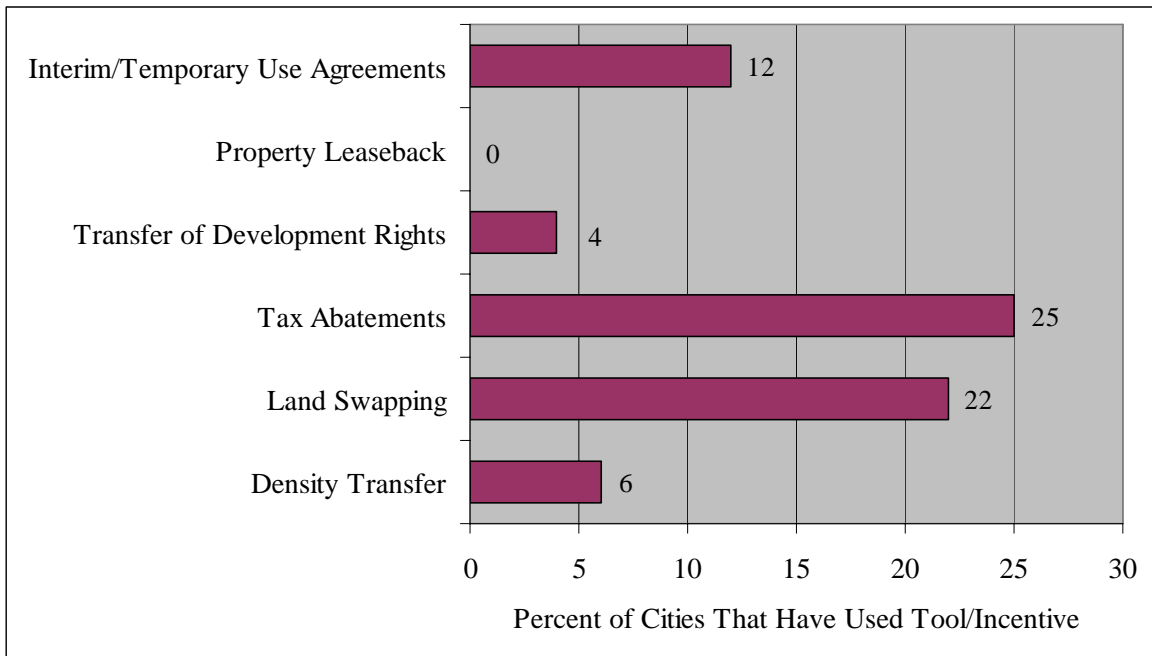


Figure 28. City Survey Response on Tools/Incentives Used for CM or CP.

5.4.2 National APA Survey on CP Practice by Local Governments

In January 2000, the American Planning Association (APA) conducted a survey of subscribers to its Planning Advisory Service to gather information on current practice in the area of transportation corridor preservation by local governments (25). APA received 307 returned surveys. Although non-government agencies were not directly asked to ignore the survey, the vast majority of the returned surveys were from government agencies, meaning the effective response rate was approximately 30 percent.

The survey, entitled Transportation Corridor Preservation: A Survey of Current Practice by Local Governments, found that 90 percent of all respondents indicated that their jurisdiction is actively involved in corridor preservation. The only significant variation was in jurisdictions with populations between 50,000 and 250,000, wherein 78.7 percent indicated that they are working on this issue.

Survey results also indicated that local government planning departments are primarily in charge of corridor preservation (72.6 percent). To varying degrees, jurisdictions of all sizes indicated that responsibility for corridor preservation is shared among agencies and departments. Overall, 23.4 percent of respondents indicated that responsibility is shared. Almost half of jurisdictions with populations of 250,000 to 500,000 indicated that responsibility is shared.

The list of other agencies and organizations that were cited as being primarily responsible for corridor preservation is lengthy. Engineering departments got at least 12 nods, and state planning departments, highway departments, parks departments, and engineering and planning consultants were also listed.

Survey respondents were asked what agencies and organizations they worked with on the corridor preservation issue. The most common response (70 percent) was the state department of transportation, followed by the metropolitan planning organization (46.5 percent). Almost two-thirds (64.8 percent) of respondents indicated that corridor preservation is addressed in the most recent version of the comprehensive plan. A review of the surveys indicated that many of the plans had actually been adopted since 1997. This suggests that corridor preservation may become a commonly addressed element in local government comprehensive planning.

According to the survey, the primary reason why local jurisdictions undertake corridor preservation is to avoid conflicts in the ROW (62.2 percent). Other common reasons include: (1) to implement the comprehensive plan (46.2 percent) and (2) to minimize land acquisition costs (44.2 percent). Meeting state planning requirements was less common but still significant at 14 percent. Other reasons provided by respondents for doing corridor preservation include aesthetic concerns, such as landscaping, view protection, and sign control; and many safety issues, including traffic conflicts, pedestrian safety, and mitigation of dangerous roads and intersections.

5.5 CASE STUDIES IN CORRIDOR PRESERVATION

5.5.1 Case Study: FM 2243, Leander, Texas

In the late 1990s city and county leaders in Leander and Williamson counties foresaw the need to widen FM 2243 within the city of Leander and the section east of the city to I-35 and Georgetown. As shown on its adopted transportation plan, the city desires to realign a section of FM 2243 in order to eliminate a two block offset at US 183, remove a current section out of the flood plain, and lengthen and remove curves from existing sections. An illustration of the existing and proposed realigned sections of FM 2243, as represented on the City of Leander's Thoroughfare Plan, is shown in Figure 29. Along with the realignment, the proposed improvements for FM 2243 call for widening the existing two-lane rural road to a four-lane divided urban section in one part and to a five-lane rural section in another.

TxDOT and the City agreed that a preliminary schematic was needed to provide a basis for an approximate new alignment and ROW, and an outside consultant prepared the schematic (Pix Howell, city of Leander, 4/27/07). TxDOT specified a 200- to 220-foot ROW width (170 foot minimum), but for a section west of US 183 the City and a developer only wanted a 120-foot ROW for an area designated as a transit oriented development (TOD). The City also preferred not to meet state requirements for addressing historic properties. These two issues ultimately led to the City taking over maintenance of the section of FM 2243 west of US 183, with the expectation that this section would no longer be designated as an FM road. TxDOT offered the City a loan to finance construction of the section through the TOD if adequate ROW is provided; but at this time it appears the City will proceed with the 120-foot ROW. TxDOT will make the improvements east of US 183 using its standards.

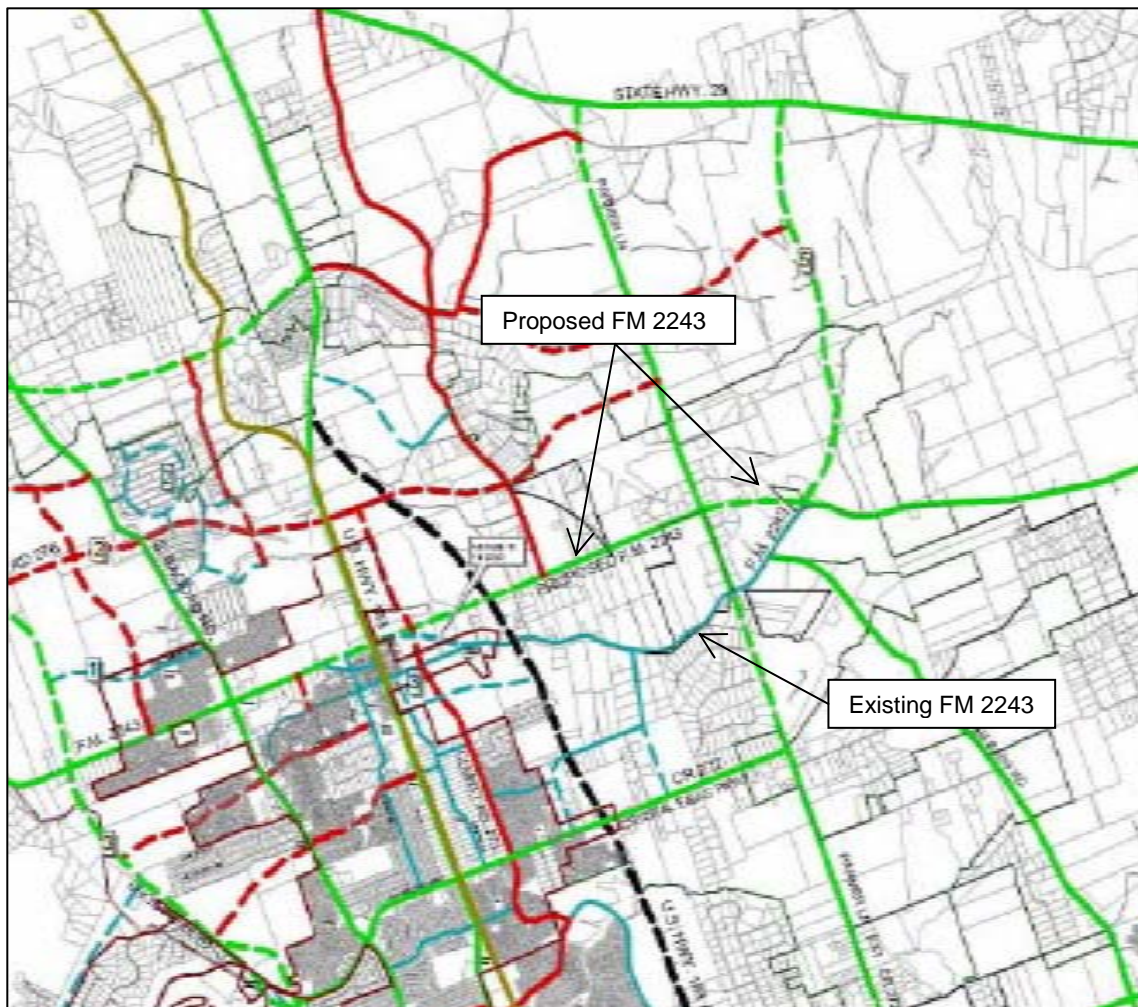


Figure 29. FM 2243 as Shown on the Leander Thoroughfare Plan.

TxDOT is currently performing a NEPA environmental study for the full length of FM 2243 to Georgetown. A NEPA record of decision has already been obtained for the US 183A interchange for which ROW is also being protected and obtained. Coordination about project specifics on an on-going basis between the City and the District has been limited to date. The city expects more coordination with TxDOT as co-stakeholders as TxDOT moves forward.

The City of Leander is using Austin’s design standards as the basis for ROW and AASHTO criteria for the alignment and is requiring ROW along the alignment as development occurs. However, TxDOT has concerns that proposals by developers that have been accepted by the City have not met TxDOT or AASHTO standards. Both the City and TxDOT agree there has not been coordination on specifics of dedications. TxDOT has approached the City about the ROW and design standards issues.

5.5.2 Case Study: Grand Parkway, Houston, Texas

The Grand Parkway, also known as State Highway 99 (SH 99), is a proposed 182-mile, tolled, and limited access circumferential highway that will create a third loop surrounding the greater Houston area. The project is under the direction of the Texas Department of

Transportation (TxDOT) and the Grand Parkway Association (GPA), a non-profit transportation corporation regulated by the Texas Transportation Commission (26). The Grand Parkway is divided into 11 segments that are being developed independently. Figure 30 shows the Grand Parkway around the greater Houston area, with each segment indicated by a bold letter.

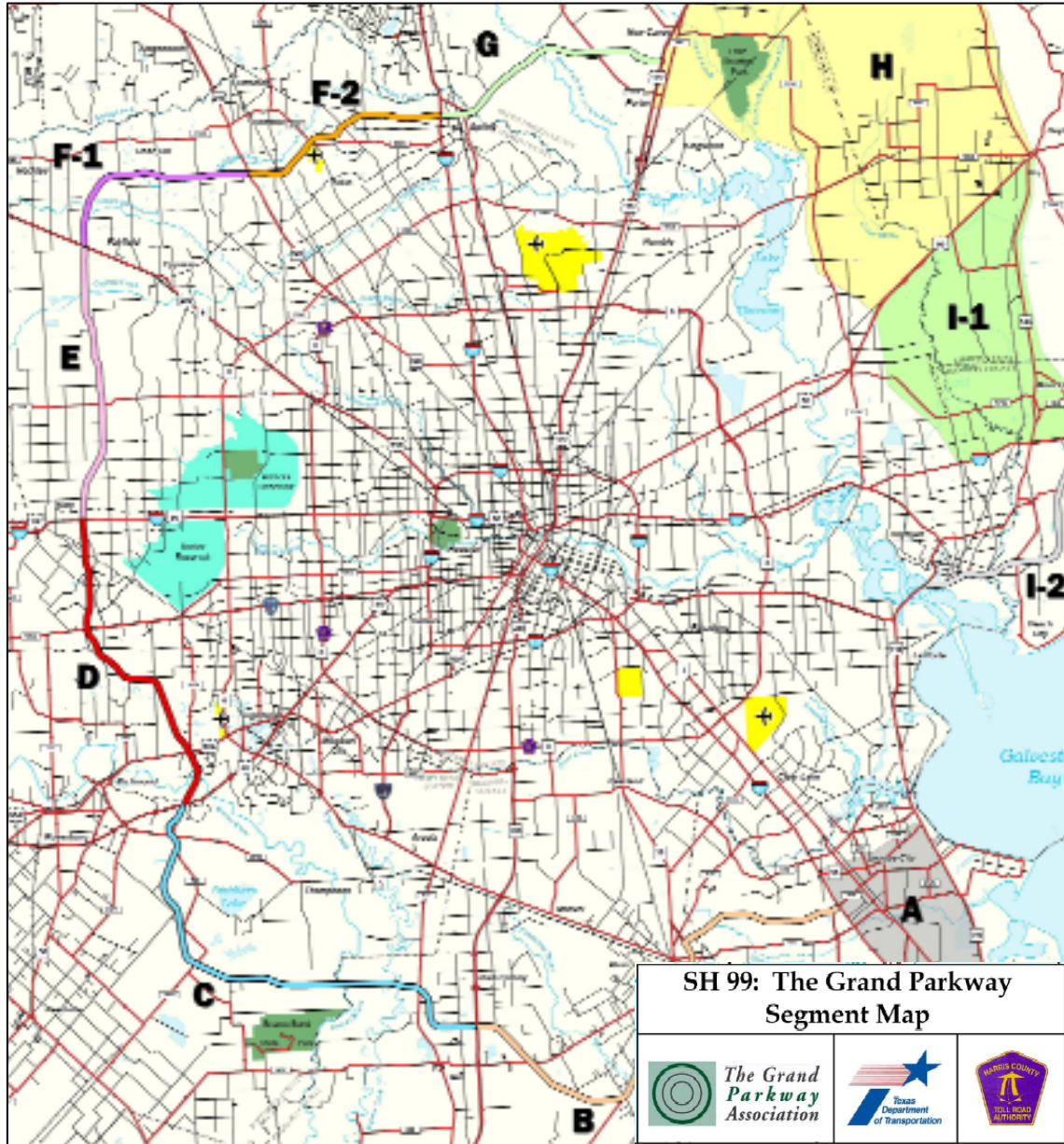


Figure 30. The Houston Area's Grand Parkway (SH 99) and Its 11 Segments.

The Grand Parkway is a key element of the 2025 Regional Transportation Plan, a transportation program developed by the Houston-Galveston Area Council. Once complete, the facility will traverse seven counties and provide access to major freeways, improve traffic flow, and provide an additional emergency evacuation route for the region. Currently, Segment D (US 59 S to IH 10 W) of the Grand Parkway is open to the public. Segment D is 19 miles long and is located on the southwest side of the greater Houston metropolitan area. The remaining segments are in various stages of project development. Segments H and I-1 are planned as a four-lane, limited access, toll facility within a 400-foot wide ROW.

The Grand Parkway Association initially operated on funds received from corridor property owners to develop initial alignments for which ROW was obtained primarily by dedications from the property owners. The owners also contributed funds for initial engineering and environmental documentation. Under the initial approach, once most of the ROW was obtained for a segment TxDOT would proceed with construction. However, after the initial segment was completed, the GPA changed its operation to more conventional public agency partnering due to public pressure to use a more traditional approach. The GPA is now operated on funds received from various sources including TxDOT, the Metropolitan Transit Authority of Harris County (METRO), and Harris, Fort Bend, Chambers, Galveston, and Brazoria counties. Now counties pay for initial engineering and environmental on most sections and TxDOT pays for construction, operations, and maintenance. Future sections will use tolls for at least a portion of the financing.

5.5.3 Case Study: President George Bush Turnpike, Plano, Texas

The President George Bush Turnpike is what was initially conceived as Loop 9, later SH 190, an outer loop around most of the Dallas-Ft. Worth area. This then-future highway was promoted by many of the outer suburban municipalities and counties at the time, including Plano, that realized the value of having this highway in their community. TxDOT developed a preliminary schematic, which became the basis for adoption of a preliminary alignment into the Plano thoroughfare plan. The City designated ROW for preservation to both preserve the corridor for eventual construction and to recognize the City responsibility for 10 percent of the ROW cost.

Much of the land along the alignment was then owned by Hunt Properties and the Hunt family as part of large land holdings. The City was able to obtain much of the land through dedication from those owners, who intended to or were developing along the corridor, and who recognized the value of having the highway in the corridor. Some smaller parcels were eventually purchased. The City also purchased some access rights along the ROW. Figure 31 shows the turnpike, which was constructed on ROW preserved by the City of Plano.



Figure 31. Portion of President George Bush Turnpike Through Plano.

5.6 CP PRACTICE IN THE U.S. FROM SELECT STATES

In 2000, the FHWA contacted all 50 states and numerous MPOs to find out about their most up-to-date activities on corridor preservation. The survey found diversity in programs and a wide range of activities in state and local corridor preservation efforts. The study categorized state CP efforts in the following three categories:

1. states with formal programs where there is legislation that authorizes the DOT to actively pursue corridor preservation;
2. states with informal programs where there is no formal state-level program, but the state works aggressively with localities to encourage corridor preservation activities through the use of local planning tools (zoning, permitting, platting, etc.); and
3. states where no formal state level program exists and most, if not all, corridor preservation efforts are initiated and implemented by the local jurisdictions, with little state involvement.

While the 2000 FHWA survey may now generally be considered slightly dated, research for this study finds that the above three categories are still appropriate for current CM&P efforts. The following paragraphs provide examples of CP authorities and approaches from across the U.S.

5.6.1 Florida

In 1988, Florida legislation authorized FDOT and local governments to designate transportation corridors for protection on an official map, based on which local governments were required to withhold development permits in mapped corridors for 5 years. The intent of

this statute was to freeze land values in anticipation of condemnation and prevent the increased costs of land acquisition if development permits were granted. In 1990, the state's official mapping powers were legally challenged and the Florida Supreme Court ruled that these provisions were unconstitutional and a violation of due process (27).

A 1995 Florida law called for designation of state highway corridors in local comprehensive plans and specifically enabled local governments to adopt corridor management ordinances. The intent of this law was to shift responsibility for preserving ROW for state highways from FDOT to local agencies because they are suited to preserve ROW, given their authority to manage land development provided under Florida's Growth Management Act. The 1995 statute change was a shift in policy brought on in large part due to a successful legal challenge in 1990 to the state's official mapping practices (1).

In 1996, FDOT enacted the Corridor Management Procedure, which guided FDOT districts on identifying corridors and encouraged local governments to designate state corridors for management in their comprehensive plans and adopted corridor management ordinances. The ordinances could accomplish CM through local zoning, subdivision regulations, access controls, and ROW preservation requirements. Local government participation in the procedure was made optional and state officials believe fear of legal reprisals have impeded local action related to this policy.

Several Florida DOT districts have prepared corridor access management plans with local governments and MPOs. Florida statutes include procedural requirements related to the development of corridor access management plans by FDOT in coordination with local jurisdictions. Under this policy, FDOT must notify affected local jurisdictions and abutting property owners prior to adoption of a plan, and hold a public hearing. After consideration of public input, FDOT in coordination with the local jurisdiction can finalize the plan. The process is highly interactive between FDOT, local jurisdictions, and property owners. Once adopted, the plan becomes official and is used by the FDOT district as a guide in connection permitting decisions.

5.6.2 Nebraska

Nebraska has legislative authority through its mapping powers to preserve 300 feet on either side of an alignment. The Nebraska DOT works with localities and the public to determine which corridors should be identified as priority corridors for preservation. After priority corridors are identified, they are filed with all permitting agencies so that when a local agency receives a permit request for construction along preserved alignments, it must submit the permit to the DOT for approval (28). The DOT has 60 days to accept or deny the request for development. The state and local government may also negotiate an agreement with the permit applicant so long as the agreement maintains the integrity of the corridor. If the permit request is ultimately rejected, then the state has 180 days to acquire the property. Nebraska heavily relies on its localities to negotiate agreements with developers to preserve ROW.

5.6.3 Idaho

In Idaho, corridors are identified and designated through the long range planning process. The state transportation board adopted a resolution to initiate corridor planning for project entry into the Statewide Transportation Improvement Program or similar implementation strategies. Regional planners work under the following nine-step corridor planning process:

- develop corridor work plan and public participation plan;
- research existing conditions;
- document existing and projected environmental/land use conditions in corridor area;
- analyze the projected future (20-year) travel demand and performance in the corridor;
- establish the relative importance of corridor needs through project goals;
- generate alternatives to meet the corridor goals;
- identify feasible alternatives;
- use comparative analysis and generate preferred list; and
- review all material for corridor plan document.

5.6.4 Illinois

The Illinois Department of Transportation established a grant program to help urbanized areas across the state fund planning activities that integrate land development, transportation, and infrastructure needs. The grants typically range from \$20,000 for a bicycle path study or intersection improvement, to \$500,000 for corridor-wide planning. Applications for corridor planning grants are evaluated based on how well they address the following goals:

- preserve open space;
- relieve congestion;
- promote cooperative inter-jurisdictional relationships;
- promote economic development policies;
- promote contiguous and infill development and redevelopment;
- promote development in areas with existing transportation and utility infrastructure;
- promote development in areas with currently available housing;
- enhance travel choices;
- create public-private coalitions;
- promote collaboration among local governments;
- promote development of industry, labor, public interest, and environmental organizations; and
- minimize infrastructure cost to taxpayers.

This program, administered by the Illinois DOT, provides \$15 million over 5 years to help local governments develop plans that integrate transportation and land use/development decision making.

5.6.5 Delaware

DelDOT's Corridor Capacity Preservation Program (CCPP) began as DelDOT policy in 1992 and in 1996 became law as Section 145 of Title 17 of the Delaware Code, establishing the CCP Program. The law required that roadway corridor nominations be a part of the Statewide Long Range Transportation Plan, allowing the public an opportunity to review and comment on roadway nominations. The following methods are used to preserve a corridor's capacity:

- identify best future designs,
- review permits,
- coordinate actions,
- manage access,
- refine site development plans,
- purchase access rights,
- purchase development rights,
- purchase property,
- develop individual projects, and
- provide consultation.

5.6.6 Kansas

In Kansas, state legislation allows KDOT to establish a policy and process that designates corridors on local district plans. The state's Corridor Management Program requires that localities designate corridors as input for the development of plans by the state. The four-step process for corridor designation is: (1) the district engineer designates corridor on District Transportation Plan; (2) an MOU is signed between the DOT and local officials; (3) corridor master plans are developed between the local district and state DOT; and (4) application for corridor approval of projects is made against other corridor projects in the state.

Kansas' approach places heavy emphasis on coordination among the DOT, MPOs, and local jurisdictions. The program is funded by the state and encourages MOUs between cities, counties, and KDOT in pursuing corridor preservation.

5.6.7 Minnesota

No legislation exists for corridor preservation; however, the *Interregional Corridor System Plan* was adopted and incorporated into the 1997 *Statewide Transportation Plan*. The statewide

plan establishes high priority corridors for preservation, funding, and expansion. The process for identifying corridors consists of a six-step process: (1) develop Regional Trade Center (RTC) hierarchy; (2) Corridor Evaluation; (3) Priority Corridors; (4) Performance Measures; (5) Improvement Strategies; and (6), Investment Strategies.

5.6.8 Michigan

The Michigan DOT used a tiered environmental approach to help preserve the M-59 corridor between Lansing and Detroit. The approach allowed access to federal funds and construction improvements to take place earlier than the typical environmental process. The Tier 1 work required a draft and final EIS that identified the corridor and to what extent other land uses (wetlands, residences, etc.) were impacted. It represented 70 percent of the work required in an EIS, but its advantage was that it allowed the local jurisdictions to acquire land ahead of schedule and preserve the corridor before a final EIS was approved. The Tier 2 work repeated Tier 1 with updates and included the final design. Michigan also established a revolving loan fund (a combination of state and federal funds) that is used for advance acquisition and hardship purchases. This fund is tapped into regularly to buy critical parcels as they become available.

5.6.9 North Carolina

The Transportation Corridor Official Map is a document adopted by the North Carolina Board of Transportation that allows the reservation of roadway corridors as provided by state statute. These 'Official Maps' place temporary restrictions on private property rights by prohibiting for up to three years the issuance of a building permit or the approval of a subdivision on property within an adopted alignment. The three-year reservation period begins when a request for development is denied.

5.6.10 South Dakota

SDDOT has taken a conservative approach relative to CP in that final construction plans are submitted at the same time as a 'Resolution of Necessity', which declares the necessity of land acquisition. This practice is not conducive to early ROW acquisition and corridor preservation as it places land acquisition just prior to project construction. SDDOT must rely on local jurisdiction police power authorities to implement state corridor preservation initiatives.

While no state statute exists for corridor preservation, SDDOT has adopted a new approach to managing key transportation corridors by minimizing costs to private and public sectors by planning ahead for future highway projects and coordinating closely with local government. In a March 2002 study that assessed corridor preservation techniques for South Dakota, authors Dye Management Group, Inc. had the following recommendations to establish a corridor preservation program:

- adopt corridor preservation policy.
- establish CP planning procedures that specify preservation corridors and formalize SDDOT's plan.

- map target corridors for protection.
- utilize early acquisition, less than fee-simple, and other techniques to protect corridors prior to programming in the STIP.
- develop procedures for performing ROW acquisition earlier for programmed projects.
- establish and assign duties for a proactive corridor preservation approach.
- as part of CP planning – inform, educate, communicate, and cooperate with local jurisdictions, landowners, developers, and utilities.
- apply environmental review best practices for corridor preservation.
- consider legislation to strengthen corridor preservation authority if warranted by barriers encountered in implementing project recommendations.

5.6.11 Utah

In Utah, the state cannot pursue corridor preservation in its own right because it has no legislation authorizing such activities and it needs an EIS prior to purchasing ROW. Instead, the state identifies corridors it wants to protect and then coordinates with cities to use their zoning powers and other land use tools to preserve the corridors.

The Utah Department of Transportation (UDOT) developed a revolving loan program that enables state and local municipalities to preserve future transportation corridors by acquiring ROW that meet certain eligibility requirements. Applications for funding are based on the preservation of bare ground, preventing imminent development, and alleviating hardship.

In 2005, the State of Utah passed a bill, Local Corridor Preservation Funding, that established a revenue source and approval process for preservation projects for certain county and municipal governments. It allows counties to impose up to a \$10 local option CP fund on motor vehicle registrations and requires that these revenues be deposited in the local CP fund. Under the funding bill, councils of government oversee project prioritization and are allowed to establish application procedures for use of the fund money collected by each county. Provisions of the bill also allow fund monies to be used by counties that are not within an MPO for countywide transportation planning. However, no more than 4 years allocation every 20 years may be used for planning studies.

In other CP efforts, master inter-local agreements have been used between UDOT, cities, and other public entities for rail corridor planning in Utah. The agreements coordinate planning and ROW acquisition between all entities and authorize the Utah Transit Authority to use UDOT's power of eminent domain in acquiring needed property for rail lines.

5.6.12 Wisconsin

In Wisconsin, a formal program for corridor preservation does not exist; however, state law enables WisDOT to practice corridor preservation utilizing a *project-by-project* selection process. A statewide administrative rule provides for localities to conduct corridor studies that identify priority corridors and address preservation issues. The studies have emphasized access

control and management as a tool to implementing corridor preservation. WisDOT focuses on outreach to local communities to provide input on an informal basis and they rely on local plans that designate access control and management to prioritize and implement their corridor preservation efforts. While five state statutes support corridor preservation, funding by the DOT is required for only two of the statutes. Wisconsin's CP legislation is similar to Nebraska's in that there is an administrative rule mandating that any new land recording (consolidation, platting, etc.) along a preserved corridor must be approved by the state.

6.0 RECOMMENDATIONS ON CORRIDOR MANAGEMENT AND PRESERVATION IN TEXAS

Local-state partnerships in corridor management and preservation (CM&P) should be developed in Texas to coordinate land use and transportation decision making between local jurisdictions and TxDOT. Since Texas does not have a statute in place authorizing a corridor preservation program, TxDOT should coordinate and partner with local jurisdictions and MPOs in transportation planning and the local development process to assist in corridor management and preservation.

TxDOT should 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. Adopted plans such as the statewide transportation plan, regional or MPO plans, and local comprehensive and thoroughfare plans should serve as the basis for corridor management and preservation throughout the state. TxDOT and local jurisdictions should consider corridor management and preservation a *process* and integrate CM&P programs or activities into:

- local comprehensive plans and development ordinances;
- MPO plans and work programs; and
- TxDOT policy, project development, and design.

Over the decades as TxDOT facilities have increasingly been impacted by urban growth and development, TxDOT has become increasingly involved in CM&P activities through facility design, access management, and various means of advance ROW acquisition practices. TxDOT should continue to use its ability and authority to undertake CM&P through provisions in its *Access Management Manual*, *Roadway Design Manual*, and *Right-of-Way Manual* relating to advance acquisition of ROW. Its authority to develop a statewide transportation plan should be used to advance CM&P objectives.

Through coordination and partnerships, TxDOT should use a multi-jurisdictional approach whereby CM&P strategies are tailored on a project-specific basis and the combined regulatory authorities from among all agencies and jurisdictions can be drawn upon to achieve district, local, and regional objectives in corridor management and preservation.

6.1 TXDOT INVOLVEMENT IN CORRIDOR MANAGEMENT

This section provides recommendations 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.

Recommendations on TxDOT involvement and partnerships in CM are provided in the following subsections.

- Municipalities with Comprehensive Plans and Zoning;

- Counties and the Extra-Territorial Jurisdiction (ETJ);
- Involvement in Local Planning and Development;
- Partnering to Identify and Prioritize Corridors;
- Promote and Encourage CM in Local, Regional, and Specialty Plans; and
- Use and Partnerships on CM Tools and Techniques.

6.1.1 Municipalities with Comprehensive Plans and Zoning

In municipalities with comprehensive plans and zoning, TxDOT should encourage and/or partner with cities to:

- include specific components, policies, or objectives on CM&P, including prioritization of corridors within their comprehensive plans;
- coordinate the intensity of land use with the functional class of the TxDOT facility;
- take advantage of the municipal land use and development regulations relating to access and site layout, and obtain ROW dedications/reservations as opportunities arise;
- develop zoning overlay districts along TxDOT corridors that include provisions transportation and ROW preservation, where needed;
- work with cities to establish development regulations to manage growth along TxDOT corridors; and
- work with cities on the development of corridor management plans.

6.1.2 Counties and the Extra-Territorial Jurisdiction (ETJ)

While land use and development may generally not be regulated in counties and ETJ areas, TxDOT should continue to engage in the following CM&P activities in these areas:

- access management;
- transportation planning and ROW preservation;
- monitoring of subdivision/platting activities along TxDOT corridors;
- monitoring and encouragement of greater minimum lot sizes and dimensions that are required in county and municipal subdivision regulations and that are required by counties for OSSF permits; and
- use of CM components in facility design to lessen development impacts and influence land use and inter-parcel connectivity.

TxDOT districts should work with counties in platting and subdivision activities along TxDOT roadways to prevent or address property subdivisions that are created which do not meet

TxDOT access spacing criteria. In order to help achieve compliance with TxDOT access management guidelines, districts should encourage and support minimum lot size and width requirements of county and municipal subdivision regulations in ETJs of cities.

In counties that have thoroughfare plan authority, TxDOT districts should work with these counties and the MPO (if applicable) relating to the inclusion and functional representation of TxDOT roadways on county plans.

Districts should coordinate with cities within their jurisdictions to encourage that municipal subdivision regulations, transportation plans, and allowable development regulations are being extended to, and applied in ETJs along TxDOT corridors as part of the planning and development process.

TxDOT, MPOs, and counties should encourage cities to apply and enforce all applicable subdivision regulations and related development regulations in their ETJs in order to help reduce the amount or likelihood of development in areas that may not have adequate infrastructure to support it. Municipal enforcement of transportation plans, access, and parkland dedication ordinances, and development agreements in ETJ areas can help make the costs of developing in cities and ETJs more equitable, which in turn, can help reduce sprawl (29).

In order to minimize the impacts of development on TxDOT facilities in ETJ areas, districts should encourage and support the use of concurrency or adequate facilities ordinances in municipal subdivision regulations that address the timing of infrastructure extensions and require developments in a city's ETJ to verify that adequate infrastructure to meet health and safety requirements are in place prior to approval.

TxDOT should encourage counties to adopt minimum lot size requirements for OSSF permits as a density control mechanism along TxDOT roadways in counties and ETJ areas that do not have adequate infrastructure or services to support urban densities. The state requires a minimum of one-half acre for OSSF, but TxDOT should encourage counties to adopt rules more stringent than those of the Texas Council on Environmental Quality (TCEQ).

Texas cities should confer and coordinate with counties and TxDOT districts whenever they are considering extension of municipal sewer service into an ETJ area that will in any way be served by county or TxDOT roadways. TxDOT districts and counties should discourage and potentially not support a city's extension of sewer service into an ETJ that would allow for urban densities, when the area impacted is served by rural designed county and/or TxDOT roadways. Such extensions circumvent the density control mechanism created by minimum lot size requirements for OSSF and facilitate sprawl and 'city' subdivisions with urban densities along rural county and state roadways.

Other possible opportunities for using CM&P tools or approaches along TxDOT roadways in a city's ETJ that TxDOT should support or encourage include:

- development agreements between local jurisdictions and developers in the ETJs, which establish land use controls and provisions for 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 ETJs. Once annexed, a rural density 'holding' zone designation could be applied to undeveloped areas lacking adequate infrastructure for urban development; and

- extension of parkland dedication ordinances into a city’s 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.

6.1.3 Involvement in Local Planning and Development

As part of CM activities, TxDOT districts and/or area offices should pursue early and continuing involvement as a partner in planning and development activities (e.g., subdivision, zoning, site plan review, access permits, and traffic impact studies). This involvement should be “standard business” and not an occasional activity. Figure 32 shows the typical local development stages in Texas. For developments to 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.

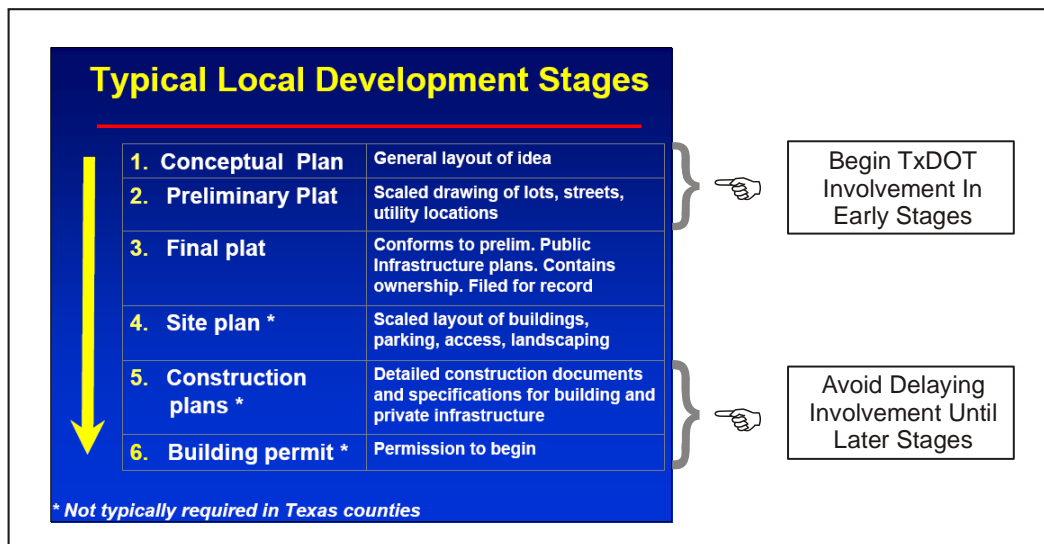


Figure 32. Early Involvement in the Development Process.

Activities in the local planning and development that TxDOT and local agencies should coordinate on are:

- the local site review and development process (continually as part of the 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 and work in partnership with local agencies to develop and implement the following 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 ordinance, whichever is more restrictive);
- CM activities for TxDOT projects planned for rehabilitation and/or capacity improvements; and
- zoning overlay districts along 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.

6.1.4 Partnering to Identify and Prioritize Corridors

TxDOT, in coordination with local jurisdictions and MPOs, should identify, (designate) and prioritize on-system corridors for management based on factors and criteria developed cooperatively among the agencies involved. Possible factors and criteria could 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 and 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 areas having cultural and historic significance; and
- corridors otherwise designated by TxDOT or local agencies for priority upgrades or treatment.

6.1.5 Promote and Encourage CM in Local, Regional, and Specialty Plans

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.

Local Comprehensive Plans

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

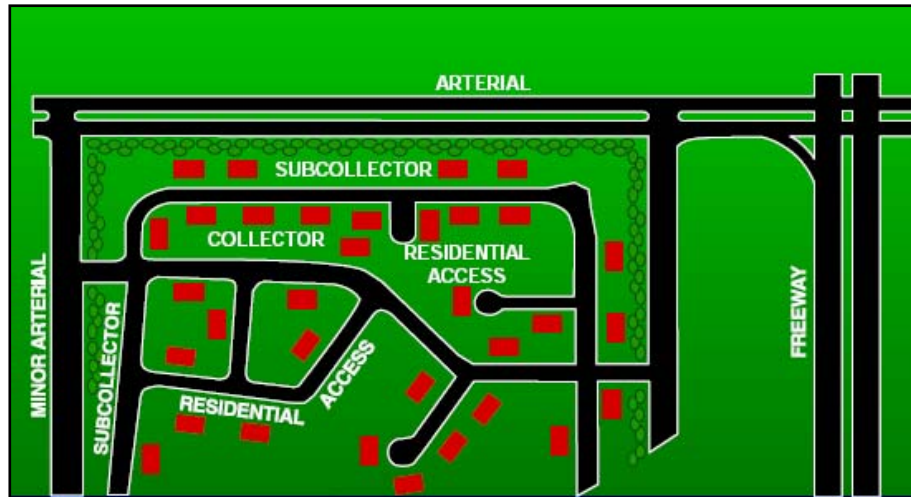
- corridor management policies;
- designation of TxDOT corridors for special treatment;
- prioritization of TxDOT corridors for improvement;
- specific corridor management projects; and
- special studies such as ‘small area plans’, corridor studies, or corridor management plans that can be adopted and incorporated into the plan.

Local and Regional/MPO Transportation Plans

TxDOT districts should encourage and promote that MPO and regional transportation plans contain components on CM, such as policies, 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 in Texas, if not doing so already, should facilitate coordination between local jurisdictions and TxDOT on CM and assist TxDOT and locals in educating the public and community leaders on the importance and benefits of CM. MPOs should include corridor management in their work programs.

Local and regional thoroughfare plans should 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 (typically TxDOT facilities) as shown in Figure 33. TxDOT should be a participant in local transportation planning and subdivision platting to minimize unnecessary minor street connections to state highways.



Source: Florida DOT Access Management CD Library, 2005

Figure 33. Functional Street Hierarchy: No Minor Street Connections to Arterials.

Corridor Management Plans

TxDOT and local jurisdictions should work together on development of corridor management plans for corridors that have been designated as priority for this treatment. Once a corridor has been designated for management, all cooperating jurisdictions should adopt resolutions and/or partnership agreements of some kind on their mutual commitment.

CM plans should include the coordinated application of local land use and development regulations in consideration of TxDOT roadway design, access, cross-section and ROW provisions. At a minimum, CM plans should address future medians, median openings or closures, future signalization, future cross-street intersections, and location of future access, along with closure or consolidation of existing driveways to meet applicable driveway spacing standards.

TxDOT, MPOs and local jurisdictions should use CM plans as strategic long-range planning documents to guide MPO/local policy and private development decisions such that they are coordinated with TxDOT's ultimate design and cross-section for the corridor. Key areas CM plans should address include:

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

Development of CM plans should be strongly considered for corridors within districts that are situated in the path of growth and development and corridors that will likely require widening and/or urbanization in the future. Each corridor management plan should be developed to address the unique conditions, circumstances, or issues of each corridor.

Corridor Access Management Plans

In lieu of a ‘full’ corridor management plan, TxDOT, MPOs, and local jurisdictions could also work together on development of corridor access management plans, which address driveways, public street connections, signalization, and medians along a TxDOT corridor. TxDOT access guidelines and/or local access ordinances should be used to evaluate the existing driveways for conformance to the most restrictive policy. Considering existing driveways, property lines, and TxDOT’s ultimate roadway cross-section, corridor access management plans should include:

- non-conforming driveways needing to be addressed as part of redevelopment or a future roadway improvement project; opportunities for driveway consolidations;
- the locations of future access for undeveloped parcels meeting access guidelines;
- future median openings or closures of existing medians;
- locations where cross- or shared-access easements should be required as part of the development process in order to meet driveway spacing guidelines;
- inadequate driveway design and site circulation problems that should be addressed with a future improvement project; and
- locations of future frontage or backage roads.

Corridor access management plans should be adopted as policy by all partnering agencies and used as a guide for development along the corridor. The results of the plan could also be incorporated into a zoning overlay district, which will provide cities increased authority and discretion in requiring that the plan be implemented as development occurs.

6.1.6 Use and Partnerships of CM Tools and Techniques

This section provides recommendations for the methods and techniques that can be used for corridor management.

Access Management

TxDOT should address elements of access management in planning, project development, ROW acquisition, and design for improvements to existing facilities and construction of new roadways. Districts should coordinate with cities and counties and review all platting and subdivision activity along state roadways in order to prevent parcels from being platted that can not meet TxDOT’s spacing criteria. In instances where spacing distances differ between

TxDOT's criteria and acceptable local access regulations, the more stringent of the regulations should be applied.

TxDOT should revise its access policy to allow for a review of existing access when a significant structural change or site enlargement is planned (e.g., requiring a building permit) or when a change to a more intensive land use is under consideration. Through their local development regulatory authority, local jurisdictions should require that access to non-conforming properties 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; or
- change in significant traffic generation has occurred.

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 should 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 can be considered at the property line farthest from the intersection. In such cases, TxDOT and local jurisdictions should consider:

- 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 requirements related to corner clearance should be included in local 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 or TxDOT engineer;
- minimum lot size requirements and/or land use limitations for corner parcels through zoning; and
- out parcels must obtain access internal to the site with no direct access to the public roadways.

Acquisition of Access Rights

Acquisition of access rights (TxDOT ROW Manual, Section 15) is a CM method that TxDOT should continue to use for new highways and new alignments as well as on upgrades to existing highway facilities. Acquisition of access rights is a CM tool that should be used or considered:

- 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.

Acquisition of access rights 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.

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

TxDOT districts and local jurisdictions should partner on median planning, policy, and installation. Ideally, corridor management plans should be used for median planning and stakeholder involvement. MPOs and local jurisdictions should support TxDOT on state projects where medians are planned and needed. Where possible, they should install raised or divided medians on urban or suburban corridors ahead of development to influence more orderly development patterns and increase or force the use of inter-parcel connections (e.g., cross-access) between properties.

TxDOT, MPOs, and local jurisdictions should educate community leaders on the importance and long-term benefits of medians. Presentations and educational materials should be provided to local community leaders on the importance and long-term benefits (safety and economic) of medians. Educational materials, such as videos available from TRB or certain state DOTs, should be presented and discussed at MPO policy and/or technical committee meetings, city council meetings, and commissions of (urban) counties.

Cities and 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.

When a full median opening can not be permitted, a directional median opening should be considered as a possible option. In some situations, a restrictive median, in lieu of a fully opened median, could possibly be a compromise option. TxDOT districts, cities, and counties should require a detailed traffic study to determine the safety and suitability of restrictive medians. Figure 34 shows examples of restrictive median concepts, and Figure 35 shows an example of a left-turn in-only median design, which may also be known as a hooded left turn.

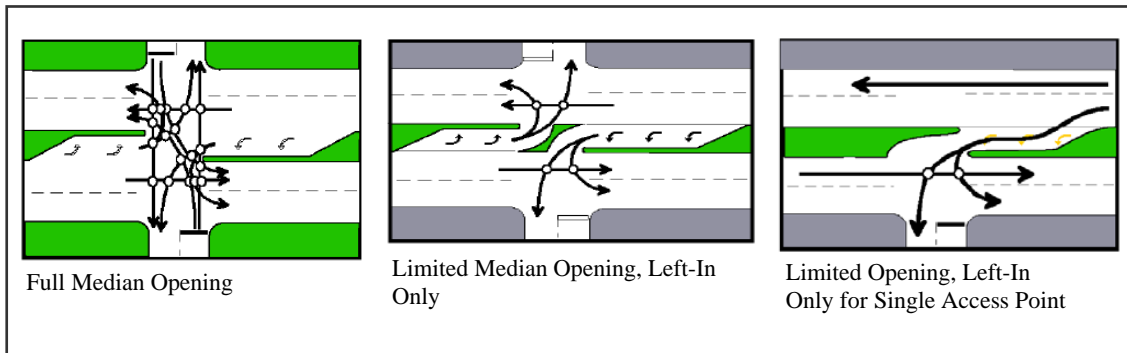


Figure 34. Comparison of Full and Limited-Opening Medians.



Figure 35. Hooded Left Turns, Commercial Blvd, Ft. Lauderdale, Florida.

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.

Signalized Intersection Location and Spacing

Potential for future signalization should be considered in local street network planning and in locating and permitting driveways and median openings along TxDOT roadways.

Using corridor plans, TxDOT and local jurisdictions should work together to cite future signal locations and median openings ahead of development. The plans should take into account the local street network, property lines, future land use, and topography and also address non-signalized access to the roadway from private access and public streets. 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.

Arterial Frontage and Backage Roads

TxDOT and local jurisdictions should encourage, promote, and where possible require the use of arterial frontage and backage roads. Such roads serve to consolidate access in lieu of each individual parcel taking access to a major thoroughfare. The use of arterial frontage and backage roads should be considered:

- early as part of development planning and where possible, incorporated into the master development plans; and
- as a means to meet access, signal, and corner clearance spacing requirement criteria.

Lack of adequate separation between the frontage road and the arterial at connector intersections can cause vehicle queues that extend back through the intersections. Careful attention should be given to the design and placement of frontage roads along arterials in order to avoid creating operational problems at intersections.

6.1.7 Local Development Regulations to Promote

Lot Dimensional Requirements

As part of their involvement with local jurisdictions in the development process, TxDOT districts should encourage platting and development of deeper and wider parcels along TxDOT corridors in order to facilitate improved access spacing and internal site circulation. Ideally, minimum lot frontage amounts along a corridor should be at least the same as or more than TxDOT's access spacing guidelines – granted, in developed urban and suburban areas, this will be difficult to achieve.

Cities in Texas should require minimum lot depths in zoning districts (where appropriate) along corridors as a means to facilitate improved site circulation and reduce the likelihood of 'strip' commercial development.

In consideration of TxDOT's access spacing guidelines, districts should also encourage cities within their districts to establish and require lot dimensional requirements along TxDOT roadways within their ETJs. While cities cannot directly regulate density or the number of units per acre in their ETJs, they can establish minimum lot sizes and widths and ROW dimensions.

Partner on Corridor Zoning Overlays

TxDOT districts should be involved with cities on the development of zoning overlay districts along TxDOT roadways. Zoning overlays can be an excellent tool for cities and TxDOT to partner and practice CM. TxDOT should partner with cities in the creation of zoning overlay districts that, along with land use, development, and aesthetic components, also include provisions that benefit transportation and access. Key items and regulations that should be included in a TxDOT corridor overlay include:

- adoption of an access plan that 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;
- aesthetic controls such as parking screening (landscaping or berms) between parking and public street ROW; enhanced sign or billboard regulations; and
- building orientation (e.g., primary structures should face the front of the lot).

Encourage Enhanced Setbacks

In working with cities on development planning or corridor overlays, TxDOT should encourage cities to establish enhanced building and parking along TxDOT roadways that are major community thoroughfares. Increased building and/or parking setbacks (within reason) should be used in CM plans and should be a key component in corridor zoning overlays. Increased setbacks along a corridor can help reduce property damage and costs if the roadway is widened and corridor aesthetics are improved. Increased parking setbacks can result in increased driveway throat lengths.

Under normal circumstances, setbacks should only be based from the existing ROW line. However, if TxDOT has a schematic prepared that 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. TxDOT should provide schematics to local development review staff as early as possible.

Encourage Regulation of Driveway Throat Length

In the majority of cases TxDOT has little or no control over driveway throat length since typically it requires regulation of site or driveway design outside of TxDOT ROW. In light of this, TxDOT districts should encourage cities to establish regulations on driveway throat length using one or more of the following general approaches:

- on the basis of a roadway's functional classification (as shown on an adopted transportation plan);

- 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.

In particular, TxDOT should encourage cities to use their discretionary authority, where possible, to require greater throat lengths for shopping centers, big box retailers, and other major traffic generators along TxDOT roadways.

The use of driveway throat length regulations along a corridor benefits traffic safety, flow, and aesthetics. When applied in site design and layout, it can 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 TxDOT’s ultimate cross-section for the roadway.

Encourage Internal Access for Outparcels

TxDOT districts should encourage cities to establish development policies and regulations that require that outparcels take access internal to the development, in lieu of direct access to a TxDOT roadway.

Access to outparcels should be internalized and incorporated into the layout and circulation of the overall development or shopping center. Districts should encourage cities to incorporate ‘unified access and circulation’ requirements for developments containing outparcels into their development policies and ordinances. Cross-access easements or blanket-access easements covering the entire development should also be considered by local development review staff, and encouraged by TxDOT, as a means to implement internal and unified access and circulation for development along TxDOT roadways.

In cases where land is being subdivided or consolidated to create a development with outparcels, access easements should be required in (master) development plans and (master) preliminary plats, which provide for unified access and circulation to and between all current or future parcels for all phases of a development.

6.1.8 Use Local Subdivision Regulations to Benefit TxDOT

Key elements of CM and CP such as access and ROW dedication or preservation should be addressed along TxDOT roadways as part of the subdivision and platting process. TxDOT should encourage and promote the use of local subdivision regulations, in combination with zoning, to control lot size and depths as a means to assist implementing TxDOT’s access policies and guidelines.

Encourage Local Street Connections Adjacent to TxDOT Roadways

TxDOT should support and encourage connections between local streets on the street network adjacent to TxDOT facilities. Districts should be involved in municipal and county platting and subdivision activities to encourage that connections between local streets and

neighborhoods adjacent to TxDOT facilities are made. Districts should also provide input on local streets that are planned to connect to TxDOT roadways to ensure that connections conform to accepted roadway spacing standards relative to (1) the functional class of the connecting street and (2) the regional function of the TxDOT roadway.

TxDOT districts, cities, and counties should strive to lay out local streets paralleling a TxDOT corridor in order to reduce the need for direct access to the corridor and remove local, short trips from the facility.

Acquire ROW Dedications and Reservations through Platting

Cities and counties with adopted Transportation Plans and TxDOT districts should work together to, where possible, to get needed TxDOT ROW dedicated or reserved through the local platting process. When available, TxDOT design schematics showing future back of curb and future ROW lines should be provided to cities and counties for use in their processing plats and site developments along TxDOT roadways.

Municipal and county thoroughfare plans should include TxDOT roadways in order that ROW can be dedicated for TxDOT facilities when:

- additional ROW is needed in order to gain compliance with an adopted municipal or county thoroughfare plan, or possibly a TxDOT schematic; or
- the amount of ROW dedication is roughly proportional to the impact of the development.

Cities and counties in Texas with adopted Transportation/Thoroughfare Plans should make it common practice to require ROW dedication and/or reservation of ROW along state facilities (when needed for compliance to an adopted plan) as part of their platting process.

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.

In cases where the impact of a development may not justify dedication of ROW along TxDOT roadways, cities and counties should pursue a reservation as a possible (negotiated) compromise option. ROW reservations may 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.

Request Joint and Cross-Access Easements

When property is being subdivided into frontage amounts that cannot meet adopted driveway spacing criteria (TxDOT or local), TxDOT should request and encourage local jurisdictions to require access easements in order that proper spacing can be achieved. As part of their involvement in the local development and platting processes, districts should encourage cities,

and in some cases counties, to use their authority to require access easements along TxDOT roadways in order to comply with TxDOT's access spacing guidelines.

In most cases, cross-access easements should be situated parallel to the street ROW line and are commonly located in parking aisles or internal circulation roadways. Shared access easement should be centered on the property line between two abutting parcels, which allows these parcels to share a single driveway. A shared access easement should begin at the ROW line and should be drawn large enough to encompass internal turning movements associated with the driveway.

Requirements on driveway design and throat length should be considered in determining the location and configuration of cross or shared easements to be included on plats. The use of increased driveway throat lengths can result in cross-access easements being located further into the site.

Partner on Operational Measures and ITS

As part of corridor management, TxDOT and local entities should partner in operational strategies to enhance safety, progression, and operation along TxDOT corridors. TxDOT and cities should coordinate on signal operation and timings as well as compatibility of signal equipment and other equipment for potential ITS applications. In urban districts, TxDOT, local jurisdictions, and other transit/transportation agencies should consider implementation of ITS technologies for automated data collection, signal timing, surveillance for incident management/emergency response, and other corridor performance monitoring purposes.

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.

6.2 TXDOT INVOLVEMENT IN CORRIDOR PRESERVATION

This section provides recommendations to TxDOT on general policies, approaches, and techniques that can be used for TxDOT's involvement in corridor preservation.

Some recommendations are predicated on existing state statutes, TxDOT and federal regulations or policies, or local authority, while others will require changes to TxDOT policy and/or state statutes to accomplish.

6.2.1 Develop a Corridor Preservation Strategy

TxDOT should develop a corridor preservation strategy that involves working with cities and counties to preserve future transportation corridors prior to environmental clearance. The strategy should identify property needed for ROW early in the planning and project development process, and use a combination of local and state authority to protect or preserve ROW using processes and methods that would not influence subsequent environmental work or project alignment. The strategy should be flexible and draw on any and all fee-simple and less than fee-simple ROW preservation and acquisition measures in a coordinated approach whereby TxDOT districts, local jurisdictions, and other transportation agencies coordinate on the best approach

and measures to use on a project-by-project basis considering their combined authorities, regulations, and funding abilities.

6.2.2 Establish a Multi-Jurisdictional Approach

TxDOT should use a multi-jurisdictional approach to corridor preservation. Although TxDOT has a number of tools to use in preserving future corridors, TxDOT should seek assistance from the MPOs and local jurisdictions (cities and counties) for preserving and protecting future TxDOT corridors. The separation of powers and overlapping jurisdictions dictate that corridor preservation should 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.

The multi-jurisdictional corridor preservation approach should be developed as an on-going process that is incorporated into state, local, and regional plans and policies, which can draw upon the full range of state and local government powers and tools available. The approach should be integrated into the TxDOT project development process and be addressed continually as part of the local subdivision and development processes. Partnerships between TxDOT districts, cities, and counties should serve as the underlying basis for corridor preservation activities.

Within TxDOT districts and local entities, positions within each agency should be designated with the responsibility of pursuing CP and partnerships as opportunities arise. Corridor preservation champions should be established to serve as identified contact persons and liaisons for coordinated CP activities and partnerships.

TxDOT districts should initiate discussions with cities and counties regarding incorporation of a CP mindset and activities into their current working relationships. Districts should take the lead in establishing a program and process for working with local governments. Tools and techniques available to the local governments for corridor preservation should be discussed and outlined, and a process to facilitate a comprehensive and coordinated corridor preservation effort should be developed.

6.2.3 Identify and Prioritize Corridors for CP

A method to identify and prioritize corridors for protection should be adopted within each district and/or MPO and incorporated into the normal planning process.

Corridor Identification

Where possible, project need, facility type, and general location should be identified early in the planning stage prior to project development.

Within MPO planning areas the need, location, and type of new facilities should be identified through the development of the Metropolitan Transportation Plan (MTP). During development of the MTP the need for the project and feasible alternatives should be identified, and sufficient

analysis should be performed to determine a list of preferred alternatives. The 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, a process should be established that narrows the alternatives to those that will satisfy the need and meet the area goals and objectives.

Outside of MPO planning areas, identification of corridors should be a part of the development of the statewide long range transportation plan. TxDOT districts should work with counties, cities, and TxDOT divisions to identify corridors for preservation. Where 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 Trans-Texas Corridor plans) should be used to assist in planning and corridor identification. 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

Once corridors have been identified for preservation during planning, they should then be prioritized. Inside MPO planning areas, the prioritization should 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 factors such 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.

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, they should 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

TxDOT districts and MPOs should prepare maps that illustrate designated corridors identified for protection. Separate maps could be developed for each TxDOT district and MPO area, and/or developed to reflect the anticipated time frame (e.g., 5-year, 10-year, and 20-year preservation) for each corridor. Mapping corridors identified for preservation should be used as an information and communication tool between TxDOT and the local governments involved in the process. Importantly, all maps should include an obvious notation that clearly states that they are not ‘official maps’ or maps of reservation, but rather maps developed for general coordination purposes 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 (if applicable) and have been through early environmental review and public involvement processes.

Early Planning Level Environmental Review

Corridor preservation for future alignments should be undertaken many years in advance of project design and completion of the EIS. In order to address corridor preservation within existing environmental requirements, TxDOT should:

- change its project development process to incorporate environmental review during the long range planning process; and
- consider using a staged or tiered environmental process on a project-by-project basis.

TxDOT districts in cooperation with MPOs should follow provisions set forth in SAFETEA-LU that require some environmental work to begin in long range transportation planning. These include environmental ‘consultation’ and ‘mitigation’ provisions that MPOs should adhere to for MPO and statewide plans. The provisions should be used to address and resolve potential issues early in the planning process and assist in achieving corridor preservation objectives.

TxDOT should work with MPOs and begin some preliminary environmental work in the MPO planning process. Districts and MPOs should conduct early planning level corridor or subarea transportation studies to address NEPA requirements such as:

- purpose and need;
- preliminary screening of alternatives;
- preliminary identification of environmental impacts and mitigation; and
- input from resource agencies that should be included as part of these early planning studies.

Figure 36 shows the long range transportation planning process relative to TxDOT’s project development process and illustrates how some environmental work should begin earlier in the planning process.

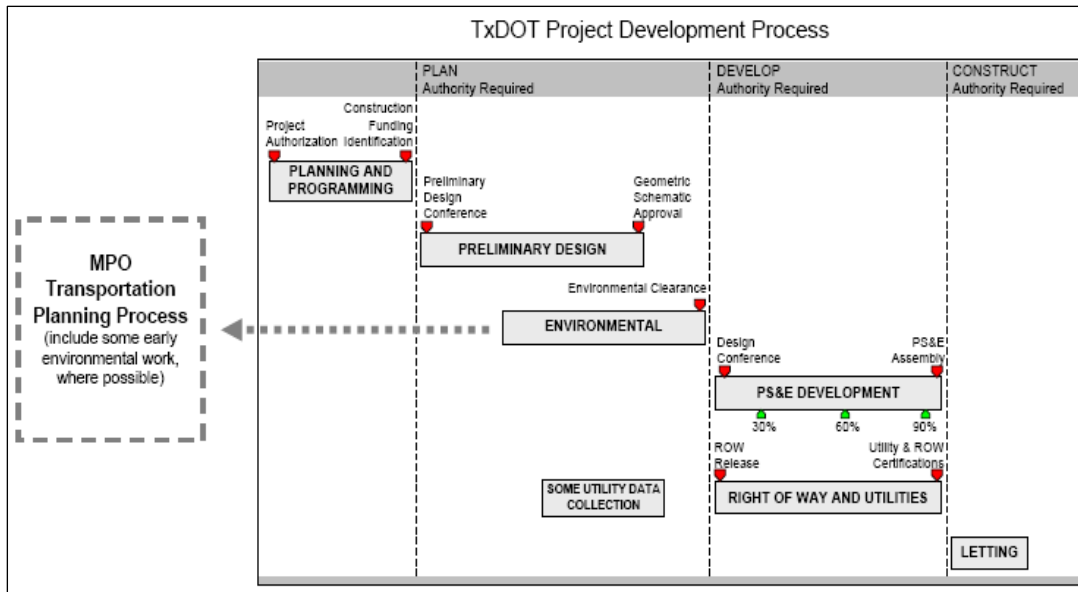


Figure 36. Movement of Some Environmental Work to Planning Stage.

TxDOT’s Environmental Affairs Division should continue to work with the MPOs to establish guidelines and a framework for meeting the requirements to link environmental work with planning as established under SAFTEA-LU.

The use of a tiered environmental process should be considered on a project-by-project basis as a means to preserve ROW for future corridors. Under this method the official environmental process should start at the corridor planning stage, early input should be provided from resource agencies, and planning studies conducted in the process should be scoped and completed to meet some NEPA requirements. Sufficient analyses should be conducted to refine the project to the level that a preferred alignment is identified and preliminary environmental approval is granted for the alignment under study.

Figure 37 illustrates how these two early environmental options can be considered in TxDOT's project development process.

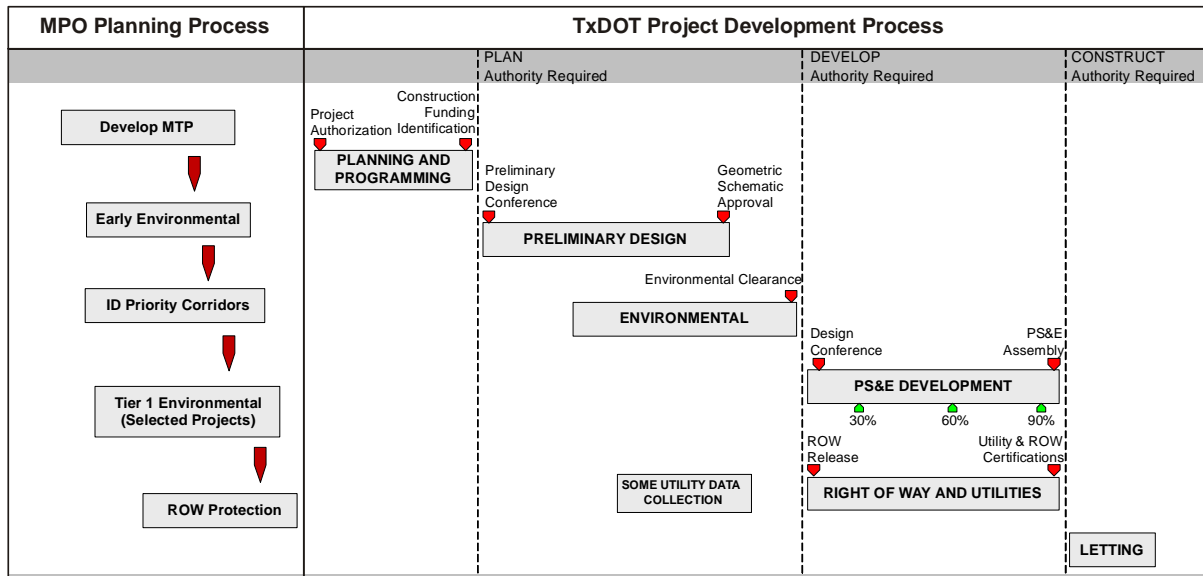


Figure 37. Early Environmental Option in the Project Development Process.

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 38 illustrates a general corridor preservation process that would employ the recommendations set forth for CP in sections 6.2.1 through 6.2.4.

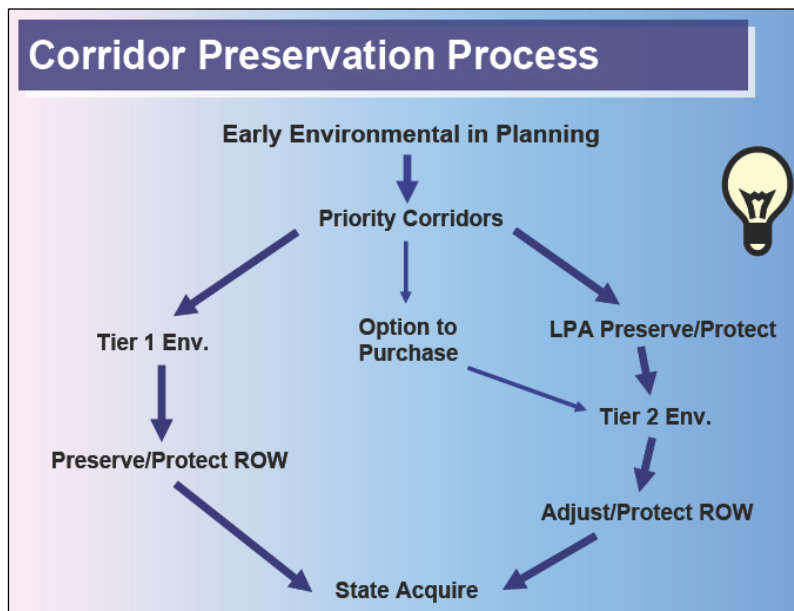


Figure 38. General Overview of Recommended CP Process.

6.2.4 Establish a Dedicated CP Funding Source

TxDOT should work with the legislature to identify and establish a dedicated funding source for the purpose of corridor preservation. The dedicated source should be used for early acquisition of ROW for projects that are identified on the statewide or an MPO 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.

6.2.5 Facilitate Advance Acquisition

TxDOT should use both fee-simple and less than fee-simple methods to acquire or preserve ROW for transportation corridors through traditional and advance acquisition methods and through partnerships with local jurisdictions. Fee-simple negotiated purchases will continue to be the most common ROW acquisition method, but TxDOT should take steps to increase the use of advance acquisition methods by districts.

Education and/or training should be provided to districts, particularly non-urban districts, on the use of advance acquisition methods included in TxDOT's ROW Manual. One possible option for increasing the use of advance methods would be an arrangement where experienced ROW professionals in urban districts who have used these methods assist ROW staff in other districts that have not used these methods.

Districts should identify critical parcels early in the project development process and identify critical parcels for early 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.

Partner with Locals on Early Acquisitions

A possible approach districts should consider for advance acquisitions is for local jurisdictions to acquire needed ROW (on a case-by-case basis). For example, in cases where land that is located within a known future corridor is on the market, districts could work with local jurisdictions to 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 can 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)).

Another approach districts could consider is that donations for a TxDOT project could be made to a local jurisdiction. This approach could possibly facilitate donations for districts and benefit local jurisdictions. The fair market value of the (voluntarily) donated land could be used as a credit toward the federal match required for a project. Such an approach would not require commission approval, and would allow TxDOT, cities, and/or counties to apply the donation toward their local match for the project.

These indirect methods of early acquisition of properties for state highways 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.

ROW Acquisition through Local Plans and Plats

ROW dedication and reservation through local platting is a good tool in CM for protecting and acquiring ROW along existing facilities, but is not as viable for use in CP for new facilities – particularly those without schematics and or known alignments. However, new TxDOT facilities can and should be included on municipal and county transportation plans and, in the local platting process, ROW for these facilities should be required in an amount roughly proportional to the impact of the development.

It would take a very large development to necessitate a significant amount of ROW dedication for a new TxDOT roadway. In situations where a landowner desires to develop and subdivide property where a future thoroughfare (local or TxDOT) is shown, but the impact of the development is not be enough to require ROW dedication, there are still options and approaches local jurisdictions can take to acquire or preserve the ROW. These options include outright purchase of the ROW, negotiating to preserve the ROW, and use of development agreements. In such cases, TxDOT should partner with cities and counties in discussions and negotiations with landowners/developers to preserve or acquire the ROW needed to gain compliance with the adopted plan for the property being subdivided for development.

6.2.6 Recommendations Requiring Legislation

Advance Acquisitions Authority Prior to Alignment Determination

TxDOT should pursue new legislation containing the same or similar provisions set forth in failed HB 2268 (80th legislative session). The legislation should amend Section 202 of the Transportation Code to authorize TxDOT to purchase interests in real property before the location and alignment of a highway has been determined, and include a prohibition against making an advance acquisition by condemnation. Like HB 2268, it should include language to clarify that the legal requirement that an environmental review of a TxDOT project be conducted before the location of an alignment of the project has been determined does not prevent the advance acquisition of property.

TxDOT authority to purchase interests in property prior to location and alignment determination would provide TxDOT with an additional advance acquisition tool that, compared to purchase options, would be more attractive to willing sellers. With this authority, TxDOT could acquire property early from willing sellers for known future corridors in advance of project development and environmental clearance.

Expand Authority for Thoroughfare Planning to More Counties

TxDOT should support legislation to expand the ability of counties in Texas to adopt and enforce a thoroughfare plan as part of the subdivision process. Section 232.100 of the LGC provides a limited number of counties with the authority to enforce a major thoroughfare plan

and acquire ROW. Figure 39 illustrates the counties in the state that currently qualify for the ability to adopt a thoroughfare plan and also shows additional counties in the state that are recommended for inclusion in Section 232.100 of the LGC. These additional counties include those that are located wholly or partially within an MPO boundary, but currently do not have the ability to adopt a major thoroughfare plan. TxDOT should support legislation to make ‘all counties that are wholly or partially contained within the boundaries of an MPO in Texas’ applicable to section 232.100 of the Texas LGC.

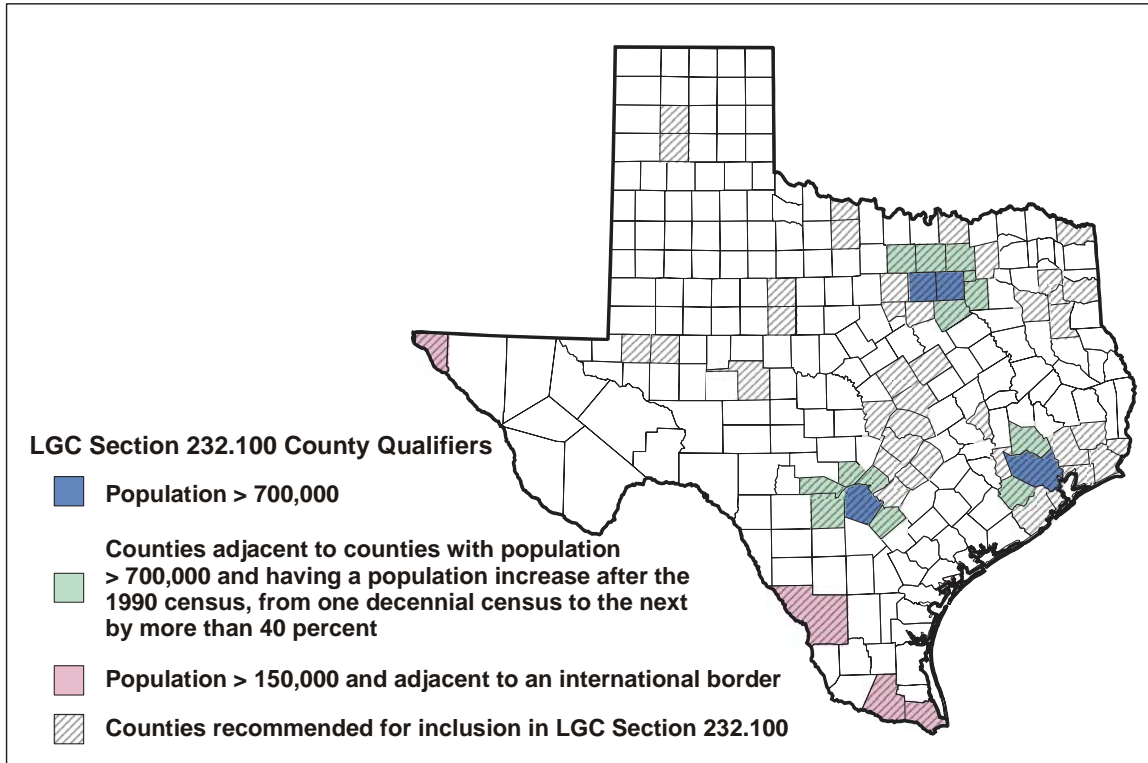


Figure 39. Texas Counties Recommended for Thoroughfare Plan Adoption Authority.

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