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16. Abstract

Preserving new and existing corridors for future transportation improvements has long been a concern for state transportation agencies. States must compete with developers, other government agencies, and private owners to acquire property necessary to improve existing transportation facilities or to reserve property for future transportation facilities. Under the Intermodal Surface Transportation Efficiency Act, states are now required to consider corridors for preservation in transportation plans and to outline strategies for corridor preservation. There remain, however, several issues that hinder these efforts.

- The existing environmental and project development regulatory framework delays the advance acquisition of right-of-way.
- Recent court rulings have found several state programs to be unconstitutional on the basis of taking without compensation.
- Inadequate funding for the advance acquisition of right-of-way when land use control and negotiation techniques fail results in the continued loss of key parcels of property.

In order to address corridor preservation, many states have implemented policies and adopted supporting legislation that provide the state transportation agency with tools necessary to assist in the long-term preservation of corridors. Procedures and legislation that provide for informal or formal agreements between states and local governments for the use of local police powers in regulating land use in specific corridors, maps of reservation delineating the future right-of-way, and dedicated funding have been used successfully by states to preserve future right-of-way.

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SUMMARY

Transportation is one of the most critical land use problems facing states today. State Departments of Transportation continue to struggle against the competing interests of developers, other government agencies, and private property owners, to acquire property necessary to improve existing transportation facilities or to reserve property for future transportation facilities. Without the proper tools to preserve necessary rights-of-way, future transportation corridors as well as opportunities to expand existing facilities are often lost due to private development or other public uses.

Many states, particularly high growth states, have practiced corridor preservation either officially or unofficially for years. However, under the Intermodal Surface Transportation Efficiency Act of 1991, states are now required to consider corridors for preservation in developing their transportation plans. As a result, many more states have implemented corridor preservation programs and have adopted legislation to support those programs. Other states are now considering such programs.

Corridor preservation is a concept that employs a coordinated application of techniques to protect or reserve right-of-way for transportation facilities. There are numerous techniques that are available for use, particularly when the state employs a corridor preservation procedure that is coordinated with and accepted by local jurisdictions. This study found that use of the police powers in cooperation with local agencies and early fee acquisition are the most often used techniques for corridor preservation. Other more moderately used procedures include maps of reservation and access management.

There are several issues that continue to hamper long-term preservation efforts. Inadequate regulations covering land use control and acquisition and condemnation strongly affect the ability of states and local communities to protect future transportation corridors. States do not engage in land use planning and regulation. Thus, they must rely on local jurisdictions' use of police power to assist in protecting corridors from encroaching development. The issue of property rights continues to deter preservation efforts. Several states have had their corridor preservation legislation declared unconstitutional on the basis of taking without compensation, and have had to revise their procedures as a result. Others are reluctant to pursue preservation due to the perceived risks associated with the property rights issue.

The current regulatory framework governing environmental and project development processes also hinders states' efforts to preserve future transportation corridors. Environmental approval is not granted until the full project development process — from planning through design — has been completed, and right-of-way acquisition is dependent on this approval. The time required to complete the necessary studies and documentation can delay a project for years. During that time vital property for the project can become developed, greatly increasing the cost and impacts of the proposed project. Several states have been working with affected federal agencies to use a phased or tiered environmental process. Others have found reluctance on the part of the regulatory agencies to allow this approach.

Funding for corridor preservation has been and continues to be a problem. It is difficult for state DOTs to gain public support for purchasing right-of-way for a project that will not be built for 15 to 20 years when immediate needs are so great. Although the federal revolving fund has provided monies for corridor preservation, appropriations to this fund have been limited and requests have generally exceeded the amount authorized annually by three or four times. A number of states have addressed this issue by establishing a dedicated funding source for the advance acquisition of right-of-way. These funds have come from fuel taxes, general revenues, and/or special legislation. Some states replenish these funds from the sale or lease of state property. However, in several instances this income has been insufficient to recover what has been spent on right-of-way.

More than 20 corridor preservation techniques were reviewed for application in Texas. This review was conducted based on current State law and code. Results of this review indicate that the Texas Department of Transportation (TxDOT) has few tools available for preserving future corridors. New enabling legislation and/or Administrative Code will be required to support corridor preservation within the State.

Methods of identifying and evaluating corridors for preservation were reviewed for TxDOT. Based on this review, a process was developed for use by TxDOT for identifying and evaluating corridors for preservation. It is recommended that in order for a corridor to be considered for preservation, the corridor and proposed improvement must be included in the regional and/or statewide adopted transportation plan, and sufficient environmental analyses should have been conducted to demonstrate a feasible alignment free of serious environmental constraints. A checklist addressing the importance of the corridor, the threat of development, the likelihood that the corridor can successfully be preserved, and other options to preservation was developed to assist in evaluating corridors to be targeted for preservation efforts.

Based on the information and findings of this study, actions directed at developing and implementing a corridor preservation program in Texas are outlined. Suggested approaches to each stage of program development are included.

CHAPTER 1—STATE-OF-THE-PRACTICE IN CORRIDOR PRESERVATION

INTRODUCTION

For years state Departments of Transportation have struggled against the competing interests of developers, other government agencies, and private property owners, to acquire property necessary to improve existing transportation facilities or to reserve property for future transportation facilities. Without the proper tools to preserve necessary rights-of-way, future transportation corridors as well as opportunities to expand existing facilities are often lost due to private development or other public uses. This can result in moving a planned facility to an alternate corridor, sometimes to environmentally sensitive areas, or requires purchasing the property within the original location at a greatly increased cost. Within existing corridors, mitigation of environmental impacts due to the location of sensitive receptors along the facility can also drive up the cost of a project. Changes in proposed location and/or cost of the transportation improvements can cause delay within the project development process, further increasing the planning, administrative, and construction costs of the project.

Although these problems have long been recognized, there are a number of issues that have impeded the implementation of policies to preserve existing and future transportation corridors. Numerous regulatory and funding constraints inhibit early acquisition of land for future transportation improvements.

Current regulations require that environmental clearance be obtained for a transportation project before acquisition of right-of-way can begin. Such clearance, particularly if permits must be obtained, can take several years, time during which further development within the corridor may occur. Recent court decisions have discouraged local governments from participating in preserving rights-of-way through the use of police powers due to the substantial damages that agencies may have to pay when the use of such powers have prohibited the property from being used for the purpose for which it was purchased. Additionally, the increasing cost of transportation improvements coupled with the decreasing availability of funds to implement improvements means that funding for advanced acquisition of rights-of-way is becoming even more difficult to obtain. Dollars available today must be spent on current priorities rather than reserving property for future improvements.

The objectives of this research study focus on identifying and assessing the techniques and policy alternatives that have been employed nationally to facilitate the preservation of transportation corridors. Further, this study is designed to identify the corridor preservation techniques that appear most appropriate for Texas and to develop a set of criteria the Texas Department of Transportation can employ to identify growth corridors where preservation actions may be effective.

A review of the state-of-the-practice in corridor preservation was conducted for this project. This was performed by means of a review of relevant literature and a survey of state departments of transportation. A literature search was conducted to identify key research efforts

and information relative to past and current corridor preservation practices. The search identified numerous publications and on-going research projects that address the techniques and issues associated with current corridor preservation efforts. With respect to the purpose of this study, the information found through the literature review was organized into two categories: 1) overview of corridor preservation techniques and strategies; and, 2) issues associated with corridor preservation.

DESCRIPTION OF IDENTIFIED TECHNIQUES

A general description of the corridor preservation techniques identified during the literature review is provided below for the purpose of explaining the terminology used throughout the review of current practices. There are three general categories of techniques for corridor preservation found to be in use; negotiation, regulation, and purchase. A discussion of current corridor preservation practices, including examples of how these techniques are being used, follows these definitions.

Negotiation Techniques

- **Density Transfer-** permits the landowner to build, on a portion of the property outside of the right-of-way boundary, the square footage or number of dwelling units that were planned for the entire parcel (1). This technique is similar to cluster zoning and planned unit developments (PUDs). Cluster zoning involves clustering the improved portion of a development 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 right-of-way (ROW). The new property does not necessarily have to be contiguous to the original property that was impacted by the transportation corridor. (1, 2)

- **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.

- **Donations-** local planning ordinances or, in some states, state legislation are used to encourage property owners to donate right-of-way for future transportation corridors. The voluntary donation of land allows the 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).

- **Land Swapping-** can occur when a governmental agency determines that a development may encroach or threaten a planned right-of-way. Alternative pieces of land are offered

from the agency's inventory of excess property to the developer in exchange for their parcel or parcels.

- **Highway Platting-** is a situation in which the developer voluntarily creates separate lots for right-of-way. Public agencies are expected to eventually purchase these lots (3).

- **Public/Private Partnership-** is typically utilized in order to provide new or improved facilities for which sufficient public funds are not available. The joint development process allows the developer to dedicate the right-of-way while receiving compensation from income derived through joint development. However, many states have laws that disallow the use of long-term leases of government-owned properties when the property is to be utilized for commercial purposes (2).

- **Interim Uses-** allow a low intensity land use designation to be applied to property that will eventually be acquired as corridor right-of-way.

- **Irrevocable Offer to Dedicate-** is essentially a commitment by a landowner or developer to dedicate land for right-of-way. Control of the property is exchanged when the facility is built. This strategy is commonly utilized in California.

- **Option to Purchase-** is a conditional agreement in which the government agency agrees to pay for the right to purchase the property at a later date. In most cases, the agreement will stipulate that the property will be purchased within a specified amount of time as long as the condition of the property remains unchanged. The cost of the option is negotiated and is typically a percentage of the total purchase price (1, 2).

Regulatory Controls (often referred to as *police power*, allow state and local agencies the power to adopt laws and policies that secure the public's health, safety, welfare, and morals.)

- **Eminent Domain-** enables federal, state, and local agencies to assemble and acquire private property by condemnation or regulation for public purposes. In accordance with the Fifth Amendment of the Constitution, private entities must be justly compensated for the property that was taken.

- **Zoning-** is an application of the police power by a government agency. Zoning was originally based on the concept of nuisance (or the interference with the use or enjoyment of one's property) (4). Zoning was created to separate incompatible land uses by mapping the jurisdiction into zones or districts, therefore reducing the frequency of nuisance disputes. 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 (5). Generally, individual states have allowed local governments to determine which types of land use controls shall be utilized in that particular area.

- **Access Management-** prevents the overuse of existing transportation facilities by limiting the amount of access to them. This technique is also referred to as *capacity*

protection, and it controls the number of access points (i.e. curb cuts) from adjacent properties. This can also be achieved by preserving properties adjacent to the facility so that it may be widened (1, 2).

- **Exactions**- are mandatory contributions by a developer to the local jurisdiction in order to receive approval for a zoning change, site plan approval, special use permit, proposed subdivision, or any other development that might warrant permission by local government agencies. Exactions are designed to pass the cost of the development on to the users of that development, thus relieving the general public of the burden of the cost. Exactions should be used for right-of-way purposes only when there is a clear and direct connection between the exaction and the furtherance of the government agency's interest. Types of exactions include dedications, impact fees, in-lieu payments, and in-kind contributions. A more complete description of the types of exactions follows.

    - *Dedications* are exactions imposed on developers requiring them to dedicate transportation and utility right-of-way for the proposed development. Dedications must serve the specific needs of the development or it may be deemed unconstitutional.

    - *Impact fees* are fees that are imposed on the developer to recover the cost of improvements that the development required. Impact fees are allowed to recover no more than the cost of the improvements, and they can recover only those costs directly attributable to a development. Therefore, they are not an effective corridor preservation technique.

    - *In-lieu payments* can be used to build or purchase right-of-way necessitated by a new development but not controlled by the developer. In-lieu payments often are paid by the developer to the local jurisdiction to cover the cost of making improvements off-site because the site is too small to include them within the property.

    - *In-kind contributions* require the developer to construct facilities or infrastructure within or near the proposed development (1, 2).

- **Growth Management**- is a mechanism utilized to ensure that the rate of development does not exceed the availability of public facilities. Growth management utilizes state and local government regulatory powers to influence a community's spatial distribution of activities.

- **Setback Ordinances**- are methods used to preserve right-of-way by preventing construction within certain distances from curbs, property lines, structures, etc. They are typically defined in local ordinances or building codes. Setback ordinances must be reasonably related to the preservation of the public's health, safety, and welfare, and they must not be applied arbitrarily and capriciously (1).

- **Subdivision Ordinances-** are local ordinances that regulate the subdivision and platting of land into lots and blocks and the provision of infrastructure. The regulations are administered differently and by different agencies, but every state permits their local governments to regulate the subdivision of land. In order to be effective, subdivision regulations must be integrated with other local government plans such as comprehensive plans, capital improvement programs, and zoning ordinances (5).

- **Development Easement-** is a method of acquiring the use of a parcel of land without transfer of ownership. The typical approach for right-of-way acquisition is for the government agency to purchase the property owner's right to develop the land. The owner would be left with all other rights of ownership, including retaining possession of the property (2). Easements can be temporary or permanent, as well as affirmative or negative. An affirmative easement permits something to be done on the property, while a negative easement restricts the use of the property.

- **Moratoria-** is a procedure used to provide time to revise a land use plan or zoning ordinance or to provide time to upgrade facility plans. The moratoria would restrict development in a specific area or corridor until the appropriate plans have been adopted. Moratoria must be adopted by local government agencies as part of their land use control program because state agencies lack the authority to adopt this measure (6).

- **Reservation-** is the designation of a proposed transportation facility right-of-way on an official map or a subdivision plat approved under a subdivision ordinance. The purpose of the reservation is to prevent development in the reserved right-of-way. Maps of reservation are commonly used as the official documentation of current and future roadways. These maps require the appropriate enabling legislation and require that development adjacent to the proposed roads occur outside the area of the mapped street. The maps utilize right-of-way or centerline alignments to define the corridor (1).

Purchase Options

- **Fee Simple-** is a form of ownership that entitles the owner of a parcel of land to the entire property. A fee simple acquisition entitles the owner to the entire property with unconditional powers of disposition during their life, as well as a title (both legal and equitable) that descends to heirs and legal representatives upon death of the owner. In Texas, the property conveyance is assumed to be fee simple unless specified otherwise in the instrument of conveyance (7).

- **Negotiated Agreement-** is a type of fee simple acquisition in which the purchase of land is a result of a contract rather than eminent domain.

- **Protective Buying-** is used, under federal regulations, to purchase a parcel of land for a roadway before that facility has received final approval. This is done in instances where development in and around the corridor threatens to obstruct the right-of-way or it imposes a hardship on the owner of the property (the Federal Highway Administration

[FHWA] has established criteria to determine when a person has incurred a hardship). The purchase of the land can be funded through federal, state, or local funds depending on the circumstances (2).

- **Abandoned Corridor 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. In the case of railroads, railbanking is a technique that has been used to preserve rail corridors proposed for abandonment. The right-of-way is conserved for possible future transportation use. Many states pursue rail-trail programs, successfully using several federal statutes that encourage such actions (8).

CORRIDOR PRESERVATION PRACTICES

Review of existing literature indicated that corridor preservation practices in most states prior to the mid-1980s focused on early acquisition of rights-of-way with federal or state funding as permitted under federal regulations governing hardship/protective acquisitions or advance acquisition using FHWA "O" funds. The fee simple purchase of right-of-way through hardship or protective buying under federal regulations allows a state transportation agency to request approval from FHWA to purchase a limited number of particular parcels within the limits of a project prior to completion of the final environmental impact statement. However, protective or hardship buying may be used only subsequent to certain conditions including selection of a preferred alignment, conclusion of a public hearing, documentation that the acquisition is in the public's best interest, and following a request for the purchase by the property owner. Because hardship or protective buying can only be used under special circumstances and only with approval by FHWA, it is not an effective method for preserving rights-of-way for entire transportation corridors (2, 3, 9). Additionally, as the cost and time required to implement transportation projects increased and available funding decreased, state transportation agencies have become more proactive in developing strategies that can be used to preserve the rights-of-way needed for future transportation projects.

FHWA's revolving fund, also known as the "Q" fund, has been a popular device for use in the advance acquisition of right-of-way where development threatens the corridor and the state does not have the money available to purchase the property. This is a revolving fund that provides loans for up to 20 years for advance acquisition. Funds are repaid at the time of construction. There are a number of limitations on the use of "Q" funds including the requirement that the National Environmental Protection Agency (NEPA) environmental process be completed (6).

The scope of corridor preservation programs found in this review range from statewide policies and programs, to programs aimed at a specific system of roadways and to limited programs directed at individual corridors. A study completed by Rivkin and Associates for FHWA examined the corridor preservation practices in nine states: Arizona, California, Delaware, North Carolina, Florida, Utah, Oregon, Nevada, and Georgia. The practices in those states fell into three general types of corridor preservation: capacity protection/access

management; preservation of new corridors prior to current regulation; and recent strategies between the states and local governments and FHWA to protect corridors due to funding limitations (3). The types of programs found in the nine states studied by Rivkin are representative of the programs found throughout the literature review and will be used to highlight the current practices in corridor preservation.

Capacity Protection/Access Management

Although the focus of the ISTEA legislation and much of the literature is on the preservation of new corridors for future transportation facilities, protection of the capacity of existing roadways is currently becoming a priority in a number of states. Transportation facilities have long been known to shape land use patterns through the provision of access. Although the responsibility for land use planning in most states rests with the local governments, state transportation agencies have been successful in working with local agencies to use the police powers to protect the capacity of existing facilities through access management and to preserve additional right-of-way for future widening.

Capacity protection is used by some states for individual route projects whereas other programs are directed at the main statewide system. A number of examples of successful capacity protection programs for individual projects were identified in the literature. These projects have largely been directed at primary arterial routes which have limited right-of-way for widening and permissive access control. Most of these roads have some development, but abutting land is largely rural and undeveloped. Additionally, in most cases the state transportation agency foresees the need for the facility to be reconstructed to a freeway or other form of controlled access route. Although each of the projects identified was unique in terms of the legal, administrative, and physical conditions, they used comparable approaches to protect the capacity of an existing facility. Most notable in the examples is the reliance on local governments to execute the strategy (3).

The states of California, Delaware, and Utah each have successfully utilized capacity protection and access management strategies to preserve right-of-way on a project-by-project basis along existing facilities. The Delaware Department of Transportation (DelDOT), working with local governments and FHWA, formulated a capacity protection strategy for State Route 1, a four-lane divided highway in rural Sussex and Kent counties. DelDOT prepared a short-term Corridor Preservation Plan that outlines the "desirable ultimate right-of-way" required for each segment of Route 1; identifies the functional classification of major intersecting roads and the probable locations of future intersections; examines the existing constraints that limit the potential for additional right-of-way (including existing development, zoning, and environmental constraints); and outlines the requirements for granting temporary access to adjacent land. The plan also establishes criteria for the control of access along the corridor including a system of temporary access points that will be closed when full control of access is initiated (3).

Using this Corridor Plan and local supportive ordinances (within Delaware, state law requires that all applications for subdivision permits and rezoning at the county level be referred to DelDOT for review and approval), DelDOT has employed both a proactive and reactive

strategy. Considerable public involvement has been used by DelDOT to promote voluntary cooperation of the landowners, developers, and citizens. However, DelDOT largely reacts to requests for zoning or subdivision permits filed with a local government agency to protect the capacity of Route 1. A special committee was established by DelDOT to review any zoning change request, subdivision permit application, or development proposal within the corridor. If the proposed action is not consistent with the Corridor Preservation Plan, DelDOT will begin negotiations with the landowner to reserve the right-of-way and employ the design and access standards set forth in the plan. Additionally, any development that generates traffic exceeding the capacity of the road is required to implement mitigation improvements or enter into a transportation management agreement. If implementation of the Corridor Plan results in denial of the owners legal use of the property, DelDOT is prepared to compensate the owner through planning for alternative access, making financial compensation for development restrictions, or purchasing the property (3).

The Utah Department of Transportation (UDOT) has also had success in working with local jurisdictions to protect the capacity of specific existing roadways. State Route 89 is a major connector between Salt Lake City and Ogden, both of which were experiencing rapid suburbanization. Although several alternatives were under consideration, no preferred alternative had been selected for future improvement of the facility. However, the pressure for development was growing and in order to move as quickly as possible to protect the future capacity of the highway, UDOT selected the alternative of an expressway with frontage roads as a basis for establishing right-of-way lines.

The emphasis of UDOT's capacity protection efforts along Route 89 is on the use of legally binding agreements with the local communities. These agreements define the requirements for both UDOT and the local communities. Generally, the agreements stipulate the following:

- UDOT will perform the necessary environmental studies and reports, hold the public hearings, and complete final plans for the highway improvements.
- Within the limits of their legal authority, the local jurisdictions will preserve the right-of-way from developments that could increase the cost of acquisition. The techniques that the local jurisdictions may employ include setback requirements as defined under local subdivision ordinances, zoning proffers, donations, as well as purchase of the property.
- Local jurisdictions will review all applications for zoning changes to determine the resulting economic impact on the proposed highway widening and will notify UDOT of any building or zoning change that is expected to impact the cost of the property acquisition.
- UDOT will coordinate with the local jurisdictions to determine what actions may be taken to mitigate the costs of the affected future rights-of-way.

- UDOT will provide final plans for the highway as they are developed so that local jurisdictions can better identify the required rights-of-way (3).

Similarly, the California Department of Transportation (Caltrans) has been working with local government agencies to protect capacity on two rural arterial facilities, State Routes 49 and 41 located in Madera County. These two-lane facilities serve as access to Yosemite National Park and become congested during the tourist season. Development pressures are intensifying within and surrounding the several small towns located along the routes and both the County and Caltrans acknowledge the roads will need to be widened to four lanes at some point in the future.

In response to the problem, the County requested that Caltrans draft an ordinance specific to the two routes, State Routes 49 and 41. This ordinance, which was adopted by the County, sets different typical right-of-way standards to accommodate the varied topographical and operational requirements of the facilities. These standards are used by the County in the review of zoning and subdivision permits and development requests. When an abutting landowner seeks a development permit, the request will be reviewed and if the proposed development affects the anticipated corridor right-of-way, he will be asked to dedicate or sell the right-of-way (3).

A number of states have adopted statewide strategies for capacity protection and control of access aimed either at a particular system of highways or at all state controlled facilities. Twelve states were identified through the literature review as either having or considering comprehensive capacity protection and/or access management programs (3, 10, 11). A discussion of four state programs is included here.

The Oregon Transportation Commission (OTC) has established a statewide capacity protection and access management program called the Access Oregon Highway (AOH) system. This program concentrates on 12 existing corridors and three new corridors that link interstate highways, state borders, ports, and urbanized areas. All of the roads carry significant automobile and truck traffic and were selected according to levels of importance and in conjunction with public hearings across the State. This program calls for achieving specific standards of service, 45 or 55 mile per hour average travel speeds, and then protecting the capacity of these arterials to serve through movements. The Oregon Department of Transportation (ODOT) is required to prepare a corridor plan that outlines, for each of the AOH highways, the strategy to achieve or maintain the specific standard of service.

The policy established by the OTC allows the selected highways to accommodate local circulation needs only to the extent that through travel is not sacrificed. A key element of the ODOT policy is keeping a minimum distance between access points to the highway. To accomplish this, ODOT will acquire existing access points that do not meet minimum distance requirements through negotiated purchase, eminent domain, exchange of property, or substitution of alternative access. Eminent domain to acquire property from a third party to provide alternative access for landlocked property may also be used. Police power will be used to regulate new access points - allowing only access that meets the minimum standards.

Cooperation and communication with local jurisdictions is key to the Oregon program. ODOT cannot fund projects that are not consistent with local comprehensive plans. Thus, the Oregon Land Conservation and Development Commission is requiring all local plans be revised to be consistent with the AOH system. Additionally, through the use of Oregon's statewide planning program, local jurisdictions are required to consider transportation and land use interaction and must be prepared to plan and fund local circulation needs rather than relying on direct access from the state highways (3).

Florida enacted the 1988 State Highway Access Management Act to give the Florida Department of Transportation (FDOT) the power to set stringent standards for access and to work closely with local governments to protect access on state roads. The Florida legislation is interesting because it allows that owners of property abutting state roads have a right to reasonable access, but may not have a right to direct access. In other words, the access rights of an owner of property that abuts a state highway is considered secondary to the public's right and interest in a safe and efficient highway system (12).

FDOT prepared a comprehensive set of procedures to implement the State Highway and Access Management Act. These procedures stress cooperation and coordination between FDOT and local governments. Within two years of the Act, FDOT, in cooperation with local jurisdictions, was to classify every highway on the state system into one of seven categories. Each category of roads has specific standards for connection spacing, median spacing, and traffic signal spacing. Efforts are underway to work with local governments to have these standards incorporated into local land use and subdivision regulations. However, in many cases, existing non-conforming access points will be grandfathered and allowed to remain (3).

The state of Michigan, finding that the lack of coordinated corridor right-of-way and access management creates adverse impacts on landowners, local government, the environment, and the ability to implement improvements, is proposing the Transportation Corridor Management Act (13, 14). This Act will provide for the formation of a corridor management committee at the request of local governments or at the recommendation of the state transportation agency. Corridor management committees will consist of members from each local unit of government, the state transportation agency, and from each metropolitan planning organization or regional planning commission. Committee responsibilities will include establishing bylaws and procedures for preparation of a corridor plan, the terms of office for members, and voting procedures for the plan adoption (14).

The corridor management committee will be required to develop a corridor plan for the specific corridor within 18 months after formation of the committee. This plan must be consistent with the long-range transportation plan and land use plans of the local governments; identify the future right-of-way based on an initial evaluation of current and future traffic, environmental conditions, property use and design; include access management standards for the corridor; and identify recommended land use plan amendments to assist in the corridor preservation and access management plan (14).

Pending development and adoption of the corridor plan the committee may designate a preliminary preservation area. The committee may enact a development moratorium, not to exceed two years, within the preliminary preservation area while the corridor plan is being prepared. The decision on implementing the moratorium will be solely that of the local government. Furthermore, each individual local community involved may determine the particular parcels or portions of parcels that are included in the moratorium. Each parcel will be reviewed with respect to current zoning, use, and other factors to determine if the moratorium may constitute a taking (14).

The corridor preservation techniques authorized by the proposed legislation include:

- setbacks for buildings, structures, and parking lots measured from the future right-of-way line;
- specific lot dimensional standards;
- standards for land divisions;
- standards for uses, buildings, and structures existing or made nonconforming by the designation for the future right-of-way line;
- special land use standards;
- use of planned unit developments and other techniques to transfer development rights; and
- procedures to permit development within the preservation area provided the improvements are fully amortorized by the time the right-of-way is acquired.

The proposed Michigan Transportation Corridor Management Act also will require that local governments notify the committee of all proposed developments within the preliminary preservation area of review 30 days prior to the date upon which any action might be taken by the local agency. If the transportation agency determines that changes may be needed in access or to preserve right-of-way, the committee and property owner/developer are notified and a meeting to review the proposal is scheduled. Any agreement reached includes a clause for reversion in the state's interest in the property. If an agreement is not reached, the transportation agency has 180 days to file a condemnation action or allow a permit to be issued. Furthermore, an appeals process is proposed for granting a variance to allow development within the future corridor right-of-way when certain conditions exist.

Although at the time of this report this act had not been adopted, the procedures outlined in the proposed Transportation Corridor Management Act had been followed in the development of the M-59 Corridor Plan (13).

The Colorado Department of Transportation regulates access on a statewide basis through a permit system. Access permits are required for both public streets and private driveways. To obtain a permit, access designs must be consistent with state regulations and all costs associated with construction of the access is borne by the applicant. In cases of existing access, the DOT can reconstruct or relocate access when required by changes in roadway operation, design, and safety.

Three basic steps are used to implement the access management code in Colorado (10):

- Determine if the property should have direct access. If direct access is not allowable under the standards, the availability of other alternative access is analyzed.
- If direct access is allowed, the appropriate location is established.
- Desirable AASHTO standards are used for all designs.

Protection of New Corridors Prior to Current Regulations

The Rivkin study (3) identified several examples of successful corridor preservation efforts that began more than 30 years ago. Much of the work associated with the preservation of these corridors occurred prior to the planning and regulatory requirements that are currently in effect. Thus, many of the issues associated with meeting the current project planning and development requirements were not applicable. Additionally, some of the needed right-of-way had to be incrementally purchased in order to preserve it for the future facility. Still, these cases provide good examples of state and local cooperation in long-term protection of a corridor for a transportation facility.

More than 35 years ago the California Transportation Commission adopted an alignment for State Route 85 in San Jose/Santa Clara County, California. The alignment for this freeway was included in the county and city comprehensive plans and the state began to acquire the right-of-way with state funds. By the mid-1970s approximately 45 percent of the needed right-of-way had been acquired when the transportation agency was directed to stop acquiring and consider disposing of the right-of-way. Because the freeway had been on the general plans and much of the development that was occurring was based on having freeway access, the city and county, business groups, developers and industries opposed elimination of this freeway.

Although developers continued to subdivide and build in accordance with the city's general plan, many of the applications were showing development very close to the proposed right-of-way. The city of San Jose could not hold the land open without compensation to the owners nor could it require dedication of right-of-way for a freeway. Thus, the city began to use negotiation and it's available police powers to protect the corridor. The city, along with citizens and business groups, worked to persuade landowners and developers that the freeway would be built and asked for voluntary cooperation to protect the right-of-way. The city negotiated density transfers with developers and allowed interim uses that would not interfere with the taking of the right-of-way. These efforts protected approximately 80 percent of the unacquired right-of-way and bought approximately 10 years of time for the project.

In 1979 a corridor evaluation study that included an Environmental Impact Statement on the preservation of the right-of-way for Route 85 showed that the fiscal benefits of continued protection of the corridor far outweighed the negative impacts and recommended that protective or hardship buying be used to purchase portions of the right-of-way as required. Additional funding for acquisition of the Route 85 right-of-way was made available through a half-cent sales tax passed by Santa Clara County in 1984. The county entered into an agreement with Caltrans that allowed a portion of the sales tax revenues to be used for land acquisition in the Route 85 project corridor (3).

The West Valley Highway in Salt Lake City, Utah, is another example of successful long-term corridor protection. This highway was conceived in the 1950s, placed on the Salt Lake County Master Plan in 1960, and the alignment was recorded as a county ordinance in 1964 to reserve the right-of-way. It has been reported that developers were required to set aside right-of-way for the highway as a prerequisite for subdivision approval. However, the county had no legal authority to require the dedication of right-of-way. What actually occurred was voluntary cooperation by the landowners to hold the property open. County staff (and later city staff) aggressively pursued the support of the landowners and developers. The municipalities zoned the highway corridor agricultural and land that was reserved and held open was taxed at agricultural value, thus saving the owners thousands of dollars over the reservation period. Had the owners developed the property at some point they would have been subject to a five-year back payment of taxes. Subsequent to the completion of an EIS for the West Valley Highway in 1986, local funds combined with FHWA "Q" funds (the FHWA revolving fund) were used to purchase the right-of-way at agricultural value.

At anytime during the period the corridor was protected, owners/developers could have filed suit for taking without compensation. However, the county and municipalities worked with the landowners and developers to help them understand that keeping the corridor open was in their own best interests. In only one instance did a property owner pursue development, an automobile sales establishment. In that case, the city negotiated with the owner to allow open parking lots on the proposed right-of-way as an interim use. The owner understood that the property would eventually be purchased for right-of-way and agreed not to build any structures on that portion of the property (3).

In both of these cases, as well as others, the efforts of the local jurisdictions were key to preserving the necessary right-of-way for a state highway for 20 to 25 years. Through the use of negotiation, citizen involvement, and police powers, local jurisdictions were successful in protecting large portions of the right-of-way needed for long-term future highways. What should not be overlooked, however, is the overall voluntary cooperation from property owners/ developers. Had this cooperation not existed, much of the property within these corridors could not have been protected for so long a time. When the EIS's were finally prepared for these corridors, the original route (sometimes with minor adjustments) generally became the preferred alternative. This is because the alignments had served as the basis for land use decisions and were established as unofficial "policy." In many cases development decisions, in terms of what was planned by the private sector, were based on the ultimate construction of the proposed facility. Thus, after years of planning and development on the premise that the roadway would be built, other alignments (including the no-build) were found to have many more impacts than the original corridor.

Recent Comprehensive Strategies

In the past decade, and particularly since the passage of ISTEA, a number of states have implemented comprehensive corridor preservation strategies. Other states have passed legislation that enables them to acquire land for right-of-way of transportation facilities in advance of construction. Many more states are considering policies or legislation to facilitate the long-term

preservation of corridors. The approach and the level of effort and sophistication used in each state vary widely. However, they are all designed to facilitate the planning, development, and construction of future transportation improvements with the limited resources available and minimum disruption or hardship on property owners. The following discussion focuses on the practices of selected states and illustrates the various corridor preservation practices now in use.

Nebraska and Iowa (as well as several other states) have adopted Map of Reservation programs to protect highway corridors. In Nebraska, the program is directed toward major, high volume corridors in the state's major metropolitan areas. For each identified corridor, the Nebraska Department of Roads (NDOR) files a map showing the property lines, corridor protection limits, and all property owners with the local agency responsible for zoning and subdivision permitting. Each corridor is also identified with a "corridor preservation" sign that provides a phone number for inquiries. Once the map has been filed, the local agency is responsible for notifying NDOR of any proposed developments, and is prohibited from issuing a permit for 60 days. Within that 60-day period NDOR may file a statement of intent to negotiate with the property owner. If no statement is filed within the time period, the permit must be issued. If NDOR does file a statement of intent, they are allowed six months to negotiate with the land owner. At the end of the six months, if an agreement has not been reached and the land owner has not withdrawn his application, then the permit must be issued (10).

The Iowa Map of Reservation program is very similar to that of Nebraska. The Iowa Department of Transportation (DOT) notifies local agencies that planned transportation improvements along a specific road may require additional right-of-way. A map indicating the right-of-way affected is provided to the local jurisdictions. This official notice is valid for three years from the date it is filed and may be renewed for an additional three years. Within seven days of the official notice, the DOT must publish in a newspaper of public record a description and map of the area and a description of the potential restrictions applied with respect to zoning, subdivision plats, and building permits. The local agencies must notify the Iowa DOT of applications for building construction valued at $25,000 or more, subdivision plats, or requests for zoning change at least 30 days prior to granting the proposed permit or approving the plat or change in zoning. The DOT must notify the local agency that they are proceeding to acquire the property affected within the 30-day time period or the permit and/or approval must be granted. If the DOT decides to acquire the property it must begin the process within 10 days of notifying the local agency (10).

Other states have implemented or are considering implementing comparable map of reservation programs to facilitate the protection of right-of-way. Although there are differences, these programs have several common attributes:

- the preparation of official maps that indicate the limits of the preservation area and the filing of these maps with the local agencies responsible for regulating land use;
- a process for public notice and or hearings regarding the proposed corridor;
- cooperation of the local agencies in notifying the transportation agency of applications for zoning changes, subdivision plats, or building permits; and
- a specific time period in which the transportation agency must respond to the application.

In their report, Rivkin identified five states that have adopted a comprehensive approach to corridor preservation: California, Florida, North Carolina, Oregon, and Arizona. In California, Florida, North Carolina, and Oregon, corridor preservation efforts are statewide while Arizona has directed its actions in the Phoenix metropolitan area. These state programs are relatively new and represent the recent systems approach to corridor preservation. Each of these programs includes a policy for corridor preservation, state enabling legislation that supports the policy, an institutional reorientation within the state transportation agency in terms of procedures and participation, and funding to support the preservation efforts. Additionally, these programs incorporate environmental analysis at the corridor selection stage and are working with FHWA and the Environmental Protection Agency to develop the appropriate level of environmental analysis needed for preservation of a corridor (3). The following discussion highlights the policies, legislation, and programs in California, North Carolina, and Florida.

California has taken a unique approach to formulating its corridor preservation policy. In an effort to develop a comprehensive framework for corridor preservation, Caltrans involved staff from planning, programming, project development, right-of-way, environmental, legal, and budget departments as well as staff from its district offices. Each of these disciplines brought a different perspective to the development of the state's corridor preservation policy, the purpose of which was to design state-of-the-art corridor preservation guidelines. This effort resulted in concise, but thorough policy as set forth below.

> "It is the policy of Caltrans to work on a partnership basis with local land use authorities to accomplish early identification of transportation corridors and to explore all appropriate means for the acquisition and preservation of those corridors" (15).

Caltrans further designed a set of guidelines and outlined responsibilities to direct its corridor preservation program. The guidelines include four levels of preservation effort dependent on the stage of planning and project development that have been completed and are to be carried out in cooperation with local, regional, and private agencies. The four levels include:

1) Identify the need for corridor preservation through the review of all types of local and regional plans, corridor studies, and reports.
2) Conduct an environmental review of the corridor at a level corresponding to the actions being taken to preserve the corridor.
3) Coordinate and work with local and regional planning agencies to include corridors in area plans.
4) Act to preserve land for a corridor through donations, dedications, negotiation, and advance right-of-way purchase (15).

As part of the effort, specific responsibilities have been given to the district and division offices of Caltrans. District responsibilities involve implementing the corridor preservation policy and procedures by working with all local and regional jurisdictions in land use and transportation planning and by incorporating the policy into system planning, project development, right-of-way, and access permitting functions. The division offices (including planning, right-of-way, project development, traffic operations, and legal) are charged with

supporting the district activities by pursuing creative methods for corridor preservation and by incorporating the policy into all relevant guideline updates. Furthermore, both the districts and divisions are responsible for ensuring that their actions do not infringe on private property rights as protected by the U.S. Constitution (15).

In California, there was no need to pursue legislation to implement the proposed corridor preservation program. Already in place were numerous state statutes that supported the corridor preservation actions proposed by Caltrans. These included the following regulations.

- A state statute that gives local comprehensive plans the force of law. This law specifies that no zoning or subdivision approval may be granted that conflicts with an adopted general plan and, further, allows local jurisdictions to deny permits when a subdivision lies within an adopted highway corridor.

- Legislation that allows communities to enter into development agreements with private parties as a function of local government approval for specific projects. These agreements let the development applicant negotiate payments for public facilities, donations of land or other measures to mitigate impacts, thus allowing local jurisdictions the ability to negotiate for right-of-way contributions or roadway construction.

- A statute that provides for special assessment districts under which counties may enact a half-cent sales tax. These funds may be used for transportation improvements providing funding for right-of-way, construction and, in some areas, transit.

- Strong state environmental legislation that requires environmental impact reports on general plans, roads and other public improvements as well as private developments involving more than five lots. This gives Caltrans the ability to assist local communities in the environmental studies needed for corridor selection and provides them the opportunity of early review of developments that may impact future transportation corridors (3).

One piece of legislation, SB 1784, was enacted subsequent to, and in support of, Caltrans' corridor preservation program. This law provided a $25 million fund generated through the rental, lease, or sale of Caltrans' property for advance acquisition of right-of-way (3).

The third part of California's corridor preservation program involved instituting a major change in Caltrans' internal and external relationships. Within the Department there is greater communication between planning, right-of-way, environmental, and legal staff who are responsible for formulating the individual strategies for corridor preservation. Caltrans also invests a great deal of time holding meetings and conferences that allow staff to see firsthand what other districts are doing. Outside of the agency, staff has taken a proactive role in working with local jurisdictions and private developers and landowners. Caltrans personnel, seeking new ways to promote the preservation of corridors, have participated in local planning board meetings, provided assistance in local environmental analyses, and negotiated directly with owners and developers (3).

Corridor preservation in North Carolina is not new. It began in the 1960s when the state enacted a revolving fund for the advance purchase of right-of-way. Despite the availability of funding for advance acquisition, North Carolina's early efforts at corridor preservation relied heavily on local efforts to protect right-of-way within urban areas. During the 1980s however, the state took another look at the need to protect future transportation corridors in the process of undertaking a major statewide highway program designed to eliminate the backlog of facility needs resulting from 20 years of rapid growth. The state's current corridor preservation program was developed in response to this backlog of needs.

Through the development of their highway program, the North Carolina Department of Transportation (NCDOT) outlined its current corridor preservation strategy. Early purchase of right-of-way funded from its Trust Fund, either directly or to reimburse local efforts, and short-term reservation are the thrust of NCDOT's preservation policy. Strategic purchases of right-of-way for critical interchanges are the first priority for the Department. Advance acquisition of other property is undertaken when the threat of development demands it. In addition, NCDOT has been working with local jurisdictions to become "partners" in the planning and construction of roadways. They encourage municipalities to identify future needs and to either protect or acquire the needed right-of-way using police powers or local funds (3).

In 1987 several pieces of legislation were passed in North Carolina that strengthened NCDOT and local governments' ability to protect priority corridors. The Roadway Corridor Official Map Act allows right-of-way to be reserved pending purchase by either NCDOT or a municipality. Cities, within their respective jurisdictions, or the State Board of Transportation, outside local areas, may adopt an official roadway corridor map. These maps affect zoning, subdivision, and building permit applications for properties that lay within the official corridor. Once the map is filed with the Office of the Register of Deeds, no building permit may be issued and no land may be subdivided for a period of three years after the original application of the permit or approval is made. In return, landowners are compensated by an 80 percent reduction in their taxes on the land included within the corridor beginning the year following the official filing of the map. A corridor can be placed on an official map only if at least a part of the facility has been included in the current Transportation Improvement Program (TIP) or in a locally adopted comprehensive transportation plan. The adopting city also must have the project included in a capital improvement plan encompassing a period of 10 years or less. Thus, landowners are assured of the intentions of NCDOT and/or cities. Additionally, the state or city must begin preliminary engineering and/or conduct environmental impact studies on the project within one year. If not, the map becomes invalid and restrictions to development no longer apply. Within three years of an application for building or subdivision, the city or state must purchase the affected parcels or the restrictions are lifted and the appropriate permits or approvals are granted (16).

A second piece of legislation passed in 1987 by the North Carolina General Assembly provides cities and counties tools for obtaining dedication of land within a street or highway corridor that is on a plan developed and adopted as required under current North Carolina legislation G.S. 136-66.2 (3). This legislation allows cities or counties to require dedication of right-of-way for a street or highway if the city or county allows the applicant to transfer density

credits attributed to the dedicated property to contiguous land owned by the applicant (17). In situations where the developer voluntarily dedicates right-of-way, the city/county may allow the transfer of density credits to be converted into "severable development rights" that can be applied to other sites in districts designated as "receiving districts" (16).

In addition to the ability to transfer density, the legislation also granted local governments the authority to:

- Require applicants for subdivisions to pay fees instead of making required street improvements (these fees are based on a formula related to forecasted trip generation for the proposed development).

- Broaden setback requirements to include proposed streets as well as existing streets.

- Expand the regulation of curb cuts on both city streets and state roads (with the consent of NCDOT), and allow NCDOT the power to adopt access standards for driveways on state roads.

- Expand the ability of NCDOT to enter into agreements with private developers regarding the donation of right-of-way and sharing in roadway construction costs (3).

Instituting changes within NCDOT was required as part of the roadway corridor map legislation. Involvement of NCDOT officials with local government planning was mandated. The Recorder of Deeds, city or county clerk office, and local and state engineering and planning staff are all included in the process. They have undertaken three pilot projects focused on revising their own early environmental studies pursuant to NEPA requirements so that early FHWA approval for corridor location can be secured. In this effort they have included representatives of the Environmental Protection Agency (EPA), Fish and Wildlife Service, and historic preservation agencies. NCDOT has also implemented a training course for local public officials and others involved in the corridor preservation and right-of-way acquisition process (3).

Florida began formulating its corridor preservation program during the 1980s. Like California, the Florida Department of Transportation (FDOT) put together a multidisciplinary team, including members from FHWA and other outside agencies, to develop recommended policy and procedures. The resulting corridor preservation policy lays the foundation for the statewide program (3).

> "It is the policy of the Department of Transportation that, to the greatest extent possible, transportation corridors be preserved and protected; that acquisition of property rights in association with these corridors occur as far in advance of the construction need as possible; that property rights required to protect transportation corridors be acquired and retained for future use to avoid adverse public impacts associated with right-of-way acquisition after development has occurred; and that right-of-way acquired as part of the advance acquisition programs be managed to take advantage of joint development opportunities, maximize revenues, and recapture the value of the investment" (18).

Based on this policy, FDOT developed a corridor preservation process that outlines three options for corridor preservation.

1) Informal Corridor Protection. This strategy focuses on providing information and assistance to and working closely with local governments to encourage voluntary cooperation in preserving and protecting corridors. Local governments are urged to use "reasonable" land use regulations "to the extent provided by law." FDOT is directed to use this strategy whenever possible.

(2) Formal Corridor Protection. This strategy is centered on statutorily authorized agreements between FDOT and local governments that provide for the imposition of land use regulations by the local governments to preserve the corridor. It is recommended that these be used infrequently due to the risk of litigation for FDOT.

(3) Advance Acquisition. This is considered to be the most effective and acceptable method for corridor protection. The FDOT program provides for two forms of advance acquisition:

- Project advance acquisition under which complete preliminary design and engineering is developed, right-of-way acquisition is scheduled for the entire project, and eminent domain operations may be conducted; and

- Parcel advance acquisition in which information contained in a Corridor Planning and Design Report is used to determine the need for individual negotiated parcel acquisition decisions. This type of acquisition is largely to be used only on non-federal projects unless a categorical exclusion has been granted for hardship/protective buying (18).

The program developed by FDOT is comprehensive, covering highway, rail, transit, and multimodal corridors, and includes specific instructions detailing the types of studies and reports to be completed for target corridors as well as schedules that must be met (3).

Unlike California, there was insufficient or inadequate legislation to support the corridor preservation program being considered by FDOT. As a result, the Florida Legislature adopted a transportation bill, F.S. 337.273, "Transportation Corridors." This legislation provided FDOT with the legal authority to implement its proposed corridor preservation program. Specifically, the legislation

- allows local governments to adopt a transportation corridor in their comprehensive plan and encourages them to adopt ordinances and regulations to protect the right-of-way within the corridors; and

- provides for formal "Transportation Corridor Protection and Acquisition Agreements" between FDOT and local governments that detail the rights and responsibilities of each agency.

Furthermore, the legislation included provisions for maps of reservation. Under this 1988 law, cities and/or FDOT are allowed to prepare and record maps of reservation depicting the right-of-way for transportation facilities. Public hearings are required for any map of reservation. Subsequent to the public hearing, the maps are to be filed in the public land records. Local governments are responsible for withholding development permits for any property that lay within the reserved corridor for a period of five years from the date the map is recorded.

In 1990, the State Supreme Court held that the reservation provisions constituted a "taking" that required compensation to the landowners. As a result, the Florida Legislature passed legislation that revised the map of reservation process. Under the "revised" law, local governments are required to notify FDOT of any pending zoning change, subdivision or building permit application that involves property within the designated corridor right-of-way at least 60 days before taking action of the request. FDOT has 45 days from notification to inform the property owner of its intent to acquire the land. Within 120 days of notifying the owner, FDOT must either acquire the property or begin eminent domain proceedings. If FDOT does not act within the specified time period, the local agency may approve the application (3).

Florida also has support for its corridor preservation program from the state's growth management legislation. This legislation requires each local government to adopt a comprehensive plan consistent with the area's regional policy plan and the State Comprehensive Plan. The Florida Department of Community Affairs (DCA) is responsible for enforcing the comprehensive planning requirements (3). With regard to corridor preservation, the DCA's rules specify that local plans must 1) protect existing and future rights-of-way from building encroachment, 2) allow for the control of roadway and driveway access points along roads, and 3) establish methods for the acquisition/preservation of existing and future rights-of-way (19).

FDOT assigned much of the responsibility for implementing corridor preservation to the staff in its district offices. FDOT districts are to work closely with local governments and provide assistance and support in employing land use regulations to protect identified corridors and to establish right-of-way protection policies in the area's transportation and policy plans. Additionally, the district offices are responsible for monitoring all land use changes, comprehensive plan amendments, zoning change requests, and site plans that affect the corridors designated for protection in the State Transportation Plan (3).

SURVEY OF STATES

A telephone/fax survey was conducted in December 1995 and January 1996 of each of the fifty state departments of transportation on their corridor preservation procedures. Forty-three of 50 states, or 86 percent, responded to the survey. Some states did not answer all of the survey questions.

The survey questions were developed from a previously conducted American Association of State Highway Transportation Officials (AASHTO) survey in 1988 and specific requirements of this project (2). Two survey forms were created for this project: one for states that did respond to the previous AASHTO survey and indicated corridor preservation efforts were underway and one for states that did not respond to the previous AASHTO survey or reported that corridor preservation techniques were not used.

The results of the telephone/fax survey were complied and synthesized for this report. A detailed summary of the responses is included in Appendix A. Appendix B lists the names of the key contact personnel in each of the responding states.

How Prevalent Is Corridor Preservation?

A majority of states (77 percent) do identify corridors that should be protected or preserved. This represents an increase of 24 percent from previous results of the AASHTO survey. This increase may be attributed to the increased importance of preserving or protecting critical transportation corridors by organizations such as AASHTO and FHWA. Figure 1 shows which state departments of transportation (DOTs) use a corridor preservation process in their state. Table 1 shows which states adopted corridor preservation procedures since the 1988 AASHTO survey.

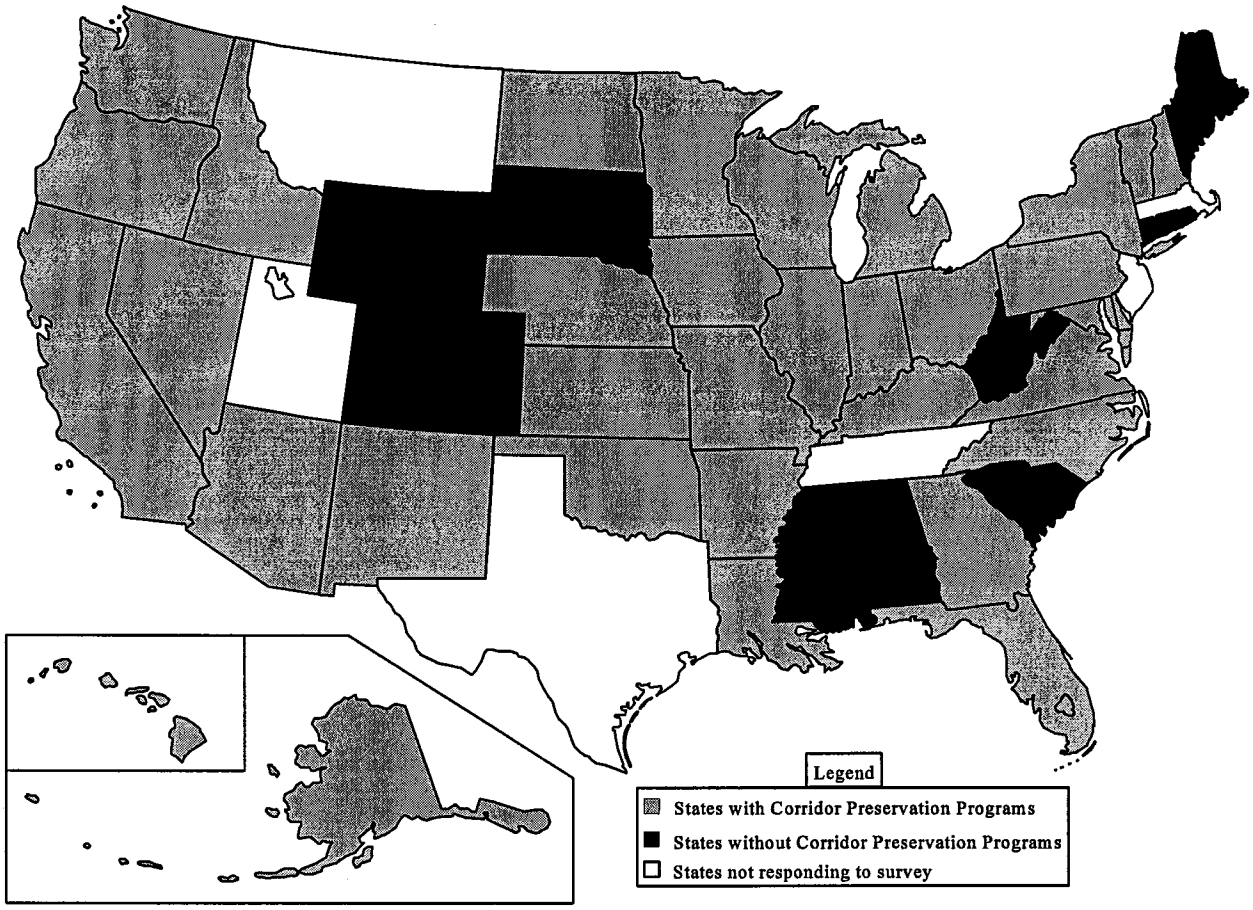

Figure 1
State Participation in Corridor Preservation

Table 1
Corridor Preservation in the United States

States Adopting Corridor Preservation since 1988	States with Corridor Preservation Before 1988	States without Corridor Preservation
Alaska	Arkansas	Alabama
Iowa	Arizona	Connecticut
Nevada	California	Maine
New Hampshire	Delaware	Mississippi
New Mexico	Florida	Rhode Island
New York	Georgia	South Carolina
Ohio	Hawaii	South Dakota
Pennsylvania	Idaho	Wyoming
Vermont	Illinois	Colorado
	Kansas	West Virginia
	Kentucky	
	Louisiana	
	Maryland	
	Michigan	
	Minnesota	
	Missouri	
	Nebraska	
	North Carolina	
	North Dakota	
	Oklahoma	
	Oregon	
	Virginia	
	Washington	
	Wisconsin	

Thirty percent of the states interviewed with corridor preservation practices prior to 1988 have changed their procedures due to court challenges for taking without compensation or legislative changes.

Courts in Florida and Washington have found that their states' corridor preservation practices were unconstitutional as a taking without compensation. The state of Florida stated that their sole reason for modifying their corridor preservation procedures was based on a court decision regarding unconstitutional taking without compensation. The state of Washington identified limited funding and court challenges as factors prompting changes in their state's procedures. Washington had previously recorded the State Transportation Plan with individual counties, but court challenges led to a ruling in which the state was found to have acted unconstitutionally by taking with compensation.

The legislative changes have been used to set procedures for protecting corridors through filing of corridor maps with county recorders in Missouri and postponing development in North Carolina. The state of Missouri recently passed legislation that established procedures for corridor preservation in first and second class counties by filing a corridor map with the county recorder. When building permits are filed, the Missouri Corridor Department is advised and must decide if the property will be acquired and begin the acquisition process within a prescribed time limit. Prior to this legislative change, the Missouri DOT acquired property by protective purchase when it had knowledge that development would occur in a corridor. North Carolina is using corridor protection legislation to postpone development in selected corridors and is in the early stages of using a phased environmental or NEPA process in the systems planning stage to better

develop and select corridors for the system plan. Through this process, the State is lessening the risk associated with the protection of corridors.

The states of Delaware and Oklahoma also have unique reasons for modifying their corridor preservation practices. Delaware's initial corridor preservation project was a pilot with strong FHWA participation. As Delaware felt the impact of ISTEA, they decided that preserving current infrastructure is more viable than letting roads become obsolete with little ability to retrofit them. If Delaware is able to get legislative approval, the state DOT intends to select several more relatively undeveloped highways to protect this year. Oklahoma modified their corridor protection procedures in response to their Statewide Intermodal Transportation Planning Process, which identified corridors for improvement. These corridors will eventually become four-lane facilities. The four-lane right-of-way will be acquired even though traffic might not presently justify its purchase.

Of the states interviewed that did not have any corridor preservation practices in 1988, half have subsequently instituted corridor preservation. A discussion of reasons the remaining states do not develop and manage a corridor preservation program will be discussed at the end of this technical memorandum.

Corridor Identification Criteria

Corridors are identified by a number of different methods. Each state reported unique methods for identifying corridors; however, the three criteria used most are impending/future development, part of the planning process, and projected traffic in the corridor. Examples from several states show how varied States' practices are.

Alaska is unique, in that Alaskan corridors were preserved as part of sorting the ownership of land between the federal and state governments as a result of statehood. Part of the state's land entitlement was used to preserve future transportation corridors. Corridors were selected to provide access to mineral deposits, provide linkages to tidewater or other transportation connectors, and to retain geographic access to all regions of the state.

North Carolina is revising its systems planning process (used to develop transportation plans) to include more coordination with resource agencies and provide better NEPA-like documentation in systems planning.

In Arkansas, corridor identification is usually made at the county, city, and MPO levels. Generally, corridor areas that are exhibiting a sharp increase in property values are targeted for protection.

Washington waits for local permitting agencies to notify the local district or area offices of WashDOT of development that may occur within the right-of-way of proposed projects. There is no formal agreement binding the local permitting agencies to notify WashDOT of impending development. WashDOT then makes a decision to apply for funding to buy the right-of-way before development occurs.

Identifying Priority Corridors

A majority of states do not use separate criteria for determining priority among corridors identified for protection. Of the states which did have separate criteria, the three most commonly used criteria are the planning process, future development, and inclusion of the corridor on the National Highway System (NHS).

In Arizona, priority is given to those locations whose market value is rising faster than other corridors. Project urgency and funding availability also play significant roles in corridor priority.

Maryland designates the highest priority corridors as those where major investments have been made or are planned. Major investments generally include projects for which the design and approval process have been completed and the improvements are waiting for monies to be budgeted for construction. Where no major investments are programmed, Maryland works through the access permit and local zoning process to protect the corridor.

Florida has several criteria to determine corridor priority. The six criteria are (1) corridors that are a part of the Florida Interstate Highway System; (2) corridors that are a state highway system facility with an approved corridor management report; (3) corridors that are a part of either a metropolitan planning organization's (MPO's) adopted long range plan, a Regional Planning Council's strategies regional policy plan, or a local government's comprehensive plan; (4) facility improvements based on safety, emergency evacuation, operational and environmental needs; (5) recommendations of the District Right-of-Way Office; and (6) land development trends that make advance acquisition advisable.

Involvement of Local Government

Most states responded that local government (56 percent) and MPOs (51 percent) play a role in the corridor identification process. This represents an increase from the AASHTO survey in which 52 percent of the states responded that local government played a role in the corridor preservation process. Most states indicated that local governments are responsible for the identification/selection/designation of corridors. Other ways local governments participate in the identification process is through communication/coordination with the state department of transportation (DOT), input to the planning process, and project funding through the MPO.

In New York, local government is involved through a collaborative process with local planning organizations and the DOT. An "access management partnership" between the state and local government encourages new corridor preservation by official mapping of the local roadway network and by a mechanism of land use law advocated in high growth corridors.

Florida noted that local governments may designate corridors as part of their local comprehensive plan. MPOs develop their own long range plans and participate directly in the development of the DOT's five-year work program.

In Pennsylvania, local governments participate in the MPO planning process, assisting in the identification of corridors that are at issue. Local governments are key partners in the Commonwealth's corridor preservation efforts by monitoring both opportunities and threats to preservation.

Both local governments and MPOs in North Carolina ask for functional design on specific projects for right-of-way protection. Local governments use developer interest as a strong measure of which corridors need protection.

Techniques Used in Corridor Protection/Preservation

This section discusses the extent of use of techniques employed to protect transportation corridors. Several techniques were identified by the Texas Transportation Institute (TTI), and states were asked which were used and to rate the effectiveness of each in corridor preservation. States were able to list other techniques not identified in the survey and rated these for their effectiveness. Where techniques were identified as having a low effectiveness, states were asked to explain their perception of why these techniques do not work well.

Techniques Used

States use police power/cooperation with local agencies (51 percent) and early fee acquisition (49 percent) most often in preserving corridors. In 1988, 57 percent of the states responded that advance acquisition was the most used technique, and 42 percent of the states reported using police power/cooperation with local agencies in this survey.

As examples of police powers used by states and local governments, a state law in Delaware gives the DOT access permit powers. Delaware does deny access permits and compensates where required and requested by the property owner. The Florida Department of Transportation encourages local governments to designate and protect corridors through local land use ordinances. A recent state Supreme Court ruling precludes direct involvement by the state in the application of such controls. The most common police powers used by the states are zoning regulations (23 percent), eminent domain, and access permits. The use of zoning regulations in this survey shows a slight decrease from the 1988 survey results where 27 percent of the states reported using this police power.

Moderately used corridor preservation procedures include access management (42 percent) and maps of reservation/official maps (40 percent). The use of maps of reservation/official maps has increased 23 percent from responses in 1988.

The least used protection procedures are options for later purchase (16 percent) and purchase of development rights (7 percent). These two techniques remain the least used from 1988 when 7 percent of the states reported using options for later purchase and 4 percent of the states reported purchasing development rights.

Other techniques used by states varied greatly. Some examples of the various techniques are advance purchase of property, legislation and ordinance creation, and hardship. Delaware sometimes uses purchase of denial of access. The Delaware DOT works closely with planning agencies and property owners to minimize direct access to the protected corridor. By agreement with land use planning agencies, Delaware DOT has a strong impact on rezoning requests. Oregon only purchases abandoned rail lines. The Oregon DOT has found that by listing corridor priorities, a signal is sent out that the DOT is willing to pay a high price for the property. The Oregon DOT always negotiates from the point of view of taking the property off of the railroad's hands.

Technique Effectiveness

Pre-identified techniques were rated by the states on their effectiveness in the corridor preservation process. The effectiveness of techniques not identified in this survey, but identified by the states, is not included in this technical memorandum. Survey results show that the pre-identified techniques are the ones most commonly used in each of the states. The results are shown below in Table 2.

Table 2
Reported Effectiveness of Various Corridor Preservation Techniques

Technique	Reported Effectiveness
Police power/cooperation with local government	average to high
Early fee acquisition	above average to high
Access management	average
Maps of reservation/official maps	average
Purchase of development rights	least to below average
Options for later purchase	below average to average

Problems Associated with Some Techniques

States were asked to summarize the problems they experienced with the pre-identified techniques they rated as ineffective. Again there was a great deal of variety in responses from the DOTs.

Problems associated with the options for later purchase technique included difficulty to sell and to appraise property, property owners being reluctant to enter into an agreement, and property owners seeking larger compensation for their property. Missouri has met with little success using this technique. Missouri has found that property owners are reluctant to execute an option and would rather the DOT actually acquire the property so that the transaction is finalized quickly rather than waiting for the pending purchase. The Missouri DOT also noted that those property owners that are agreeable to executing an option for later purchase often require larger amounts of option money.

Purchase of development rights problems were focused toward unrealistic time frames for the state DOT, difficulty working in the NEPA process time frame, and a view of the state benefiting more from the purchase of the property and leasing the property back to interested tenants. Alaska noted that because they were preserving corridors that may or may not begin to be used hundreds of years into the future, a purchase option is unrealistic. California indicated that a major problem with corridor preservation is the length of time required to identify the preferred location of the route through the NEPA process if federal funds are to be used and the problem of purchasing all or most of the needed parcels prior to commitment of construction dollars. The Delaware DOT states that their real estate division believes this is a poor technique because up to 80 percent of the total value of the property can be associated with these rights. As a result, they would prefer to purchase the property outright and then lease the property back.

Public confusion and anger, along with current legislation hampering efforts to protect corridors, were problems identified with the use of maps of reservation or the use of official maps. The Delaware DOT stated that official maps are useful to discuss with property owners, but the concepts are so volatile that too much public exposure creates confusion and anger. Indiana noted that maps of reservation have not been used extensively because their existing legislation regulates that the land be acquired or condemnation procedures instituted within 60 days of filing. The Indiana DOT feels that this 60 days is too short and is now considering legislation that would revise this constrictive time frame.

Problems experienced with access management were grounded in the possibility of courts ruling for compensation, weak state access management programs, and compromising the safety and operations of corridors. In Florida, state courts have tended to view any substantial restriction of access as a taking of property rights for which compensation must be paid. In North Carolina, access management is not a strong program. North Carolina does have a driveway access review/permit process, but this process is only used to partially control access, not to receive right-of-way. The state noted that at new location projects with very high traffic volumes, these sites are often built as full or partial controlled access. Minnesota stated that the property right of access nearly always compromises the corridor with respect to safety and operations.

Finally, problems reported with using police powers or cooperating with local agencies involved the state's confidence in the local government complying with the corridor protection plan. States cited concerns that local governments may change zoning restrictions in favor of developers' demands or in an attempt to spur economic development in the short term. States were also concerned that local governments view corridor protection as a "state" problem, and that the local government has limited powers to protect vital corridors. Missouri noted that zoning restrictions can keep a corridor open once it is identified, but that local government can change their commitment to holding the property open for future use. Minnesota stated that local governments are implementing their recommendations, but that cities often prefer to remain neutral or are, in fact, biased toward developer's demands. Kansas reported similar concerns and stated their local governments seem to place little emphasis on corridor preservation, particularly versus economic development, because corridor preservation is a "state" problem and the benefits will not occur until after the local officials leave office. In summary, Kansas believes that local governments are concerned with taking advantage of present opportunities and put plans for accommodating the future traffic demand as a low priority.

Successful Projects

Each of the responding state DOTs was asked to identify some of their successful corridor preservation projects and to explain what factors made these projects stand out as exemplary. The responses varied greatly; however, some common themes of successful corridor preservation practices were revealed. The factors contributing to success were identified as partnering between the state DOT and local government, early/advanced acquisition, access management, and use of maps. Partnering was able to bring the objectives and desires of both the state and local governments to reality. Examples ranged from identification of potential corridors to development of financial planning for the corridor project. Access management was cited as important where strong, clearly defined policies were in place.

Other interesting factors were financial support, community support, building permit review, and criteria horizons for advance acquisition. Building permit review was able to identify a potential access problem through the site design and have the developer modify the design to eliminate the access problem. The advance acquisition horizons assist state DOTs in setting priorities in purchasing property through three to five year and five year or more time horizons.

Iowa has used the map of reservation technique on only two projects to date. Both of these projects have been successful in preserving an open corridor for planned improvements. An example of its effectiveness is the review process for a building permit for a retail strip mall. In this case, the developer was prevented from constructing a building within the future right-of-way for a project and prompted to modify the building so it would not be impacted by the future highway improvement. Iowa notes this technique does require a large amount of staff resources because of the required review of all building permits, subdivision plats, and zoning change permits in the corridor.

Pennsylvania noted its Park Road Project in Berks County as a very successful corridor preservation project. Here, local governments partnered with the DOT and several protective purchases were made to acquire properties that had been targeted for development.

Loop 303, Estralla Freeway, in Arizona is considered their most successful corridor preservation project. Most private owners donated land for the corridor with a promise from the DOT to build an interim parkway (which has been built) followed by the construction of the actual freeway at a later date. Arizona includes reversionary clauses in the vesting instruments as a protection to the donee and these clauses would be enforced should construction not begin by a specified date.

Nebraska applied their corridor protection law and early acquisition of right-of-way to successfully preserve the Kennedy Freeway corridor in Omaha. DOT officials note that if this corridor had not been preserved, the project could not have been completed without spending enormous sums of money on right-of-way that had been developed.

US 75 from Bartlesville, Oklahoma, to the Kansas state line is thought of as Oklahoma's most successful corridor protection project. At the time of the road's two-lane construction in 1969, enough right-of-way was purchased for an ultimate four-lane facility. This advance purchase greatly reduced utility and residential and business relocation costs for the state as well as time delays and costs due to environmental documentation and mitigation.

Funding Sources

Few states have either a dedicated funding source (19 percent) or a revolving fund account (7 percent) for advance acquisition of corridors or projects. Those states that did have a dedicated funding source cited several sources for the funding including federal funds, funds programmed through the state legislature, state fuel taxes, bond revenues, and an MPO property tax levy. Arizona's funding source comes from a lump sum amount in the five-year budget program that can only be used for advance acquisition for the metropolitan freeway system and not for acquisitions for the remainder of the statewide program. Florida generates its dedicated funds from bond revenues. State fuel taxes in Hawaii are earmarked for highway development and maintenance, but no portion of the special fund is earmarked specifically for advance acquisition of corridors. Finally, Minnesota is very unique in that the seven county Twin Cities MPO has a property tax levied by the MPO to generate transportation funding.

States indicating the use of a revolving fund account cited the sale of right-of-way parcels, rental income from properties, programmed funds, and Federal Highway Administration matching funds as their sources. Washington State replenishes its revolving fund by the sale of right-of-way parcels and rental from other properties. This fund was depleted from $10 million to a little over $1 million. In Maryland, funds are programmed at $1 million per year for use for access management.

Integration with Planning/Project Development and Environmental Processes

States were nearly split on integrating corridor preservation into the planning/project development and environmental processes within the state. Where integration does occur, it works on either a case-by-case basis or through the NEPA process. Other responses included involving resource agencies and taking a phased approach to integration.

New Hampshire has integrated corridor preservation during the development and updating process of statewide and regional long-range transportation plans. This planning process occurs every two to five years depending on the planning region. Statewide plans are anticipated to be updated every five years. Once a specific project is identified within a preserved corridor, the normal project development and environmental processes are initiated.

In Delaware, corridor preservation is managed continuously through their location studies/environmental studies section. The state uses consultant services to provide technical assistance for survey, mapping, environmental assessment, and future access concepts. Delaware has the completed preliminary assessment of major environmental variables mapped on aerials in order to avoid major problems with future road modifications.

Pennsylvania has integrated corridor preservation into the planning/project development process where possible. In projects such as the Park Road Project in Berks County, preservation efforts revolve around protective acquisition to minimize the cost of right-of-way to the state and to minimize the hardship caused to local residents and businesses within the corridor.

North Carolina is taking a leading role in using a phased environmental approach in systems planning. North Carolina is trying to involve the resource agencies in the selection of approved project corridors that are put on the long-range plan. They believe that this process will lower the local governments' risk in the advanced right-of-way protection effort. Early pilot projects are meeting with acceptance by all involved in the process. More analysis of the process will be done, but North Carolina feels that this is a promising process.

Early/Tiered Environmental Documentation

Three percent more states than in 1988 responded that they never perform or have never considered performing early or tiered environmental documentation as part of the corridor location selection in order to seek federal funding for corridor preservation. States that did perform or consider the early or tiered process (31 percent) responded that problems encountered in the process primarily concerned environmental agencies, public controversy, and the complexity of the tiering process.

Delaware was able to convince environmental agencies that, in principal, corridor preservation on a largely rural, existing alignment was the best way to proceed in order to avoid new location corridors. A new corridor has gone through the traditional EIS route. Delaware intends to purchase the right-of-way and then avoid building the highway for as long as possible.

A supplemental EIS will be the minimum requirement before construction, which is at least 10 years, and most likely 20 years, in the future.

In Georgia, the environmental work is being done to preserve the potential transportation use on Atlanta's northern arc. This will permit the purchase of right-of-way for future development.

Maryland has done a formal tiered EIS and is not likely to repeat the process. The effort was not successful because environmental agencies were not willing to accept less detail at the corridor level and issues were repeatedly revisited. Maryland's DOT is attempting a tiered approach on a few large projects without a formal EIS; however, they feel the process is a tremendous undertaking.

Why Not Identify and Protect Corridors?

State DOTs that did not identify corridors for preservation were asked their reasons for not identifying or protecting corridors. The responses to this question varied widely among state DOTs. Some of the responses included low growth rate, limited resources/personnel, high expense, and few undeveloped areas within the state.

Alabama stated that most of their available funds are committed to current projects. They do not perform corridor studies until the projects are ready to be constructed. Alabama has no provision for expending funds until the project is imminent and necessity can be shown.

Rhode Island is a very densely populated state with few, if any, undeveloped potential transportation corridors. The majority of Rhode Island's transportation program is directed toward maintaining the existing infrastructure. The state is pursuing the preservation of abandoned railroad right-of-way for future transportation needs. The abandoned rail rights-of-way will be used for mass transit (light rail or busways) or as bike paths.

South Carolina believes that, if development occurs, the alignment of the proposed roadway can be altered to avoid the development. In situations where an intersection or interchange location is crucial, limited advance purchase of individual parcels has occurred.

Connecticut stated that the high expense of acquiring property and the uncertainty of gaining environmental clearances for construction makes corridor preservation impractical.

For states such as South Dakota and Wyoming, low growth rates are a predominant factor against preserving corridors. South Dakota generally uses zoning laws for corridor preservation. This technique has only been used in areas that are known to have a potential for high growth, interchanges in need of upgrade in the state's limited urban areas, and for arterials where an upgrade is anticipated. South Dakota can only purchase right-of-way if they have a voluntary settlement. The South Dakota DOT admits that due to their limited resources and personnel, attempts for early right-of-way acquisition would not be an efficient means of operation in their

state. Wyoming simply states that corridor preservation is not pursued because of a low growth rate and greater needs elsewhere.

ISSUES IN CORRIDOR PRESERVATION

A number of issues are also associated with the development and implementation of long-term corridor preservation programs that need to be discussed in order to understand the current state-of-the-practice. In general, these issues can be classified as legal (including regulatory factors) or institutional and are associated with inadequate regulations, property rights, funding limitations, and environmental regulations. A review of these issues is provided here.

Inadequate Regulations and Property Rights Issues

Inadequate regulations covering land use control and acquisition and condemnation strongly affect the ability of states and local communities to protect future transportation corridors. The lack of enabling authority to regulate land use impacts both state and local governments. State governments do not engage in the planning and control of land use. Although many states have enacted official map of reservation legislation, these are generally inadequate because, again, they do not have the authority to actually regulate land use. States must still rely on the local jurisdictions to control the land use within corridors shown on official maps. Local jurisdictions, while empowered to engage in land use planning and regulation, often do not have the ability to adopt more sophisticated controls which can be useful in corridor preservation. Local governments also may be hesitant to utilize their available police powers to restrict the use of property within a corridor because of recent court cases finding these to be takings when total use of the property has been denied. Additionally, where cities have legislation in place to allow local official maps of reservation, the legislation is not adequate because the taking of property without compensation remains (17).

Lack of enabling legislation regarding condemnation and acquisition of property also impacts corridor preservation efforts. Both state and local governments often lack the authority to acquire land through voluntary donations and/or to condemn land through condemnation proceedings. Some states have legislation to support the voluntary conveyance of property, but cannot condemn property in advance, as may be required in the long-term preservation of corridors, because of the "necessity" rule. This rule holds that in order for property to be condemned for public purposes, there must be a need for the property in the immediate future. Advance acquisition using condemnation is available to states under the federal "Q" revolving fund, but funding from this program must be repaid if construction does not begin within 20 years of the purchase. And, in practice, FHWA, due to limited funds, has in some cases reverted to using the previous requirement of repayment if construction has not started within 10 years of the purchase. Additionally, "Q" funds are very limited and, thus, use of this fund cannot be relied on for advance acquisition of property (3, 17).

The protection of property rights under the Fifth Amendment of the U.S. Constitution is without doubt one of the strongest barriers to corridor protection. Often called the "taking

clause," courts have held that where land use regulation restricts the rights of the property owner to the full and legal use of his land, compensation is required. Local governments' use of the police powers to reserve right-of-way for planned transportation facilities has a history of being upheld as constitutional by the courts (except when use of the property is totally restricted). However, the use of maps of reservation at the state level has often been found to violate the Fifth Amendment because they generally totally restrict the use of the property without compensating the owner. Some state mapping laws have been upheld when the restrictions are limited to a reasonable (generally short) time period (3, 17).

There are also institutional issues associated with inadequate regulations for corridor preservations. Many corridor preservation techniques rely on intergovernmental cooperation to be effective. Some state mapping legislation provides a mechanism for state and local cooperation, but without this legal backing, cooperation, in many instances, has been difficult to achieve. Lack of staff expertise and staff and public perception of regulatory limitations are also barriers to corridor preservation. State and local staff often do not have the experience with corridor preservation to understand the concept or strategies available for implementation. Additionally, the perceived taking problems under the Fifth Amendment often inhibit actions to preserve corridors that could legally be pursued.

A lack of administrative support can also be a problem to corridor preservation. Often no staff is committed and responsibilities are divided between planning, project development, and right-of-way personnel. The responsibility for corridor preservation needs to be defined. Insufficient administrative support also affects the use of condemnation for corridor preservation (17).

Funding Limitations

Funding for corridor preservation is a problem at the state and local levels. Consistent funding at an adequate level must be available for corridor preservation programs that rely on acquisition as well as for those that rely on other measures. Funding limitations due to inadequate enabling legislation are most severe at the local level. Local jurisdictions often do not have specific authority to purchase right-of-way to protect future transportation corridors. Although this ability can be implied, local governments often do not have sufficient funding set aside to do this on a continuing basis (17). Generally, local jurisdictions must provide funding for specific projects on a case-by-case basis either through the use of general funds or bond issues. In some areas where local governments have been given the authority and the voters have passed sales tax referenda, funds from the tax proceeds have been set aside specifically for advance acquisition of right-of-way for corridor preservation.

Funding at the state level is also a problem. The costs associated with building and maintaining transportation facilities has increased tremendously, as has the need for new facilities. Money available to state transportation agencies is almost entirely dedicated to meeting immediate transportation needs. Few dollars are available for protecting corridors in which facilities may not be built for 15 or 20 years. Limits on spending exist in some state constitutions, which make it difficult to find additional funding for transportation projects that are not

specifically programmed (17). Additionally, transportation needs must compete with all other pressing needs within the state. Some states have established revolving accounts specifically for corridor preservation. These accounts are generally set up through legislation with either a set amount budgeted annually for the fund or proceeds from the rental or sale of property owned by the state transportation agency used to replenish the fund on an on-going basis.

There are also statutory limits on the amount of federal funding available for corridor preservation. The "Q" fund for advance acquisition loans is limited by the amount appropriated to it annually. Thus, states must compete for use of this fund in corridor preservation and, to date, annual requests have been three to four times greater than the amount available (17).

Making funding available for corridor preservation is a problem at all levels of government. Usually, corridor preservation does not have a high priority given the other, more immediate, needs of local and state governments. The construction of new facilities or improvements to existing facilities provides immediate relief for the traveling public, provide jobs, and stimulate economic development. Voters are often resistant to increasing taxes to pay for right-of-way for a facility that will not provide any benefit for a long period of time (17).

Issues Associated with Environmental Compliance

A clear relationship exists between the success of corridor preservation projects and the level of compliance with environmental regulation. The primary environmental legislation of influence in corridor preservation is the National Environmental Policy Act (NEPA). NEPA was adopted in 1969 and required the federal government to review the level of impact that a federally sponsored project may have on the environment (1). The Act sets national standards and environmental goals by requiring well-defined protection and mitigation procedures to be developed for these projects. Projects that do not meet these standards will forfeit any chance of receiving federal support for the project.

The environmental review process begins prior to the determination of the exact route and alignment while feasibility studies of the proposed action have been initiated. Right-of-way acquisition (full-scale property acquisitions) cannot occur until a final EIS (Environmental Impact Statement), which includes a Record of Decision (ROD), FONSI (Finding of No Significant Impact), or a Categorical Exclusion (CE), has been approved by FHWA (1). Projects are classified into three levels/classes based on the assessment or level of environmental intrusion. The levels/classes and the necessary pieces of documentation required to obtain federal funds are as follows (1, 10, 20).

Class I - A Class I project is considered to be any project that may significantly affect the quality of the human environment (20). An EIS is required for all Class I projects. The EIS must include a description of the purpose and need for the proposed action; a discussion of the alternatives, including no-build scenarios; and a section on the impacts (social, economic, and environmental) of the proposed action, as well as a description of the strategies being implemented

to mitigate any negative impacts. An ROD is issued prior to design development and cost estimations.

Class II - Class II projects are those projects that, by definition, do not have a significant impact on the environment. The projects are given a Categorical Exclusion (CE) classification and are no longer required to comply with the NEPA documentation process.

Class III - A Class III project is one that involves neither a fully developed EIS nor can be given a CE. For Class III projects, the environmental consequences of the project being implemented are unclear. The state transportation agency must develop an Environmental Assessment (EA) to determine the significance of impact of the project. The FHWA then determines, based on the EA, whether the project requires an EIS. A FONSI is issued when it is determined that an EIS is not needed and the project can proceed to the design and development phase.

The issuance of these documents occurs prior to the design development and implementation/construction phases. Any further action beyond the programming/prioritization phase is precluded from occurring without demonstrating completion of the necessary environmental compliance procedures. Public meetings and formal notification of the environmental findings must occur as well before any activity within the right-of-way can begin (1).

Some exceptions, such as hardships to landowners and protective purchases, circumvent the process by allowing the state to acquire property in advance of demonstrating NEPA compliance. Advance acquisition allows the state to purchase limited amounts of right-of-way prior to completing any of the NEPA requirements. Advanced acquisition is not without its problems. States may not have the necessary funds available to implement advanced acquisitions along a corridor and the availability of federal revolving right-of-way funds, or "Q" funds, is inconsistent (6).

The primary issue associated with regulatory environmental compliance and corridor preservation is timing. Accurately complying with all of the environmental regulations for preservation of a corridor can be difficult. The amount of analysis that must be completed can be complicated and time consuming. Furthermore, environmental impacts can be especially difficult to assess during the early stages of corridor preservation when it is unclear which alternative may be chosen, what the final alignment of the project may be, and the degree of environmental impacts (6). In some instances, project delays can exceed five years while the environmental assessment is conducted when the need for preserving an identified corridor may be immediate.

The NEPA process has, in itself, been criticized as too burdensome and inflexible. The timing issue and its relationship to costs has come to the forefront of most literature regarding this subject (1, 6, 10). The speed with which environmental compliance occurs appears to be impacted by the type of corridor (existing or new) and by the character of the land (6). Expansion

of existing corridors appears to be less affected by environmental regulations than new corridors. Existing facilities potentially have fewer applicable alternatives and limited area within which to expand. In contrast, new facilities may require greater amounts of land acquisition and may involve greater responsibilities regarding review of several alternatives. Areas with existing development are also less likely to have the "takings" issue surface than undeveloped corridors.

Timing is a critical issue considering the potential of competition for the same piece of property by developers or other public agencies. Land identified to be preserved for a transportation corridor can be lost to private development, speculation, or by the actions of another governmental agency during the environmental approval process (1, 10). For developers, the development approval process at the local level is much shorter than the federal environmental review process required of state agencies using federal money. As a result, land designated as a future transportation corridor can be lost entirely due to construction by the developer or to the prohibitive costs associated with a piece of property once a developer has received development approvals.

Furthermore, other public agencies can unwittingly compete for the same land during the environmental review process. Land that might be viewed as a future transportation corridor by the state transportation agency may be viewed as a community park by the local government (6). Therefore, intergovernmental coordination during the corridor preservation process (including the environmental review process) is essential to reduce land use and/or policy conflicts.

Additionally, when preservation projects are delayed in order to meet environmental requirements, cost becomes another major issue. The final cost and location of corridor preservation projects can be significantly impacted during the environmental review and assessment phase of corridor preservation. Right-of-way costs can increase because of changes in nearby land uses, inflation, or planned growth from the private development sector (10). Construction costs for labor and equipment can also increase while state transportation agencies await the completion of the regulatory compliance phase.

Other Sources of Environmental Compliance Issues

Although NEPA is recognized as having the greatest impact on corridor preservation projects, there are numerous other environmental laws that can impact corridor preservation projects including the Clean Water Act, the Endangered Species Act, the Coastal Zone Management Act, and the Historic Preservation Act. As defined by the Council on Environmental Quality (CEQ), the NEPA compliance process ensures that each of these laws, including Executive Orders, are considered during the project development process (1, 21).

The 1990 Clean Air Act Amendments (CAAAs) require states to develop transportation plans in conformity with air quality standards as defined by the Environmental Protection Agency (EPA). The conformity requirements are restricted to those urban areas with severe levels of smog. The EPA established emission budgets for metropolitan areas considered to be in nonattainment of the NAAQS. The emission budgets for each metropolitan area are defined

within the State Implementation Plan (SIPs). These areas cannot propose transportation-related projects that would cause the metropolitan region to exceed the emission budget.

In some instances, air quality conformity and corridor preservation efforts can be in conflict. Any urban area with severe air quality conditions will have a difficult time advancing corridor preservation projects that propose expanding existing highway facilities. State transportation agencies must prove that the additional capacity will not cause the metropolitan area to exceed the emission budget for the region.

ISTEA and Tiering

The 1991 ISTEA legislation required that corridor preservation be "considered" during state or regional long-range transportation plans (6). This marked a major change in federal policy regarding corridor preservation and long-range transportation planning. Prior to ISTEA, corridor preservation was not included in federal planning regulations.

ISTEA also provides a framework for the NEPA process to be streamlined in order to expedite corridor preservation or right-of-way authorization process (10). This process is often referred to as "tiering." Tiering occurs in two phases. The first phase occurs as part of the state and regional transportation planning process (6). The Tier-One document studies the project as a locational issue rather than a detailed analysis of a specific corridor or option. The first phase reviews all of the potential roadway location alternatives in enough detail to determine which location may be the most environmentally sound alternative. The documentation, either an EA or EIS (depending on the level of environmental impact), provides the necessary framework for the federal government to become involved in the project. Without these documents, federal money will not be available for the project. Upon completion of the first phase, or Tier-One document, the project is eligible for federal funding and acquisition of right-of-way in the preferred corridor can begin (21).

The second phase of the tiering process documents specific impacts and mitigating strategies of the selected alternative within the preferred corridor. The EA or EIS will provide detailed information on project specific issues, the environmental consequences of the project, design alternatives, mitigation strategies, and any details that may be necessary for permit applications (10, 21). The Tier-Two document becomes the final and complete EA or EIS for the project (21). Upon completion of both phases, any further acquisition of right-of-way can occur and construction can begin.

According to the literature, the concept of tiering expedites the environmental review process that is required by NEPA by eliminating the amount of detail that must be analyzed in order to select a corridor location. The process is considered to be particularly advantageous in areas that are developing rapidly and where competition for right-of-way may be a problem.

CONCLUSIONS

The state-of-the-practice review indicates an increasing emphasis on corridor preservation by state DOTs. A number of states, particularly high growth states such as California, North Carolina, and Florida, have been very proactive in protecting corridors for future improvements even prior to ISTEA. Other states have enacted more limited corridor preservation programs. Many other states have been working to gain local government and public support as well as supporting legislation for corridor preservation.

The survey of state DOTs found that more states have a corridor preservation process now than when surveyed in 1988. Some states have scaled back their proactive programs due to court challenges, but still continue to protect transportation corridors through carefully selected means. For states not implementing a corridor preservation program, the only similarity found was that for some of the Rocky Mountain and Deep South states, low growth rates or corridor protection being viewed as unimportant were the controlling factors for not implementing corridor preservation efforts.

No consistent criteria or methodology was found for identifying transportation corridors for preservation or protection. The most commonly used criteria are impending/future development pressures, identification through the planning process at the state or local levels, and the projected traffic demand in the corridor. Most states do not have separate criteria to rank which previously identified corridors receive a higher priority in their preservation.

Local governments and MPOs play vital roles in almost all states employing corridor preservation. Local governments and MPOs assist in identifying targeted corridors, coordinate/communicate with the state DOT, assist through the use of their land use regulatory authority to protect right-of-way, and generate project funding for acquiring property in the corridor.

The most effective corridor preservation techniques, as identified by the practices found in the literature and the survey, are the use of police powers in cooperation with local governments and early fee acquisition. Access management and maps of reservation or official maps were rated with average effectiveness. States consistently rated the techniques of purchase of development rights and options for later purchase as being the least effective measures of those identified.

The largest problem associated with corridor preservation is the issue of taking without compensation. Several of the states have had to revise their corridor preservation legislation and/or procedures as the result of court rulings. Other states have enacted very limited preservation programs because of the risk of litigation with respect to this issue. States should be certain that compensation is provided where required to avoid courts ruling that a corridor preservation technique is unconstitutional. States should also work to gain the approval and commitment of local governments and the general public for corridor preservation projects. Efforts should be made to clearly state the benefits of preserving a transportation corridor in the

present so that future transportation demands can be met with a lower overall cost to build the expanded facility.

Current project development and environmental requirements have also acted as deterrents to corridor preservation. Integrating corridor preservation procedures with planning/project development and environmental process would appear to be a logical procedure. However, a minority of states conduct early or tiered environmental documentation during their corridor preservation efforts. Potential problems with this process appear to hamper its widespread use throughout the United States. States that did perform early or tiered environmental documentation note that problems in the process primarily involve lack of support from environmental agencies, public controversy, and the complexity of the tiering process. Where integration is used, state DOTs work to include other resource agencies in the process and to adopt a phased approach.

Few states have dedicated or revolving fund sources for supporting corridor preservation. Where dedicated sources are available, funds are generated through either the sale of bonds, levying fuel or property taxes, or replenishing the fund account through rental income from state property.

Corridor preservation procedures, when developed and applied with consideration for all parties, can be quite effective. The cost savings of acquiring property in the present for expanded transportation facilities in the future have been demonstrated many times. High acquisition and construction costs can be found for facilities now under construction in large metropolitan areas. A lack of proactive involvement in preserving critical transportation corridors may lead to exorbitant project costs or undesirable alternatives to meet the project traffic demand.

CHAPTER 2—ANALYSIS OF CORRIDOR PRESERVATION TECHNIQUES FOR TEXAS

As part of this study, the corridor preservation techniques identified in the summary of the state-of-the-practice were reviewed for application in Texas. This included a review of applicable Texas laws and enabling legislation, the Texas Administrative Code, and appropriate TxDOT policies in order to determine whether the Texas Department of Transportation (TxDOT) currently has the legal and/or administrative authority to employ each of the identified techniques. The following material summarizes the findings of this review for the techniques defined in the previous chapter.

Density Transfer [Permits the land owner to build, on a portion of the property outside of the right-of-way boundary, the square footage or number of dwelling units that were planned for the entire parcel.]

Analysis: This technique has no relevance for TxDOT. The Department does not control private site design. Density per se is usually controlled through land use controls such as zoning. Only municipalities in Texas have authority to zone. It would require major new state legislation to empower TxDOT to control density through land use controls.

Conclusion: This technique cannot be applied by TxDOT for corridor preservation, but could be used in a coordinated effort with local governments to protect corridors.

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 right-of-way (ROW).]

Analysis: This technique could be used by TXDOT. However, major new state legislation would be required to authorize the Department to engage in this activity. It would be possible for the Department to establish a relationship with the Texas General Land Office (GLO) in which land owned by the GLO could be exchanged for property taken as a part of corridor development. It might also be possible for the system to include the selection of GLO properties that have higher density limits or more beneficial zoning classifications than those being traded by the property owner. Such a system would be complex and would probably require additional personal to organize and manage. However, it is certainly within the realm of possibility to create and administer such a system.

Conclusion: This technique has potential application for use directly by TxDOT with new legislation. It could also be used in a coordinated effort with local governments.

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.]

Analysis: This technique is not applicable. The Department is not a taxing authority and has no power at present to impose/abate taxes. Thus, major state legislation or perhaps even a constitutional amendment would be required. A tax abatement system would also require a very complex organization structure involving additional personnel.

Conclusion: This technique has no application for use by TxDOT. However, local jurisdictions could use this technique to reduce taxes on property within designated corridors.

Donations [Local ordinances are used to encourage property owners to donate right-of-way for future transportation corridors, which allows the state to use the land's fair market value as a credit towards matching shares in federal aid highway projects under ISTEA.]

Analysis: Title 43 (Transportation), Section 21.7 of the Texas Administrative Code allows TXDOT to accept donations. Thus, this technique is very applicable and could be utilized without the necessity of new laws.

Conclusion: This technique is applicable.

Land Swapping [Alternative pieces of land are offered from the agency's inventory of excess property to the developer in exchange for their parcel or parcels.]

Analysis: Please see the statements above, regarding Transferable Development Rights.

Conclusion: This technique has potential application.

Highway Platting [The developer voluntarily creates separate lots for right-of-way where he expects public agencies to eventually purchase these lots.]

Analysis: This technique is driven entirely by the subdivider/property owner. There is nothing under Texas law that would bar an individual from platting using this technique. However, there are some serious issues involving expectations on the part of the property owner. For example, if the owner identifies and plats property with a highway corridor designation, does such platting create a legal expectancy for highway improvements from TXDOT. In other words, would TXDOT be legally responsible for providing the highway improvements if it accepts the platted lands that have been donated by the subdivider? Under contract law theory, the Department could be held liable for failure to provide such improvements. This estoppel or "reliance" argument would probably be as follows: "but for the improvements promised by TXDOT the donation of the land and the platting of the corridor land would not have occurred." Thus, this technique would only be useful in situations where the property owner wants development to occur and where TXDOT is fully committed to providing highway improvements.

Conclusion: This technique has a limited application.

Public/Private Partnership [A joint development process allowing a developer to dedicate the right-of-way while receiving compensation from income derived through joint development.]

Analysis: TXDOT does not presently engage in urban development/redevelopment activities. It is quite doubtful that this technique could be utilized in Texas. It is probably more suited to projects such as those involving the creation of tax increment finance (TIF) districts or other similar urban

development/redevelopment programs. However, such programs are usually collaborations between cities and the private sector. Thus, there are few if any opportunities for direct involvement with TXDOT.

Conclusion: This technique has limited potential. With the proper authority, TxDOT could utilize this technique. It could also be used in a cooperative effort under local jurisdiction authority.

Interim Uses [Allows a low-intensity land-use designation to be applied to property that will eventually be acquired as corridor right-of-way.]

Analysis: TXDOT does not control land use. Thus, in the absence of major state legislation the Department would have no way of using this technique.

Conclusion: This technique has no application by TxDOT, but, again could be used by local jurisdictions in a cooperative effort.

Irrevocable Offer to Dedicate [A commitment by a landowner or developer to dedicate land for right-of-way. Control of the property is exchanged when the facility is built.]

Analysis: This technique has the benefit of irrevocability. However, it appears to be fraught with the same problems associated with the Highway Platting technique. (See the discussion of that technique on the preceding pages.)

Conclusion: This technique has a limited application. Legally binding assurances from TxDOT that the facility will be built would likely be required by the owner.

Option to Purchase [Is a conditional agreement in which the government agency agrees to pay for the right to purchase the property at a later date as long as the condition of the property remains unchanged.]

Analysis: This technique is essentially an option contract tucked inside a standard fee simple purchase. This technique would impose a premium on the eventual purchase of the site. The premium would be paid in exchange for time. There is nothing that would prevent TXDOT from using this technique. However, it would probably result in an extra cost for the eventual purchase of the property. There are also other significant issues such as how long the property owner would be willing to wait before developing the property, and secondly, determining an appropriate value on the waiver of development rights for a specified period of time.

Conclusion: This technique could probably be used in Texas but would be costly.

Eminent Domain This technique is the fundamental tool presently used by TXDOT for securing highway right-of-way. However, with regard to long-term corridor preservation, the issue of "necessity" would need to be addressed.

Zoning [Is an application of the police power by a government agency, based on the concept of nuisance and created to separate incompatible land uses by mapping the jurisdiction into zones or districts. 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.]

Analysis: At present, zoning could not be used by TXDOT as a tool for controlling land use in highway corridors. That power is limited almost exclusively to municipalities. Even counties in Texas generally have no authority to zone or control land use.

However, one could conceive of a system in which TXDOT would be permitted to control land use in areas that have been designated as "Official Corridor Districts." Under such a system, TXDOT would designate and certify the corridor with an officer or agency of state government. Once certified and made public, TXDOT would then be empowered through state statutes to control the land use within the corridor boundaries. TXDOT could zone the property to the least intensive land-use classification and to the lowest possible density. Thus, if no development has already occurred at the time the property is certified, TXDOT could zone the property for large-lot single-family residential or an equally low-intensity land use. While not preventing development in the corridor, it would materially reduce the cost of purchasing property because fewer business, commercial, or industrial sites would have to be purchased in the long run.

Such a system would require major state legislation. However, given the tremendous cost of sites for right-of-way development, it is not inconceivable that the Department could get legislative support for such a system.

Conclusion: This technique is presently unusable but might have an application if enabling legislation were passed at the state level. Under current legislation it can be used by local jurisdictions in a cooperative effort with TxDOT.

Access Management [Prevents the overuse of existing transportation facilities by limiting the amount of access to them. Also referred to as capacity protection.]

Analysis: Under the terms of Article 43 (Transportation), Section 21.2 of the Texas Administrative Code, TXDOT has the authority to control access on controlled access highways. However, in most other situations highway access is controlled by municipalities, or is uncontrolled. Major state legislation would be necessary to permit TXDOT to control access on thoroughfares other than those that are designed for controlled access purposes. In the absence of traffic levels warranting such limited access, there would be no justification for TXDOT control.

Conclusion: This technique is not feasible under TXDOT's current code. It could, however, be used more extensively if the proper authority was granted. This technique is more applicable for protecting the capacity of existing roadways rather than preserving right-of-way for future improvements.

Exactions [Are mandatory contributions by a developer to the local jurisdiction in order to receive approval for a zoning change, site plan approval, special use permit, proposed subdivision, or any other development that might warrant permission by local government agencies.]

Analysis: Exactions are most closely associated with subdivision development. However, exactions are outside of the present legal authority of TXDOT. It would require new state legislation to permit the Department to exact land for corridor development purposes. Moreover, recent case law suggests that it would be very difficult to exact such property and meet current Fifth Amendment requirements regarding the so-called "taking issue."

Conclusion: This technique has no application for TxDOT in preserving corridors, but could be used by cities in a cooperative effort.

Growth Management [Is a mechanism utilized to ensure that the rate of development does not exceed the availability of public facilities by employing state and local government regulatory powers to influence a community's spatial distribution of activities.]

Analysis: Growth management is a technique that is presently used only by municipalities in Texas. The technique is usually based on a combination of zoning, subdivision regulation, and capital improvements programming at the local level. It has no application to state highway construction.

Conclusion: This technique has no application.

Setback Ordinances [Are methods used to preserve right-of-way by preventing construction within certain distances from curbs, property lines, structures, etc.]

Analysis: Presently, only municipalities are empowered to establish setback ordinances. These ordinances are limited in their effectiveness because of the legal limitations on the governmental control of the use of private property. If enabling legislation were adopted it might be possible for TXDOT to execute agreements with municipalities relating to corridor development through setback ordinances. However, the benefits of this technique would not be realized in instances where the setback precluded reasonable use of the property.

Conclusion: This technique has a limited application. Local jurisdictions could use this technique provided the setback requirements allow reasonable use of the property.

Subdivision Regulation Ordinances [Are local ordinances that regulate the subdivision and platting of land into lots and blocks and the provision of infrastructure.]

Analysis: Like zoning, subdivision regulation could not be used by TXDOT as a tool for controlling land use in highway corridors. That power is limited to municipalities and, to a lesser extent, counties.

Conclusion: This technique has no application for TxDOT, but could be used by local jurisdictions in a cooperative effort.

Development Easement [Is a method of acquiring the use of a parcel of land without transfer of ownership. The typical approach for right-of-way acquisition is for the government agency to purchase the property owner's right to develop the land.]

Analysis: TXDOT probably has the power to create development easements with property owners. However, the application of this technique for corridor development purposes seems to be marginal. This technique offers an interim solution that would require additional financial costs associated with the corridor development process. The initial costs would be for the purchase of the development easement. The second cost would be for the actual fee simple purchase of land needed for the right-of-way.

Conclusion: This technique has a limited application.

Moratoria [Is a procedure that restricts development in a specific area until appropriate plans have been adopted and is used to provide time to revise a land use plan or zoning ordinance or to provide time to upgrade facility plans.]

Analysis: Moratoria is not recommended for use as a technique for corridor development because its use violates recent U.S. Constitutional law rulings by the U.S. Supreme Court regarding the Fifth Amendment and the so-called "takings issue."

Conclusion: This technique has no application.

Reservation [Is the designation of a proposed transportation facility right-of-way on an official map or a subdivision plat approved under a subdivision ordinance.]

Analysis: Texas law does not presently permit TXDOT to impose reservations of property on a landowner. Since TXDOT is not involved in zoning or subdivision control, the application has no application in Texas. However, the theoretical system described under the zoning technique discussion above, would create a program not terribly dissimilar from the reservation technique.

Conclusion: With the proper legislation this technique might have application at some point in the future.

Fee Simple, Negotiated Agreement, and Protective Buying All three of these techniques are presently used by TXDOT, and constitute the primary means by which corridors are secured for transportation facilities.

Abandoned Corridor 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.]

Analysis: This technique could be very effective for securing right-of-way for both thoroughfares and pedestrian/bicycle trails. There are no state laws that would presently impede the Department's use of this technique.

Conclusion: This technique has potential as a tool for corridor development.

SUMMARY

A total of 24 techniques were reviewed for potential use in Texas for corridor development purposes. Under current law, seven of these were found to be unsuitable. The seven were density transfer, tax abatements, interim uses, exactions, growth management, subdivision ordinances, and moratoria. However, with the exception of moratoria, all of these techniques could be used by local governments in a cooperative preservation strategy with TxDOT.

Five of the techniques were found to have potential use. There were transferable development rights, land swapping, zoning, reservation, and abandoned corridor acquisition. All of these except the acquisition of abandoned corridors will require new enabling legislation for use by TxDOT. Again, they could be used by local jurisdictions.

The remaining 11 techniques were found to be fully or moderately applicable. Of these, six techniques were found to be limited in their application. These were highway platting, public/private partnerships, irrevocable offer to dedicate, option to purchase, setback ordinances, and development easements. The remaining five techniques are those that are most commonly used at present including fee simple purchase, negotiated agreements, protective buying, eminent domain, and donations.

CHAPTER 3—PROPOSED CRITERIA FOR IDENTIFICATION AND EVALUATION OF TARGET CORRIDORS FOR PRESERVATION

As part of this project, preliminary criteria have been developed to assist TxDOT in identifying and evaluating target corridors for preservation action. Findings relative to selecting corridors for preservation are highlighted and a recommended procedure for use by TxDOT was developed.

SUMMARY OF THE LITERATURE REVIEW AND SURVEY

The literature review and the telephone survey conducted under Task 1 of the study provided information on the current practices of other state Departments of Transportation (DOTs) as well as the recommendations made by other comprehensive corridor preservation studies. The information gathered under Task 1 relative to selecting and evaluating corridors for preservation efforts are summarized below.

The 1990 *Report of the AASHTO Task Force on Corridor Preservation* recommended that corridors for preservation should be identified during the system planning process, both at the local level by metropolitan planning organizations and the statewide level by the state DOT (2). The AASHTO recommended criteria for identifying and determining priority corridors for preservation during system planning are listed below.

- The need for the project within the corridor has been identified and the proposed improvement is expected to be a priority within the next 10 to 15 years.
- Failure to protect the corridor for future transportation improvements could force the project into an environmentally sensitive area and/or result in many more relocations.
- Significant development within the corridor is beginning to occur or is expected to occur within the time required to complete the project development process.
- Land values within the corridor are escalating rapidly.
- Local government and private sector support exists for preserving the corridor for future improvements.

In order to identify and evaluate corridors for preservation during system planning, additional information that may not normally be available at this stage of planning, such as more detailed area economic, market, and development conditions, will need to be developed. Sufficient study of the need for the project as well as the potential environmental impacts would need to be accomplished during system planning to ensure that the integrity of the environmental and alternative analysis processes are maintained (2).

The report prepared by Rivkin Associates for the Federal Highway Administration, (3) listed two key criteria that should be used to identify potential corridors for preservation actions. It was recommended that these criteria be met before a corridor be considered for preservation.

- The target corridor must appear in local and/or statewide transportation plans that have been developed based on the analyses of roadway/transit capacity and demand, purpose and needs findings, and review of consistency with local plans.

- Sufficient environmental analyses must have been conducted for the corridor to demonstrate a feasible alignment generally free of serious environmental constraints. Evidence that the anticipated impacts will be minimal in comparison with other corridor alternatives must be documented.

Once corridors have been identified and the minimal environmental documentation has been performed, the Rivkin study recommended that a checklist consisting of five items could be used to establish a simplified priority rating system for corridor preservation efforts. These five items are discussed below.

Importance of the Corridor. A method to rate the relative importance of the planned improvement to the local area and/or statewide transportation system in the next 10 to 20 years should be established. Suggested ways to determine the relative importance include traffic projections and analyses of future system deficiencies, continued monitoring of population and economic projections and major development proposals, and project approvals and construction permits within affected communities.

Immediacy of Development. If development pressure does not exist within the corridor it is difficult to justify spending limited funds to protect the right-of-way. A method to determine if current and short-term future development is a threat to the land needed for the proposed transportation improvement should be established. This will require coordination between the state DOT, MPO, and local development review agencies to monitor land development and land prices. A strategy is needed to identify if/when key parcels may be lost if action is not taken to prevent development (or work with developers to protect the right-of-way) before construction funds become available. Suggested methods include a coordinated system for monitoring development plans and land price changes within the corridor area.

Risk of Foreclosing Options. If development within the corridor were to occur, important options may be lost and project alternatives may be more costly in terms of environmental, economic, and social impacts. Thus, a method should be developed to assess and rate the transportation, environmental, economic, and social impacts that would result if all or part of the selected corridor were lost through development.

Opportunity to Prevent Loss of the Corridor. The corridor to be protected should contain modest development such that preservation action would make a difference in terms of reduced costs and displacements. Additionally, methods to protect the corridor other than

acquisition of right-of-way, such as police power or developer agreements, should be available for use. Methods to assess the relative cost-effectiveness of preserving a specific corridor should be included in determining corridors for priority action.

Strength of Local Government Support. The level of local commitment to the proposed transportation improvement and preservation of the corridor is very important if preservation actions are to be successful. The availability of preservation tools and the willingness of the local governments to use those tools to assist in preserving the needed right-of-way should be prerequisites to initiating corridor preservation actions.

The Rivkin report also suggested that because of the multitude of differences between areas within a state, it may be difficult to assign actual numerical values to any evaluation used to rank corridors on a priority basis. If a system of points is established it should be "relative and approximate," and provide generalized values to each criteria in the priority process. Additionally, the report suggested that any corridor preservation selection process will require "considered judgment" on the part of the state transportation agency to make the determination on whether to initiate preservation actions on any specific corridor (3).

The survey of state DOTs performed as part of this study asked each state what criteria they used to identify corridors for protection (if they did have a corridor protection program); if separate or different criteria were used for determining priority among corridors and, if yes, what those criteria are; and whether MPOs and/or local governments played a role in the process of identifying corridors for protection. Forty-three out of the 50 states responded to the survey and the summary responses to the questions concerning identifying and prioritizing corridors are highlighted below.

Each state appears to have a unique method for identifying corridors for preservation action. However, four elements were found to be common to the practices of most states.

- The corridors are considered to be a state priority and are included in local and/or state adopted plans.
- Projected traffic volumes indicate a vital need for the project.
- Current or anticipated development is threatening the corridor.
- There is public support for the proposed project.

Most states do not have separate/different criteria for determining priority among corridors identified for protection (No - 21 states, Yes - 7 states). States that do have different criteria generally use the following to rank corridors for protection.

- The corridor is included in the local and/or MPO adopted transportation plan.
- Land values within the corridor are escalating.
- A critical need for the corridor has been established.
- The corridor is part of the National Highway System (NHS).

A majority of states indicated that the local governments and MPOs play a role in the process of corridor identification (Yes - 22 states, No - 6 states). The major factors that seemed to influence the involvement of the local government/MPOs are included below.

- The corridor is part of the local plans.
- There is communication between the state DOT and the local planning agencies regarding the project.
- There is interest on the part of developers and/or landowners.

In summary, the information found in the literature as well as the results of the study survey indicate several general factors that are considered important in identifying and selecting corridors for preservation efforts. These include:

Determination of the Need for the Project. This would include sufficient study and documentation that the project is warranted and is important to the future transportation system (a priority project within 10 to 15 years) in terms of mobility, air quality, and/or economic development. The project must be part of the local and/or statewide adopted transportation plan.

Completion of Initial Feasibility Study/Environmental Documentation. To ensure that the project may be eligible for future federal and/or state funding, an initial planning study and environmental documentation of the proposed project and alternative alignments should be conducted. The study should include sufficient information to determine what options would be available/lost if the corridor was not preserved and document the environmental, transportation, social, and economic impacts of available options. This process should include public meetings and hearings relative to the range of alternative improvements and alignments considered.

Evaluation of the Opportunity to Preserve the Corridor. There is a need to identify the relative chance of success in the effort to preserve a corridor for 10 or 15 years. There should be strong local government, citizen, and developer support for the project. The affected local governments and planning agencies should be willing to assist in preserving the corridor through the most appropriate and cost-effective means available. Additionally, the greatest opportunity to preserve corridors exists for those that are ready to be developed, but have not yet been heavily developed.

Evaluation of the Costs and Benefits. Preservation of the corridor should result in reduced project costs and accrue benefits versus not preserving the corridor.

PROPOSED CORRIDOR IDENTIFICATION CRITERIA AND EVALUATION SYSTEM FOR TxDOT

A checklist of factors similar to the method of evaluation found in the Rivkin report is proposed for use by TxDOT in identifying and evaluating corridors for preservation action. The checklist includes two criteria for identifying corridors to be considered for preservation and four general areas with appropriate questions within each area to assist in determining priority corridors. These are discussed below.

Identification of Corridors for Consideration

To be considered for preservation action, a target corridor should meet the following two criteria.

1. The corridor, along with the proposed improvement, should be a project that is in the regional and/or statewide adopted long-range plan. The plan should be based on an analysis of roadway/transit capacity versus current/future demand and needs and should be consistent with local plans. Furthermore, a plan that targets a corridor for preservation should include two essential elements: 1) evidence of intergovernmental coordination, and 2) funding for preservation of the corridor.

2. For any corridor to be a candidate for preservation, sufficient environmental analyses should have been conducted to demonstrate a feasible alignment free of serious environmental constraints. This documentation should show that the impacts associated with the selected corridor are minimal when compared with the other alternatives, including the no-build alternative. This work should document the loss of viable options should preservation not occur.

The first criteria, that a target corridor be included in an area's long-range plan, is not particularly difficult to meet provided the corridor is important to the area's transportation needs during the plan horizon. As part of the development of the long-range plan, some areas perform an initial analysis of alternative improvements in order to select the most cost-effective project to serve the identified need. The element describing intergovernmental coordination strategies for corridor preservation is necessary because TxDOT cannot carry out corridor preservation on its own. TxDOT does not have the land-use and development control powers that are often vital to the success of corridor preservation. Evidence of funding is also essential because even if a preservation strategy relies heavily on regulatory powers over land use, any corridor preservation strategy must meet constitutional requirements. That is, regulatory powers cannot be so restrictive that they constitute a "taking" of property. Thus, funding must be available to make advance purchase of the needed right-of-way when other preservation techniques are unsuccessful.

There are several issues relative to this first criteria. First, it requires a "new" element, local governmental coordination, for inclusion in the long-range plan. This element would consist of a description of the intergovernmental coordination effort relative to preserving each identified corridor. Second, it requires funding to be set aside for the purchase of right-of-way as needed in order to avoid having the preservation effort considered a taking. Thus, a dedicated source of funding for corridor preservation, such as a revolving fund, would need to be established or funds available for current projects would need to be set aside for use as needed in preserving the corridor.

Environmental documentation is generally not performed on a project until later in the project development stage — usually much later than what is needed for corridor preservation. As a result, meeting this criteria will require that an early environmental assessment be

performed on the range of potential improvements and alignments for any corridor that is to be considered a target for preservation. The purpose of this assessment is to determine an environmentally preferred corridor. This is important to minimize the risk that the target corridor will be disapproved after time and funding have been spent on preserving the right-of-way.

Table 3 provides a checklist of questions that would need to be answered affirmatively in order for a corridor to be considered for preservation action.

Table 3
Checklist for Corridor Identification

Determine if the long-range plan requirements have been met for target corridor.

- Is the target corridor included in the regional and/or statewide transportation plan?
- Was the plan developed based on an analysis of roadway/transit capacity and needs assessment?
- Is the plan consistent with local plans?
- Does the plan include an outline of proposed strategies for intergovernmental cooperation for preservation of the corridor?
- Does the plan include some funding for the purchase of right-of-way within the corridor?

Determine if the environmental documentation has been performed.

- Has an initial, preliminary environmental assessment been conducted for the corridor alignment?
- Is the proposed corridor generally free of serious environmental constraints?
- Has a public participation process been performed for the corridor alignment and the preservation action?

Evaluation of Corridors for Preservation Action

Corridors that meet the above two criteria should be evaluated in order to determine those corridors that should be targeted for preservation efforts. This evaluation is needed to ensure that limited resources, both staff and funding, are used most effectively. It is proposed that the checklist of factors shown in Table 4 be used to assist in identifying priority corridors. The checklist is proposed for use in evaluating corridors located within urban and rural areas. However, not all the criteria are applicable to rural corridors. A discussion of the type of data that could be used to answer the questions is discussed below.

Corridor Importance

Much of the information needed to determine the corridor's importance will be available from data used to develop the long-range plan for the area. Current and forecasted traffic, the year the facility will be needed, the impact of not building the facility, current and anticipated surrounding land use, and connections to other transportation facilities is normal information used by agencies to prepare the long-range plan. Many areas select projects for inclusion in their plan using a rating system that considers the existing capacity versus future demand, the impact of the no-build option and connectivity. Thus, this information would be readily available for consideration in rating priority corridors.

The economic development potential of the improvement is more difficult to determine. However, such questions as whether or not the corridor is part of the National Highway System or the Texas Trunk System, whether the corridor is important for freight movements, and whether the corridor would serve trips destined to major areas of employment or other transportation centers could assist in making the determination of economic development potential for the project.

Data that should be readily available for use in ranking the importance of the corridor include:

- current and forecasted volume to capacity ratio for the facility and the surrounding facilities for the build and no-build alternatives,
- National Highway System or Texas Trunk System status of the corridor,
- existing development type along the corridor, and
- current zoning of undeveloped property.

Threat of Development

Information relative to current and future growth in terms of population and employment are developed as input to the model used to forecast future demand for facilities in the planning process. Past, current and anticipated future growth in population and employment can be provided from these data and used to assess the rate of growth within the corridor versus the region. Data on current type and density of development and the zoning of undeveloped property within the corridor are generally readily available from local planning departments. Additionally, local planning departments can provide the information relative to current interest in development within the corridor by reviewing zoning change requests, subdivision plats, and site plans that have been received. Close contact and communication with the local planning agency would also allow for early notification of development interests relative to critical locations within the corridor, or those key parcels that, if lost, could increase project costs in terms of environmental or construction costs, or could preclude or delay project approvals.

A review of the past five to 10 years of change in land values within the corridor may provide an indication that the values are rising more rapidly than other areas within the region. Tax records can provide this information.

Table 4
Checklist for Evaluation of Corridors for Preservation Action

Determine ***the Importance of the Corridor.***

- What future year is the facility/improvement anticipated to be needed?
- What is the current and 20-year forecasted traffic volume for the facility?
- What traffic impact would the no-build option have on other roadways in the area or on the existing roadway?
- Would the facility provide an important connection between other major transportation facilities?
- What type of current and/or anticipated future development would the proposed facility serve?
- Would the facility be important to freight movements?
- Is the facility important to the economic development of the region and/or state?
- Is the corridor part of the National Highway System or the Texas Trunk System?

Determine the Threat of Development.

- What is the current and anticipated future growth rate for the area served by the proposed facility versus the region as a whole?
- Is development currently occurring within the corridor? If yes, what type and density? If no, has there been any interest in development within the corridor?
- Are land prices escalating within the corridor? How does the increase in the value of land compare to the region as a whole?
- Are any key parcels within the corridor anticipated to be lost to development within the next one to two years?
- Are there critical locations that must be preserved for the project?

Analysis of Other Options.

- Are there any other options that will provide the needed transportation capacity? If yes, what are those options and do they have greater/lesser environmental impacts or increased/decreased project costs in terms of relocations, property costs, and loss of tax base?

Analysis of Opportunity to Protect the Corridor.

- What percentage of the land within the corridor is already developed?
- What percentage of the land within the corridor is anticipated to be developed by the time the project right-of-way would be purchased under normal project development time?
- What would be the expected difference in cost between preservation of the corridor now versus acquisition of right-of-way in the future?
- What methods are available for protection of the corridor? (If the corridor is located within local government jurisdiction are they willing to use police powers? Are developers open to agreements to preserve the right-of-way?)
- Is there general public support for the project so that if protection efforts are initiated they will be supported for the next 10 to 15 years?

Other Options

The analyses conducted as part of the system planning and preliminary environmental assessment for the project will provide the information needed to assess options to provide the needed transportation capacity. The environmental impacts, estimated costs, and anticipated benefits could be summarized in tabular form.

Opportunity to Protect the Corridor

Information relative to the current percentage of developed land within the corridor is available from local planning agencies or via field inspection of the corridor. The percentage of land that may be anticipated to be developed by the time right-of-way would be purchased within the normal project development time could be estimated using information developed as part of the travel forecasts prepared for system planning. Average densities (based on current development and zoning) within the local area could be used in conjunction with the forecasted population and employment for traffic analysis zones in the area to estimate the future percentage of developed land.

The anticipated difference in cost between preservation of the corridor versus future right-of-way purchase could be estimated using historic data on land values. A trend line analysis of the increase in land values for the region, local area, and specific corridor area could be performed using available tax records to determine a reasonable rate of growth in the value of property for the corridor. This growth rate could then be applied to the current average cost for property within the corridor to determine the anticipated future cost of right-of-way. Estimates of the cost for preserving right-of-way is a little more difficult to prepare. Included in the cost of preservation are staff time needed to assemble and prepare the information for corridor preservation efforts such as the cost of preparing an early environmental assessment and conducting public hearings; the cost of monitoring development, including review of development proposals and negotiation with developers/owners; as well as any other staff time required to implement specific requirements of the corridor preservation program.

Assessing the methods available to protect the corridor will involve discussions with local area governments to determine their willingness to assist in the preservation efforts as well as review of the methods available to TxDOT for corridor preservation.

Support for a particular project can be assessed via the public meetings held for the region's long range transportation plan, the specific meetings relative to selection of the corridor alignment, and discussions with local staff, planning commissions, and/or city councils. Support of the project by the development community should also be assessed.

CHAPTER 4—IMPLEMENTATION RECOMMENDATIONS

Under ISTEA, states are required to consider implementing a corridor preservation program designed to consider protection of corridors in transportation plans and identify strategies to protect those corridors. This chapter outlines a series of actions for TxDOT to follow in the development and implementation of a corridor preservation program.

STEPS FOR DEVELOPING A CORRIDOR PRESERVATION PROGRAM

TxDOT should develop a statewide strategy for protecting corridors. Given the size and diversity of the state, it is recommended that the Department consider a preservation strategy that allows the use of a broad range of corridor preservation tools. Individual tools and strategies can then be developed to accommodate the political and development conditions of the area in which individual corridors selected for preservation action are located.

The review of the state-of-the-practice in corridor preservation illustrated policies, procedures, and strategies used by a number of states in pursuing corridor preservation. These examples, as well as a process for formulating corridor preservation programs suggested by the Rivkin study (3), were used to formulate a series of steps that can be used by TxDOT in developing its own program for protecting corridors. These steps include:

- Inventory Available Powers and Resources,
- Evaluate and Select Techniques,
- Initiate Measures to Secure Needed Legislation,
- Develop Policy and Procedures,
- Initiate Internal Reorganization, and
- Develop External Support for the Program.

Furthermore, TxDOT should establish a multidisciplinary corridor preservation team charged with formulating the policy, procedures and strategies for use in Texas. Staff from the planning, programming, project development, environmental, right-of-way, budget, legal, and legislative departments, district offices, as well as outside members from FHWA and EPA, should be included on the team.

1. Inventory Available Powers and Resources

An initial inventory of powers was undertaken as a part of this study in the review of techniques appropriate for Texas. There are only a limited number of techniques that are, under current Texas law and Administrative Code, available for use by TxDOT for corridor preservation. As a result, new enabling legislation and/or administrative code will need to be pursued in order to provide the tools necessary to preserve corridors on a statewide basis.

TxDOT needs to perform a comparable inventory of financial resources for advance acquisition. As shown in so many of the examples, funding must be available for the advance

purchase of key parcels and when other corridor preservation techniques fail to protect the needed right-of-way. TxDOT should examine what sources of funding can be made available to provide for advance acquisition. Funds might be made available from the fuel tax, general fund, state bonds, and/or special funding under local initiatives such as sales tax. If insufficient funding is available from current sources, additional legislation to provide funding for corridor preservation may need to be drafted.

2. Select Techniques

Twenty-two corridor preservation techniques were identified in the state-of-the practice review. These techniques were reviewed for application in Texas in light of current Texas law and Administrative Code. As shown in Table 5, only eight can be employed by TxDOT under existing legislation and code. As noted, the diverse conditions across the state will require the use of a wide variety of corridor preservation tools. Each of the 25 urban areas within the state operates under different political and development conditions. The land-use controls employed by the local jurisdictions will differ significantly as will the level of staff expertise. Additionally, techniques for use in rural areas must be considered. As a result, TxDOT should pursue gaining the necessary authority to utilize as many of the corridor preservation tools as possible. Of particular importance is the ability to work in concert with local jurisdictions. This may take the form of legal agreements between TxDOT and the affected local jurisdictions or an informal cooperative process. Both formal and informal intergovernmental cooperation strategies should be adopted by TxDOT for use in protecting corridors.

3. Initiate Measures to Secure Needed Legislation

If the preferred corridor preservation techniques selected by TxDOT will require enabling legislation, or change to the administrative code or revised internal policy, efforts should be initiated to secure these changes. It is particularly important to begin the process of proposing and enacting major new legislation. The Texas Legislature meets only every other year. In order to enact the required legislation as quickly as possible, it will be important for TxDOT to be proactive in drafting the required legislation, securing appropriate sponsors for the bill, and garnering support across the state among key decision-makers in favor of the legislation.

4. Develop Policy and Procedures

TxDOT will should formulate an official policy for corridor preservation in Texas. It is recommended that this policy be made as comprehensive as possible so that the Department is directed to aggressively pursue corridor preservation in selected locations according to the area's unique conditions. To the greatest extent possible, TxDOT should make this policy straightforward and comprehensive such as Caltrans' policy that directs the agency to ".....explore all appropriate means for the acquisition and preservation of.....corridors" (15).

Table 5
Assessment of Techniques for Texas

Technique	Currently Available for Use by TxDOT	Potential for Use by Local Jurisdictions	Requires New Legislation or Code for Use by TxDOT
Density Transfer		X	X
Transferable Development Rights		X	X
Tax Abatements		X	X
Donations	X	X	
Land Swapping			X
Highway Platting	X		
Public/Private Partnerships			X
Interim Uses		X	X
Irrevocable Offer to Dedicate	X		
Options to Purchase	X		
Zoning		X	X
Access Management			X
Exactions		X	X
Growth Management		X	X
Setback Ordinances		X	X
Subdivision Regulations		X	X
Development Easements	X	X	
Moratoria			
Reservation		X	X
Fee Simple Protective Purchase	X		
Fee Simple Advance Acquisition	X		
Negotiation	X		
Eminent Domain	X		
Abandoned Corridor Acquisition	X		

Subsequent to developing a corridor preservation policy, TxDOT should formulate the procedures that will be followed by Department personnel in implementing corridor preservation. These procedures should provide guidelines to be followed by staff. In formulating the procedures, consideration should be given to the level of effort required by, and the risks associated with, the techniques made available for use. For example, Florida specified three corridor preservation options: 1) informal corridor protection that involves working with local governments to encourage the voluntary use of reasonable land-use regulations; 2) formal corridor protection through legal written agreements with local jurisdictions; and, 3) advanced acquisition options (18). FDOT covered virtually every aspect of these options in their guidelines from the types of studies necessary to target a corridor for preservation to deadlines for meeting the various requirements specified (3).

The procedures developed by TxDOT should formally assign the responsibilities involved to either specific Divisions within the agency or to District offices. It is imperative for Department personnel to understand their individual responsibilities within the program.

5. Initiate Internal Reorganization

Once the corridor preservation procedures have been developed and general Division/District responsibilities identified, TxDOT should develop an internal organization to manage and implement the procedures. With the full support of the Senior Management Team, TxDOT will need to "rethink" the normal process used to plan and develop a project so that corridor preservation can be accommodated within the organizational structure. It is suggested that an interdisciplinary team approach be used to implement the program. Consideration should be given to involving planning, programming, project development, right-of-way, environmental, and legal personnel in the internal corridor preservation team. A method for involving outside agencies such as FHWA, EPA, Metropolitan Planning Organizations, and local jurisdictions as needed should also be a part of the process.

Depending on the techniques made available for corridor preservation, TxDOT may need to develop:

- an internal organization structure that provides for coordination of the affected Divisions and Districts,
- an internal mechanism for monitoring land development trends and land values within selected corridors,
- a procedure for monitoring local decisions affecting selected corridors,
- a method to review applications for zoning, subdivision and/or building permits,
- a process for negotiating with landowners/developers, and
- a procedure for working closely with local jurisdictions of areas with targeted corridors.

It will also be important for TxDOT to develop and implement training for those directly involved with its corridor preservation program. This training should be made available to TxDOT personnel as well as the staff and public officials of local jurisdictions and developers. The training should review the need for corridor preservation, describe the techniques available,

explain the corridor preservation program and responsibilities, and offer guidelines for implementation.

6. Initiate External Support for the Program

As illustrated by successful preservation projects and programs, there are many players both inside and outside of the state transportation agency involved in preserving corridors. In order for corridor preservation to be successful in Texas, it must be an inclusionary process. That is, from the very beginning, TxDOT should provide for participation from other affected/involved agencies (including local jurisdictions, FHWA, EPA, etc.), developers, and private landowners. TxDOT will need to take a proactive role in developing support for corridor preservation. There are several methods that can be used by the Department to accomplish this.

- Institutional Outreach. TxDOT should promote participation by outside agencies beyond those recommended for the program development stage. Continual contact should be maintained with appropriate federal and state agencies, city councils, county commissioner courts, local planning departments, and metropolitan planning organizations. Local business groups such as chambers of commerce, development organizations, and environmental organizations should also be included in this outreach effort.

- Technical Assistance. TxDOT can provide staff to assist and support the efforts of local jurisdictions in planning and implementing corridor preservation. Formal training as described above can also be made available. Assistance in performing or funding any requisite analytic studies or corridor plans can also be provided by TxDOT.

- Public Information. It will be imperative that TxDOT formulate a public information strategy to support corridor preservation. This strategy could involve a comprehensive public information campaign and include support for TxDOT staff to become involved in local planning, development and/or business groups. TxDOT should provide speakers to local groups and promote their availability.

- Advisory Task Force. TxDOT may want to consider forming advisory task forces to participate in identifying and selecting corridors to be targeted for preservation. Such a task force should include affected agencies, landowners, developers, and citizens and would serve to bring interested parties into the process early in an effort to build strong support for the program.

7. Initiate a Pilot Corridor Preservation Program

Subsequent to developing a statewide corridor preservation program and adoption of the enabling legislation, it is recommended that TxDOT initiate a pilot assessment of the program. Utilizing the corridor selection techniques, TxDOT should identify three corridors representing different areas and projects. Depending on the strategies adopted, the Department should consider a pilot assessment involving a new transportation corridor and protection of an existing

corridor for future expansion. The pilot program should involve projects in large and small metropolitan areas as well as a rural area.

The pilot assessment program will serve to assist TxDOT in evaluating the selected techniques and procedures, the internal organization, and the external relationships. Furthermore, it will provide valuable information that can be used to test and modify the procedures and to train additional staff.

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APPENDIX A —— DETAILED SUMMARY OF SURVEY RESPONSES

States with procedures to identify corridors that should be protected/preserved:

RESPONSE: YES ----33

NO ------10

QUESTION 1: Name, Title, Department, State

See Appendix B for corridor preservation contacts in each state.

QUESTION 2A v.1: Have you modified or changed your procedure for identifying corridors to be protected?

RESPONSE: YES ----10

NO ------14

If yes, why were the procedures changed/modified?

SUMMARY RESPONSE:

Court challenges - taking without compensation	-----	2
Legislative changes	-----	2
Limited funding	-----	1
Formalize procedures	-----	1

If yes, how do you now identify corridors?

SUMMARY RESPONSE:

Development	-----	4
Planning process	-----	3
Traffic	-----	2
Public involvement	-----	1
Interest of other state agencies	-----	1

QUESTION 2A v.2: What criteria do you use in identifying corridors?

SUMMARY RESPONSE:

Development	-----	5
Traffic	-----	3
Natural resources	-----	2
Intermodal	-----	2
Planning	-----	2
Environmental	-----	2

QUESTION 2B: Do you have separate/different criteria for determining priority among corridors identified for protection?

RESPONSE: YES ----7

NO -----21

If yes, what are those criteria?

SUMMARY RESPONSE:

Part of planning process	-----	3
Development	-----	3
Environmental	-----	3
On NHS system	-----	2
Urgency	-----	2
Funds availability	-----	2
Critical transportation linkages	-----	2
Major design investments	-----	1
Operations	-----	1
Mineral potential	-----	1
Alternative routes	-----	1

QUESTION 2C: Do local government or metropolitan planning organizations play a role in the process of identification?

RESPONSE:

Local Government	MPOs
YES ----24	YES ----22
NO -----8	NO -----7

If yes, how does local government participate in the process?

SUMMARY RESPONSE:

Identify corridors (identify/select/designate)	-----	10
Communication/coordination with DOT	-----	4
Planning process	-----	2
Request DOT to preserve	-----	2
Help develop DOT work program	-----	2
Funding through MPO	-----	2
Regulations	-----	1
Access management	-----	1
Official maps	-----	1
Participate in protection	-----	1
Public involvement	-----	1

QUESTION 3: What procedures are used for corridor preservation/protection by your agency?

RESPONSE:

Police Power/Cooperation with Local Agencies	-----	22
Early Fee Acquisition	-----	20
Access Management	-----	18
Maps of Reservation/Official Maps	-----	17
Options for Later Purchase	-----	7
Purchase of Development Rights	-----	3

List Police Powers Used:

Zoning Regulations	-----	10
Access permits/control	-----	5
Eminent domain	-----	4
Maps	-----	3
Land Use Plans	-----	1
Setback Requirements	-----	1
Master Plans	-----	1
Transfer of Development Rights	-----	1
Access Regulations	-----	1
DOT review	-----	1

Other:

Early fee acquisition	-----	5
Access management/control	-----	4
Purchase of property	-----	2
Legislation and ordinance creation	-----	2
Hardship	-----	1
Protective Acquisition	-----	1
Land conveyance in fee	-----	1
Informal agreements with local governments	-----	1
Preferential right of acquisition	-----	1
State environmental quality review act	-----	1
Highway work permit process	-----	1
Donations	-----	1
Cooperation of adjacent landowners/developers	-----	1
Impact on rezoning requests	-----	1

For each of the procedures identified above, please rate on a scale of 1 to 5 (1 being not effective and 5 being very effective) how effective the technique has been in preserving corridors.

Access Management

1 -----	1
2 -----	5
3 -----	6
4 -----	3
5 -----	4

Maps of Reservation/Official Maps

1 -----	0
2 -----	5
3 -----	6
4 -----	5
5 -----	2

Early Fee Acquisition

1 -----	0
2 -----	0
3 -----	5
4 -----	5
5 -----	10

Options for Later Purchase

1 -----	1
2 -----	3
3 -----	3
4 -----	1
5 -----	0

Purchase of Development Rights

1 -----	2
2 -----	2
3 -----	0
4 -----	0
5 -----	1

Police Power/Cooperation with Local Agencies

1 -----	2
2 -----	4
3 -----	8
4 -----	2
5 -----	5

QUESTION 4: For any of the preservation techniques identified as not being effective, briefly summarize the problem(s) experienced with implementing this technique.

SUMMARY RESPONSE:

Access Management		
Courts may rule for compensation	-----	1
Not a strong program	-----	1
Corridors compromised with respect to safety and operations	-----	1
Lack of commitment	-----	1
Maps of Reservation/Official Maps		
Public confusion and anger	-----	1
Current legislation hampers efforts	-----	1
Options for Later Purchase		
Difficult to sell and to appraise	-----	1
Property owners reluctant	-----	1
Owners require large amount of money	-----	1
Purchase of Development Rights		
Unrealistic because of time frame	-----	1
Rather purchase and lease back	-----	1
NEPA process time frame	-----	1
Police Power/Cooperation with Local Agencies		
Local government may change zoning restrictions	-----	1
Only local governments have limited powers	-----	1
Locals are biased in favor of developer's demands	-----	1
Locals prefer economic development	-----	1
Locals view protection as a "state" problem	-----	1

QUESTION 5: What would you consider your most successful corridor preservation effort to date? Please identify what preservation techniques were used and why you consider it to be the most successful or your projects.

SUMMARY RESPONSE:

Partnering between state DOT and local government	-----	5
Early/advanced acquisition	-----	4
Access management	-----	3
Use of maps	-----	3
Purchase of ROW	-----	3
Financial support	-----	2
Community support	-----	1
Building permit review	-----	1
Acquisition horizons	-----	1
Donated land and promise to build interim facility	-----	1
Early preliminary assignment	-----	1
Commitment	-----	1

QUESTION 6: Does your state have a dedicated source of funding or use a revolving fund account for advance acquisition of corridor or projects

SUMMARY RESPONSE:

Dedicated Funding Source	Revolving Fund Account
YES ----8	YES ----3
NO -----24	NO -----24

If yes, what is the source of the dedicated funding?

SUMMARY RESPONSE:

Federal funds	-----	2
Programmed through legislature	-----	2
State fuel taxes	-----	1
Bond revenues	-----	1
MPO property tax levy	-----	1
Trust fund	-----	1
Legislature	-----	1
Surface transportation program funding	-----	1

If yes, how is the revolving fund replenished?

SUMMARY RESPONSE:

Sale of ROW parcels	-----	1
Rental income from properties	-----	1
Programmed funds	-----	1
FHWA matching funds	-----	1

QUESTION 7: Has corridor preservation been integrated into the planning/project development and environmental processes in your state?

RESPONSE: YES ----19

NO -----14

If yes, how has this been done?

SUMMARY RESPONSE:

Case-by-case basis	-----	3
Through NEPA process	-----	2
Statewide Transportation Plan	-----	1
Involve resource agencies	-----	1
Phased approach	-----	1
Early in planning environmental process	-----	1
Late in project development process	-----	1
Only developing conceptual plans	-----	1
Long range plans	-----	1

QUESTION 8: Have you ever performed or considered performing early or tiered environmental documentation as part of the corridor location selection in order to seek federal funding for corridor preservation?

RESPONSE: YES ----13

NO -----19

If yes, what if any problems did you encounter?

SUMMARY RESPONSE:

Environmental agencies	-----	2
Public controversy	-----	1
Complexity of tiering process	-----	1

QUESTION 9: If your agency <u>does not</u> identify corridors for preservation, what is the reason for not identifying/protecting corridors?

SUMMARY RESPONSE:

Low growth rate	-----	2
Some advance purchase at critical interchange/intersection	-----	1
Limited resources/personnel	-----	1
High expense	-----	1
Left to MPO/local agencies	-----	1
Pursuing abandoned rail ROW	-----	1
Alter proposed alignment	-----	1
Few undeveloped areas	-----	1

APPENDIX B—CORRIDOR PRESERVATION CONTACTS

Mr. Clyde Stotlzfus
Special Assistant to the Commissioner
Dept. of Transp. and Public Facilities
Alaska DOT

Mr. Bill Carwile
Environmental Coordinator
Alabama DOT

Mr. Alan Meadors
Staff Research Engineer
Arkansas State Highway &
Transportation Department

Mr. Cal Pepper
Deputy Chief Right-of-way Agent
Right-of-way Administration
AZ DOT

Mr. Pat Weston
Chief, Advanced System Planning
California DOT

Mr. James E. Lewis
Rights of Way Administrator
Transportation Dept
CT DOT

Mr. Charlie Altevogt
Delaware DOT

Mr. John L. Garner
Manager
R/W Production and Program Operations
Fl DOT

Mr. Marte Rosen
Transportation Planner
Planning Department
Georgia DOT

Mr. Ronald F. Tsuzuki
Head Planning Engineer
Highways Division
HI DOT

Ms. Pamela Lowe
Planning Services Manager
Transp. Planning & Programming Division
ID DOT

Mr. Bill Yuskus
Bureau Chief
Statewide Program Planning
ILOT

Ms. Tamara Nicholson
Transportation Engineer I
Office of Project Planning
IW DOT

Mr. James O. Brewer
Engineering Manager
State Road Office, Bureau of Design
Kansas DOT

Mr. Chuck Knowles
Section Manager
Statewide Planning
Transportation Planning Division
KY Transportation Cabinet

Mr. William T Jack, Jr.
DOTD Programs Management Division
Chief
La DOTD

Mr. Paul J. Minor
Director
Bureau of Planning
ME DOT

Mr. Daniel Schieb Jr.
Access Management Coordinator
Maryland State Highway Administration

Mr. David Geiger
Supervisor
Highway Planning unit-Project Planning
MI DOT

Mr. Brian Vollum
Area Planner/Liaison
Metropolitan Division
MnDOT

Mr. Jim Mathews
Chief of ROW
ROW Division
MS DOT

Mr. Sam Masters
Asst. Division Engineer
Design Division
Missouri Hwy and Transp Department

Mr. Arthur B. Yonkey
Project Development Engineer
NE Department of Roads

Mr. John Whitaker
Roadway Information Systems Manager
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Mr. Charles Gullicks
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ND DOT

Mr. Gary E. Coburn
Statewide Planning Administration
Office of Planning
Ohio DOT

Mr. Roger Saunders
Manager
Transportation Planning Branch
Planning Division
OK DOT

Mr.Ed Immel
State Rail Planner
OR DOT

Mr. Larry M. King
Deputy Secretary for Planning
Transportation Department
PennDOT

Mr. Edmund T. Parker, PE
Chief Design Engineer
RI DOT

Mr. Oscar K. Rucker
Right-of-way Administrator
SCDOT

Mr. Larry Weiss

Division of Engineering
SD DOT

Mr. J. E. Orcutt
Transportation Engineering Program
Supervisor
VA DOT

Ms. Cindy Garso
Civil Engineer
Systems Planning Group
Planning Division
Vermont AOT

Mr. Todd Carlson
Wash DOT

Mr. G. Spencer Garrett
State Planning Engineer
Transportation Planning
WY DOT