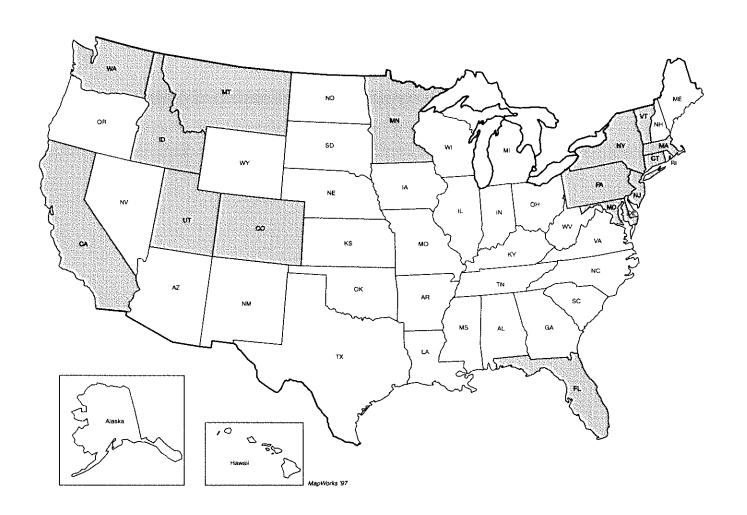
## CHAPTER 4: TRANSFER OF DEVELOPMENT RIGHTS

MAP 4.1: STATES WITH LOCAL TDR PROGRAMS TO PROTECT FARMLAND, 1997





Transfer of development rights (TDR) programs allow landowners to transfer the right to develop one parcel of land to a different parcel of land. Generally, TDR programs are established by sections of local zoning ordinances. In the context of farmland protection, TDR is used to shift development from agricultural areas to designated growth zones closer to urban services. The parcel of land where the rights originate is called the "sending" parcel. When the rights are transferred from a sending parcel, the land is restricted with a permanent conservation easement. The parcel of land to which the rights are transferred is called the "receiving" parcel. Buying these rights generally allows the owner to build at a higher density than ordinarily permitted by the base zoning. TDR is known as transfer of development credits (TDC) in California and in some regions of New Jersey.

BRIEF DESCRIPTION
OF TDR PROGRAMS

TDR programs are based on the concept that property owners have a bundle of different rights, including the right to use land, lease, sell and bequeath it, borrow money using it as security, construct buildings on it and mine it, subject to reasonable local land use regulations. Some or all of these rights can be transferred or sold to another person. When a landowner sells property, all the rights are transferred to the buyer. When an owner conveys a right-of-way to a power company, only the right to use the land for the specific purpose is transferred. When a landlord leases an apartment to a tenant, the tenant gains the right to use the property for the term of the lease. TDR programs enable landowners to separate and sell the right to develop land from their other property rights.

TDR is a local technique used predominantly by counties, municipalities, towns and townships. There are two regional TDR programs for farmland protection that were developed to protect New Jersey's Pinelands and the pine barrens of New York's Long Island.

TDR programs are distinct from purchase of agricultural conservation easement programs because they involve the private market. Most TDR transactions are between private landowners and developers. Local governments generally do not have to raise taxes or borrow funds to implement TDR. A few jurisdictions have experimented with public purchase and "banking" of development rights. A TDR bank buys development rights with public funds and sells the rights to private landowners.

TDR programs are designed to accomplish the same purposes as publicly funded purchase of agricultural conservation easement programs. They prevent non-agricultural development of farmland, reduce the market value of protected farms and provide farmland owners with liquid capital that can be used to enhance farm viability.

TDR programs also offer a potential solution to the political and legal problems that many communities face when they try to restrict development of farmland. Landowners often oppose agricultural protection zoning and other land use regulations because they can reduce equity. APZ can benefit farmers by preventing urbanization, but it may also reduce the fair market value of their land. When downzoning is combined with a TDR program, however, landowners can retain their equity by selling development rights.

FUNCTIONS AND
PURPOSES OF TDR
PROGRAMS

#### **BENEFITS**

**BENEFITS AND** 

### DRAWBACKS OF TDR

· TDR protects farmland permanently, regardless of who owns it.

- Participation in TDR programs is voluntary in the sense that landowners are never required to sell their development rights.
- TDR promotes orderly growth by concentrating development in areas with adequate public services.
- TDR programs allow landowners in agricultural protection zones to retain their equity without developing their land.
- TDR is a market-driven technique—private parties pay to protect farmland, and more land is protected when development pressure is high.
- TDR programs can be designed creatively to accomplish a variety of community goals in addition to farmland protection, including the protection of environmentally sensitive areas, the development of compact urban areas, the promotion of downtown commercial growth and the development of agricultural water supplies.

## **DRAWBACKS**

- TDR programs are technically complicated and require a significant investment of time and staff resources to implement.
- TDR is an unfamiliar concept. A lengthy and extensive public education campaign is generally required to explain TDR to citizens.
- The pace of transactions depends on the private market for development rights.
   If the real estate market is depressed, few rights will be sold, and little land will be protected.

## **BRIEF HISTORY**

## TRENDS IN TDR

The National Agricultural Lands Study reported that 12 jurisdictions had enacted TDR programs to protect farmland and open space, but very few of these programs had been implemented by 1980. In the 1980s and 1990s, many additional local governments adopted TDR ordinances. In California, for instance, the Tahoe Regional Planning Agency and more than sixteen other counties and cities enacted TDR programs to protect natural areas<sup>2</sup>. The number of farmland-oriented TDR programs also grew. By 1997, more than 40 local jurisdictions offered TDR as a farmland protection option (see Table 4.1, p. 123).

TABLE 4.1: LOCAL GOVERNMENTS WITH TDR PROGRAMS FOR FARMLAND, 1997

State/County	Date Ordinance Enacted	Acres of Farmland Protected	Total Acres Protected	Notes
California			6 19 18 17	
Marin County	not available	660	660	
San Mateo County	1986	40	40	Bonus rights awarded for development of
S I OL:	1007			agricultural water storage
San Luis Obispo	1996	0	0	Appraisals used to allocate development rights
Colorado Pouldo Consta	1005	250	250	
Boulder County  Connecticut	1995	approx. 350	approx. 350	
Windsor	1003			
	1993	0	0	Open Space Preservation Program
Florida	1000		\ \ \	
Palm Beach County	1992	0	640	County buys development rights on environmentally sensitive land
Idaho				CAVIORACITATIC SEISTING SAIN
Fremont County	1992	not available	not available	
Maryland				
Calvert County	1978	not available	7,700	Sale of one right results in easement on balance of property
Caroline County	1989	not available	not available	
Charles County	1991	315	315	Sale of one right results in easement on
Harford County	1982	not available	not available	balance of property Sending and receiving parcels must be within 500 feet of each other
Howard County	1993	700	2,000	
Montgomery County	1980	38,251	38,251	Mandatory program
Queen Anne's County	1987	<b>1,7</b> 40	1,740	
St. Mary's County	1990	0	6	
Talbot County	1989	500	580	
Massachusetts				
Sunderland	1974	not available	not available	
Townsend		0	0	
Minnesota	6 5 6 8 8			
Blue Earth County	1977	not available	not available	
Montana				
Springhill Community, Gallatin County	1992	360	360	Mandatory program
New Jersey				
Lumberton Township, Burlington County	1985	0	0	
New Jersey Pinelands Commission	1981	5,180	13,364	Mandatory program

State/County	Date Ordinance Enacted	Acres of Farmland Protected	Total Acres Protected	Notes
New York				
Eden	1977	31	37	
Perinton	1993	56	82	Open Space Preservation Program
Central Pine Barrens (Long Island)	1995	30	60	Program designed to protect environmentally sensitive land
Southampton	1972	0	232	
Pennsylvania				
Buckingham Township, Bucks County	1994	280	280	
Chanceford Township, York County	1979	not available	not available	
Codorus Township, York County	1990	40	40	Transfers between adjacent parcels in common ownership only
East Hopewell Township, York County	1976	20	20	Transfers between parcels in common ownership only
East Nantmeal Township, Chester County	1994	0	0	
Hopewell Township, York County	not available	not available	not available	
London Grove Township, Chester County	1995	0	0	
Lower Chanceford Township, York County	1990	200	200	Transfers between adjacent parcels in common ownership only
Manheim Township, Lancaster County	1991	190	190	County has TDR Bank
Shrewsbury Township, York County	1991	15	15	Rights may be transferred to low-quality farmland only
Springfield Township, York County	1996	not available	not available	
Warrington Township, Bucks County	1985	0	0	Rights used for commercial/industrial development
Washington Township, Berks County	1994	0	0	
Utah			4 4 2	
Tooele County	1995	0	0	
Vermont				
Jericho .	1992	0	0	
South Burlington	1992	45	<b>2</b> 45	Open Space Preservation Program
Williston	1990	0	0	
Washington				
Island County	1984	88	88	
Thurston County	1995	0	0	Mandatory program

#### **ACCOMPLISHMENTS**

Local governments in Maryland have been very active in approving and implementing TDR programs. By 1995, nine Maryland counties had adopted TDR programs to protect farmland; three had placed substantial acreage under conservation easements (see Table 4.1)<sup>3</sup>. The TDR program in Montgomery County, Md., located immediately to the northwest of Washington, D.C., is the best example of the potential of TDR to protect farmland. By 1997, the county had protected more than 38,000 acres in its 89,000-acre Agricultural Reserve, and rights to build more than 6,000 houses had been shifted to the county's TDR receiving areas. (Sections of Montgomery County's zoning ordinance that create regulations for the TDR program are included in Appendix G, p. 140). Calvert and Queen Anne's Counties have protected more than 7,700 and 1,500 acres of farmland, respectively, through TDR. The six other counties that have TDR programs (Caroline, Charles, Harford, Howard, St. Mary's and Talbot) have protected little or no farmland to date.

In New Jersey, a TDR program is protecting an agricultural and environmentally sensitive area known as the Pinelands, covering almost a million acres in the south-central region of the state. Approximately 13,000 acres have been protected by the program since 1981, 39 percent of which were farmland.

The Pennsylvania legislature approved TDR authorizing legislation in 1988; at least 13 townships have created some form of TDR program to date. Several townships have not had any transfers and the rest have experienced a very modest number of sales of development rights. For the state as a whole, TDR programs to date have protected fewer than 500 acres.

## **CHALLENGES**

Montgomery County's experience demonstrates that TDR can be a very effective farmland protection tool. Few TDR programs, however, have protected a significant amount of farmland. Some jurisdictions have had TDR ordinances on the books for more than a decade without completing a single transfer. The slow pace of transfers in other counties around the nation attests to the difficulty of implementing TDR programs.

In states where local governments have only those powers that the state legislature has expressly or implicitly delegated to them, local governments may need special enabling legislation to implement TDR.\* In Virginia, county governments have tried and failed to implement TDR programs. Even in New Jersey, which has long sought to give local governments substantial power to manage their affairs, the lack of enabling authority inhibited the development of municipal TDR programs until 1993, when the power was delegated to them<sup>4</sup>.

<sup>\*</sup> Enabling legislation is necessary because TDR programs have ramifications for land title recording, real and personal property taxation, and security interests in restricted land, such as mortgages, judgments and liens.

#### ISSUES TO ADDRESS IN DEVELOPING A TDR PROGRAM

#### ISSUES AND OPTIONS

TDR is most suitable in places where large blocks of land remain in farm use. In communities with a fragmented agricultural land base, it is difficult to delineate a viable sending area. Jurisdictions must also be able to identify receiving areas that can accommodate the development to be transferred out of the farming area. Allocating this additional density can be difficult: The receiving areas must have the physical capacity to absorb new units, and residents of those areas must be willing to accept higher density development. Often, current residents of potential receiving areas must be persuaded that the benefits of protecting farmland outweigh the costs of living in a more compact neighborhood.

One of the most difficult aspects of implementing TDR is developing the right mix of incentives. Farmers must have incentives to sell development rights instead of building lots. Developers must benefit from buying development rights instead of building houses according to the existing zoning and subdivision standards. TDR programs are sometimes created in conjunction with APZ: New construction is restricted in the agricultural zone, and farmers are compensated with the opportunity to sell development rights. Thus, local governments must try to predict the likely supply of and demand for development rights in the real estate market, which determines the price.

In developing a TDR program, planners must address a variety of price-related technical issues. These issues include:

- What type of transfers should be permitted?
- Should the TDR program be mandatory or voluntary?
- Which agricultural areas should be protected?
- How should development rights be allocated?
- Where should development be transferred, and at what densities?
- Should all transactions be made on the open market, or should the local government buy and sell development rights through a TDR bank?

Because the issues are so complex, TDR programs are usually the result of a comprehensive planning process. This process helps a community envision its future and generally involves extensive public participation. The process of developing a community vision may help build understanding of TDR and support for farmland protection.

#### DESCRIPTIVE ANALYSIS OF TDR PROGRAMS

## Types of TDR transfers

The term transfer of development rights is generally used to describe density transfer programs that involve monetary transactions. It may also refer to programs that transfer development rights between parcels in the same ownership. TDR programs that allow transfers between parcels in different ownership have the potential to protect much larger areas of land, but they are also far more complicated to implement and administer than programs that are limited to transfers of rights between tracts owned by one person. Arranged in approximate order of increasing complexity, the following types of transfers can be identified:

## 1. Same owner, same parcel transfers (cluster zoning).

Some zoning ordinances allow landowners to group houses on one section of a tract, on smaller lots than would ordinarily be permitted, so long as the average density for the development does not exceed the maximum allowable density permitted by zoning. The land that is saved by clustering may be restricted with an agricultural conservation easement. Clustering allows developers some flexibility to locate residences away from active farm fields, flood plains, marshy areas or steep slopes, and to concentrate them in areas most suitable for housing. In Howard County, Md., landowners in the resource conservation district have three options: clustering, transferring development rights out of the district or selling an easement to the county if funds are available for its purchase.

## 2. Lot merger.

The owner of two adjacent lots may combine them to be treated as one. The density allowed on one of the former lots can thus be transferred to the other. For example, San Mateo County, Calif., awards bonus development credits to landowners who merge contiguous parcels to form a larger parcel.

- 3. Transfer of development rights between adjacent properties in the same ownership. This option allows a landowner to transfer development rights from one parcel to an adjoining parcel. Several townships in York County, Pa., allow farmland owners to transfer development rights to an adjoining parcel in the same ownership, but the receiving sites must be located on low-quality soil.
- 4. Transfer of development rights between non-adjacent tracts in the same ownership. Owners of tracts in rural "sending" areas agree to restrict their use to farming or conservation, in exchange for permission to transfer the development rights to land they own closer to urban services. This approach is known as proffers in Virginia. Blue Earth County, Minn., also allows transfers between non-contiguous tracts in the same ownership.
- 5. Transfer of development rights to non-adjacent tracts in different ownership in the same local jurisdiction.

Development rights may be transferred between parcels in different ownership in the same jurisdiction; this involves monetary transactions between private parties. Rights may be transferred between private parties, or a government agency may purchase development rights and sell them to developers. Springhill Community in Gallatin County, Mont., uses this type of program.

6. Transfer of development rights from parcels in a designated rural "sending area" to non-adjacent tracts in different ownership in a designated "receiving area" in the same local jurisdiction.

This is similar to the previous example, except that the local government designates discrete sending and receiving areas. Lumberton Township, N.J., Manheim Township, Pa., and Island County, Wash., have this type of program.

7. Transfer of development rights from parcels in a designated rural "sending area" to non-adjacent tracts in different ownership in a designated "receiving area" across local boundaries.

In this type of TDR program, the sending and receiving areas are located in different local jurisdictions. This is the most technically complex type of TDR program, requiring cooperation between different levels of local government. Multi-jurisdiction TDR programs allow for comprehensive regional planning. The TDR program in Thurston County, Wash., allows development rights to be transferred from unincorporated areas of the county to receiving areas in any of the county's seven municipalities. Each municipality has a unique TDR receiving ordinance. In New Jersey, the Pinelands Commission manages a regional TDR program that allows transfers of development rights in an area that encompasses six counties and 22 municipalities.

## Should the program be voluntary or mandatory?

The terms "voluntary" and "mandatory" can be confusing when used in reference to TDR. All TDR programs are voluntary in the sense that landowners are never legally compelled to buy or sell development rights. "Voluntary" TDR programs allow landowners in an agricultural area to sell development rights to parties with land in a receiving area, as an alternative to building on their own land. There is no reduction of density in the sending areas. The TDR program in San Luis Obispo County, Calif., for example, is designed to reduce the rate of development of old subdivided lots in rural areas. The program is "voluntary, incentive-based, and market-driven... Landowners are not obligated to use this technique to request an amendment to the general plan or to subdivide property in accordance with existing regulations'." Voluntary TDR programs simply provide a conservation option for landowners. The hope behind them is that the additional densities awarded to developers in receiving areas will be a sufficient incentive for them to purchase development rights from landowners in the sending areas at an attractive price.

In many jurisdictions, rural zoning allows the construction of homes on one-, two- or five-acre lots. If landowners are permitted to develop at these densities, too much non-farm residential development will occur and the area will likely be lost to farming. Mandatory TDR programs are designed to prevent fragmentation of farmland in a way that protects landowners' equity. They do not require owners of land in the sending area to sell their development rights. Rather, these programs apply agricultural protection zoning, reducing the amount of development that can occur in the sending area. If landowners want to realize their full equity under the old zoning, they must sell their development rights. Similarly, owners of property in the receiving area must generally buy the right to develop their land to its full potential. Mandatory TDR programs require local governments to ensure that adequate public facilities will be available in the receiving areas by the time the new development takes place.

In 1993, Thurston County, Wash., imposed agricultural protection zoning on more than 12,000 acres. Maximum residential density was decreased from one unit per five acres to one unit per 20 acres. In 1996, the county approved a TDR program. Landowners in the agricultural zones may now develop their land under the new zoning rules, or request the right to sell one development right per five acres. TDR programs in Montgomery County, Md., and the Pine Barrens of New Jersey used the same approach.

Voluntary TDR programs place few restrictions on landowners in the sending areas and usually give landowners in the receiving area relatively modest bonuses. For that reason, they are politically more acceptable than mandatory programs. However, they do not necessarily prevent new development in agricultural areas, nor do they provide strong incentives for concentrating development in growth zones. Several commentators have observed that voluntary programs have not been effective in conserving agricultural or other resource lands<sup>6</sup>. Because so few TDR programs have been fully implemented, it is difficult to determine whether mandatory or voluntary programs are more effective in practice.

Mandatory programs may run the risk of a legal challenge if development is too severely restricted in the sending area. A TDR program administered by Nevada's Tahoe Regional Planning Agency prohibited all development in environmentally sensitive areas. A landowner sued the agency, claiming that its actions amounted to a regulatory "taking," depriving her of all the value of her property. In defense of her claim, the landowner contended that "the TDR program has produced no sales and that her property has no marketable development rights." The Ninth Circuit Court of Appeals upheld a lower court finding in favor of the agency; the landowner appealed to the Supreme Court and the case was scheduled for a hearing in 1997\*.

The TDR program challenged by the Nevada lawsuit was designed to protect environmentally sensitive land, not farmland. In general, courts have found that unless landowners are deprived of all economically viable use of their land, zoning that restricts development is not a regulatory taking. For communities considering a mandatory TDR program to protect farmland, this means that as long as agriculture is economically viable in the TDR sending area, the program is likely to be safe from a takings challenge.

To reduce the risk of a lawsuit and reassure landowners further, communities can study the potential market for development rights before implementing a mandatory program. The Thurston County Regional Planning Commission hired a Maryland firm with experience in Montgomery County to analyze the market for development rights in its seven cities. The study found that the market was likely to be marginal, and the county prepared to scrap its plans. Thurston County farmers, however, advocated the implementation of TDR, with the understanding that the market for development rights might not emerge for five to 10 years.

## Which agricultural areas should be protected (the sending areas)?

TDR programs are generally the result of comprehensive planning. Through the planning process, communities determine where good farmland is located and where agriculture is economically viable. Variables considered in delineating sending areas include soil quality, slope, population density, land values and the existence of an infrastructure to support commercial agriculture.

As noted earlier, some jurisdictions that allow TDR do not have defined sending areas. Under the San Luis Obispo County, Calif., program, landowners must meet one of three separate sets of criteria to be eligible to transfer development credits. The TDC section of the county's zoning ordinance sets both specific and general criteria for agricultural land:

- (I) Specific Criteria. The specific agricultural criteria are as follows:
- (a) Land Capability. At least 50 percent of the site must contain Class I or II (irrigated or nonirrigated) soils based on the Natural Resources Conservation Service classification, and the site must be at least 40 acres in size (this may include multiple lots under common ownership or contiguous lots under different ownership).
- (b) Grazing. Grazing land with a demonstrated continuity of production over 10 years and a minimum site size of 320 acres with at least 100 acres being well- to moderately-suited for rangeland as described in the Natural Resources Conservation Service soil reports. This may include multiple lots under common ownership that are operated as a single agricultural enterprise, or contiguous lots under different ownership.
- (II) General Criteria. It is the policy of the county to designate sending sites that contain land with prime, unique or other productive soil, as well as make it possible for a family who would otherwise have to sell the land to retain the land and continue in active agriculture. The general agricultural criteria are as follows:
  - (a) Continue the demonstrated productive capacity of the land;
  - (b) Preserve an area with microclimates that support specific agricultural crop types;
  - (c) Retire the development potential within an area that depends on localized, limited groundwater resources; or
  - (d) Reduce the potential for erosion or support conservation of soil resources9.

Jericho, Vt., used a modified Land Evaluation and Site Assessment system to identify individual parcels to be protected through TDR. LESA is a numerical method of evaluating farmland that measures development pressure as well as soil fertility. The town used LESA to rank all parcels larger than 25 acres. The top 25 percent of parcels were designated as prime agricultural parcels, and landowners were given the option to transfer rights from these tracts.

Geographic Information Systems also facilitate mapping relevant criteria and designating sending areas. Whichever method is used to designate sending parcels or areas, it is important to recognize that the more parcels of land that are eligible for TDR, the more development rights will be available for use in the receiving areas.

## How will development rights be allocated?

Once a community has designated sending areas, it must choose a way to allocate development rights to landowners. Methods of allocating development rights include:

- By gross acreage owned based on the underlying zoning;
- · According to the land's characteristics and its physical suitability for development; or
- By determining the cash value of each eligible parcel for development<sup>10</sup>.

The gross acreage/zoning method is the most commonly used system of allocating development rights<sup>11</sup>. Many voluntary TDR programs, such as those in Jericho, Vt., and Windsor, Conn., set the number of transfers at the number of houses that landowners in the sending areas would be allowed to build under the current zoning. Under mandatory TDR programs in Montgomery County, Md., and Thurston County, Wash., development rights were allocated based on the zoning ordinance in effect before the enactment of TDR. In Montgomery County, landowners in the sending area are entitled to one right for every five acres, which was the permitted density prior to downzoning and hence a measure of lost equity (although the price of development rights does not necessarily reflect the value of five-acre lots under the old zoning). The current zoning allows one right per 25 acres. In Calvert County, Md., landowners in the sending areas are entitled to one development right for each acre, but five development rights are needed to build a house in the receiving areas.

New Jersey's Pinelands Transferable Development Credit Program keys the number of the development credits that a landowner will receive to the environmental significance and development potential of the conserved land. Owners of wetlands used for cranberry and blueberry production receive fewer credits than owners of upland parcels or cropland. One Pinelands Development Credit allows landowners to build four houses.

San Luis Obispo County, Calif., uses appraisals to determine the number of development credits awarded landowners in sending areas<sup>12</sup>. Landowners who wish to transfer credits are required to obtain a professional appraisal of the value of an easement on their land.\*\* The easement value is then divided by 10,000 to determine the number of development credits. The actual sale price of the development credits is determined through negotiation between the seller and the buyer<sup>13</sup>. Table 4.2, p. 132 summarizes how several different jurisdictions allocate development rights.

<sup>\*\*</sup> Easement value is generally the difference between fair market value and restricted value.

TABLE 4.2: ALLOCATING DEVELOPMENT RIGHTS IN SELECTED JURISDICTIONS

Jurisdiction	Method of Allocating Development Rights	Allocation Ratios
San Luis Obispo County, CA	Appraised easement value	Easement value/ 10,000=number of rights
Calvert County, MD	Gross acreage	Approximately 1 right per acre
Charles County, MD	Zoning	1 right per 3 acres
Montgomery County, MD	Gross acreage/zoning	1 right per 5 acres
Lumberton Township, NJ	Gross acreage and land characteristics	1 right per 2 acres depending on actual development potential
Pinelands Region, NJ	Gross acreage and land characteristics	1 credit/39 acres in non- productive wetlands
		2 credits/39 acres of farmland/upland
		1 credit/196 acres in productive wetlands
Island County, WA	Gross acreage	1 right per acre

San Mateo County, Calif., grants bonus development credits to landowners who develop or expand agricultural water storage facilities according to the schedule in Table 4.3.

TABLE 4.3: BONUS DEVELOPMENT CREDITS, SAN MATEO COUNTY, CALIFORNIA<sup>18</sup>

Bonus Density (dwelling units)		
0.0		
0.5		
1.0		
1.5		
2.0		
Density allocated at same rate		

Once a sending area has been designated and an allocation method determined, the jurisdiction can calculate the maximum number of development rights that could be transferred by the program. Establishing the maximum number of available development rights is important in deciding how much land to incorporate in the receiving areas.

## Zoning and TDR in Springhill Community, Montana

Springhill is an unincorporated farming community in Gallatin County, 10 miles north of Bozeman in south central Montana. The county has no zoning, and land use regulation is generally unpopular in Montana. The U.S. Forest Service owns about half of Springhill's 19,000 acres; most of the rest of the land is owned and used by ranchers. There are approximately 50 households in Springhill, and children still attend classes in the one-room schoolhouse built in 1906. Springhill may be a small rural community in a conservative western state, but it has an award-winning zoning ordinance and a TDR program carefully tailored to meet local needs.

In 1992, Springhill residents voted to create a special zoning district. The district allows for one house per 160-acre parcel as a matter of right. Every parcel, even those smaller than 160 acres, got one development right at the time the ordinance was adopted. If landowners already had houses on parcels that were 160 acres or smaller, their rights were committed. Landowners with at least 320 acres were entitled to two rights. In addition, landowners were allowed one additional right per 80 acres.

Landowners may use their development rights or sell them to other landowners in the district. To use additional or transferred development rights, however, landowners must obtain a special use permit. According to the standards for use of these additional or transferred rights, construction must be limited to 15 percent of the original size of the receiving parcel. The owner must then place a permanent easement on the remaining 85 percent of the parcel. Owners cannot site houses on prime agricultural land, in the middle of a productive field, in wildlife habitat or on hilltops. The creation of new roads is strongly discouraged.

The Springhill Community zoning ordinance and TDR program were the results of a two-year process that involved extensive community input. A citizen committee surveyed all the landowners in the community to determine what types of land use regulations would be acceptable. The resulting ordinance was approved by 89 percent of the residents, and it won a 1994 award from the American Planning Association. Since the ordinance was adopted, two landowners have transferred development rights on their own properties, permanently protecting approximately 360 acres.

## Where should development be transferred (receiving areas), and how may rights be used?

In jurisdictions where development rights may be transferred only to adjacent parcels, there are no designated receiving areas. In York County, Pa., several townships permit development rights to be transferred to lots on adjacent parcels that are less suitable for farming than the sending site. The goal of these programs is not to transfer development out of agricultural areas, but to promote protection of the most productive land.

In most communities, however, the goal is to transfer development out of agricultural zones into more suitable areas. In these jurisdictions, receiving areas should have a concentration of public facilities such as roads, water supplies, sewer systems and social services, such as

schools and police and fire protection. Local governments should be prepared to construct the infrastructure in the receiving areas necessary to support higher densities.

Under most TDR ordinances, landowners in the receiving area are entitled to build at higher densities if they purchase development rights from landowners in the sending area. Communities determine both the number of dwelling units allowed under existing zoning and the density increment to grant buyers of development rights. For instance, if the permissible base density in the receiving area is one dwelling unit per acre without TDR, a landowner may increase density up to two dwellings per acre after purchasing a development right.

Zoning in the receiving area must create an incentive for developers to buy development rights. If the zoning allows high-density development, developers will simply build to maximum densities without development rights. Allowable densities should thus be lower than the market will bear. It is also important to ensure that the receiving area is large enough to create demand for development rights. The proposal for a TDR program in Montgomery County, Pa., recommends that the receiving area be large enough to absorb at least twice the number of development rights that could be generated in the sending area. The concept behind the proposal is to promote competition for scarce development rights, which should drive up the price paid to farmers. Burlington County, N.J., recommends that the receiving area be able to accommodate 30 to 50 percent more new dwelling units than there are development rights. In theory, the greater the additional density allowed on each receiving parcel, the more buyers should be willing to pay for development rights.

## TDR and the Laws of Supply and Demand

The process of developing a TDR program and establishing a market for development rights takes time. Montgomery County, Md., established its 89,000-acre TDR sending area, known as the Agricultural Reserve, in 1980. It took another three years to designate receiving areas. Transactions began in 1983, at an average price of \$2,500 per development right. In 1997, the total supply of development rights in the Agricultural Reserve fell below the county's TDR receiving capacity for the first time, and the average price of a development right had risen to \$10,500<sup>17</sup>.

Increasing residential density is only one of many potential uses of development rights. Several communities around the nation have taken innovative approaches to applying development rights. Under the TDR program in Thurston County, Wash., each of the county's seven cities wrote its own TDR receiving ordinance. Olympia, Washington's capital city, took an unconventional approach to allocating residential density. With strong demand for low-density urban residences, city officials wanted to encourage compact development to prevent sprawl and facilitate public transportation. They reasoned that under current market conditions, developers might not be willing to buy development rights to build at higher densities. They might, however, be willing to pay a premium to build at low densities. As a result, densities in Olympia's receiving areas range from four to eight units per acre. Under the new TDR receiving ordinance, developers can build five to seven units per acre by right, but must purchase development rights to build at the lowest and highest permissible densities. In theory, the

demand for large houses on quarter-acre lots will merit the cost of purchasing development rights. City officials believe that the receiving ordinance creates a win-win situation: If development rights are purchased, farmland in the county is being protected; if they are not used, then the city will have effectively discouraged sprawl within its borders. Excerpts from Olympia's ordinance regulating the use development rights are included in Appendix H, p.142.

A few jurisdictions have designed TDR programs to achieve multiple goals. The zoning ordinance for Warrington Township, Pa., states, "[t]oward achieving the purpose of promoting industrial and office development...and toward furthering the preservation of agricultural lands...landowners in [the Planned Industrial] district may be recipients of development rights transferable from the RA-Residential Agricultural District." Development rights may be used to build factories, wholesale and distribution facilities, and professional and business offices. Each development right permits a 1-percent increase in the otherwise allowable building coverage up to a maximum coverage of 45 percent, and a 2-percent increase in impervious surface coverage up to a maximum coverage of 85 percent. Queen Anne's County, Md., also allows development rights to be used to increase the floor space of commercial buildings. Talbot County, Md., has 600 miles of shorefront land. The county located its receiving areas along the eroding shoreline. In order to build using transferred rights, developers are required to do shoreline mitigation.

High prices create good incentives for farmers to sell their development rights, but communities must strike a balance between creating incentives for sellers of development rights and addressing the concerns of residents in and near the receiving area. Residents often oppose the additional density that would result from use of TDR. When Calvert County, Md., initiated its TDR program, it let developers propose receiving zones in any area of the county outside the areas reserved for agriculture. The county then held public hearings to discuss the proposed receiving areas. According to Brooke Kaine, a Calvert County residential developer, this system "spawned a citizen's group in every area of the county." Kaine, who frequently purchases development rights for use in his projects, warns other communities that designating receiving areas is one of the most difficult elements of implementing a TDR program. "When you say 'increased density,'" he cautions, "people do not hear 'we're saving the farms<sup>19</sup>." Several planners interviewed for this publication also reported that opposition to increased densities in receiving areas was a significant obstacle to implementing TDR programs.

#### What restrictions should be placed on land when development rights are transferred?

Most TDR programs require that an agricultural conservation easement be recorded on land after development rights are transferred. In Maryland's Charles and Calvert Counties, the sale of one development right requires landowners to record an easement on the entire parcel. This requirement is designed to prevent fragmenting the land into parcels that are too small to farm. In Calvert County, landowners are entitled to reserve one house lot per 25 acres, to a maximum of three. These lots may be sold or used to build houses for family members. For each lot used, farmers must subtract five development rights from their total entitlement.

# Should all transactions be conducted on the open market, or should a TDR bank be established?

One concern about TDR programs is that the market for development rights is

unpredictable. Unless the demand for the type of housing anticipated by the program is very strong, the chances are remote that the development rights on any particular tract in the sending area will actually be attached to a real piece of property in the receiving area. In jurisdictions with mandatory TDR programs, landowners may claim that TDR does little to restore the equity that they lost when agricultural protection zoning was imposed. In jurisdictions with voluntary programs, farmers may sell lots if demand for development rights is slow.

One solution to this problem is a publicly administered TDR bank that uses a revolving fund to buy development rights from landowners in the sending area. Funds are replenished by selling the rights to developers. Start-up funding for TDR banks can come from tax revenues, the proceeds from bond issues or land acquisition programs<sup>20</sup>. Public TDR banks are similar to purchase of agricultural conservation easement programs in the sense that they use public funds to buy development rights. The main distinction between TDR banking and PACE programs is that the development rights stored in the "bank" can be sold to developers, and the jurisdiction can use the proceeds to purchase more development rights, whereas in PACE programs, development rights are permanently retired. In this sense, TDR banks can serve as a sort of revolving loan fund to finance farmland protection.

New Jersey's Pinelands Program established a TDR Bank in 1985. The bank serves as the central coordinating agency for the program and buys development rights under prescribed conditions. Its primary role is to encourage transactions through the private market. Data from draft copies of the 1996 report of the Pinelands Commission indicate that, since 1990, almost a third of all development rights sales have been to the bank, even though, by statute, it may only pay 80 percent of their market value<sup>21</sup>. Manheim Township, Pa., also has a TDR bank.

Calvert County, Md., implemented an adequate public facilities ordinance in 1992. The ordinance prohibits the development of new housing when public services such as schools and roads are not sufficient for new residents. In practice, the ordinance halts construction when schools are full and funds are not available for expansion. It also reduces demand for development rights. To ensure that farmers would still be able to sell development rights in years when the ordinance reduces growth, the county created a development rights "purchase and retirement" fund. Farmers may apply to sell up to 10 development rights per year to the PAR fund, which then extinguishes the rights.

#### TDR AND AGRICULTURAL PROTECTION ZONING

In mandatory TDR programs, APZ is used to stabilize land uses in the sending areas and to increase farmers' incentives to sell development rights. Montgomery County, Md., Thurston County, Wash., Springhill Community, Mont., Manheim and Shrewsbury Townships, Pa., and the Pinelands Transferable Development Credit program in New Jersey all rely on APZ to protect land in TDR sending areas. By giving farmland owners a way to retain their equity without converting land to non-agricultural use, TDR programs can reduce landowner opposition to APZ. Calvert County, Md., does not have agricultural zoning, but the county does require that dwellings be clustered on land in its sending areas, leaving a total of 80 percent of each parcel open and available for agriculture.

RELATIONSHIP BETWEEN
TDR AND OTHER
FARMLAND PROTECTION
STRATEGIES

## TDR AND AGRICULTURAL DISTRICTS

Calvert County, Md., has its own local agricultural district program. Farmers must enroll their land in an agricultural district to be eligible to sell development rights. Enrollment prevents landowners from developing their property for a five-year term. It also entitles them to a 100-percent county property tax credit on undeveloped land. The district enrollment requirement helps stabilize land use in Calvert County's sending areas. Farmers who have sold their development rights receive some protection from development on adjacent land, and the tax credit addresses some of the expense of farming in an urbanizing area.

#### TDR AND PURCHASE OF AGRICULTURAL CONSERVATION EASEMENTS

A TDR bank, purchase and retirement fund or PACE program can complement a TDR program by providing a buyer for development rights when the real estate market is slow. Public purchase of development rights through a TDR bank or PACE program can also demonstrate the feasibility of TDR to farmers and developers. Limited PACE funds can be targeted to the highest quality or most endangered farmland. Finally, a well-funded PACE program can increase the price of development rights by reducing the supply.

Montgomery County, Md., has both a TDR and a PACE program. In 1992, the county began banking the development rights it purchases through the PACE program. It does not currently have the authority to sell these rights, although this may change in the future.

Thurston County, Wash., also has both TDR and PACE, although they are used in different areas. The county limits eligibility for PACE to landowners in a 1,100-acre valley with rich agricultural, ecological and scenic resources. The county's strategy is to use public funds to protect its most valuable and vulnerable farmland through the PACE program and rely on the market to protect other important agricultural land.

TDR has long been promoted as a cost-effective alternative to expensive purchase of agricultural conservation easement programs. Yet over the past 20 years, state and local governments have protected more than 490,000 acres of farmland through PACE, while TDR programs have placed only 55,000 acres of farmland under easement. Why has TDR failed to

live up to its promise?

**OBSERVATIONS** 

In theory, TDR is attractive as a voluntary program that protects land and landowner equity at low public cost. In practice, however, implementing TDR programs is difficult. The first hurdle for communities to overcome is state approval. In many states, it is not clear whether local governments even have the authority to implement TDR. The city of Virginia Beach, Va., unsuccessfully sought state authorization to use TDR to protect farmland for many years. When the state legislature denied approval, the city created a PACE program instead.

Counties and towns that have the authority to use TDR must still win local support for a specific ordinance, which can be a time-consuming and costly process. Thurston County, Wash., for example, spent \$11,000 on its 1994 TDR feasibility study.

Political support for TDR, however, is only one part of the equation. The central challenge of TDR programs is to create a market for development rights, so that farmers have an incentive to sell them and developers have a reason to buy. Three conditions seem to distinguish the TDR programs that have successfully met this challenge:

- 1. Enough growth to create a demand for development rights in the receiving area. Calvert County, Md., developer Brooke Kaine emphasizes that TDR is "not a no-growth option." In fact, he explains, "TDR programs depend on steady growth to work<sup>22</sup>." Calvert County's growth management program has actually depressed the market for development rights. While no specific amount of growth is required, demand for medium- to high-density housing must be sufficient in relation to the supply of development rights in the receiving area. If growth is too slow, or demand for new housing is limited to low-density single-family homes, the price for development rights will be low and few transactions will occur. One solution to this problem is to target a relatively small area for protection, so that only a limited supply of development rights will be generated.
- 2. Political will to implement and maintain appropriate zoning in sending and receiving areas.

Limiting development in the sending area creates a strong incentive for farmers to sell development rights, rather than simply develop their land. Comprehensive downzoning in Montgomery County, Md., and restrictions on development in New Jersey's Pinelands were critical ingredients of TDR programs in these jurisdictions. Calvert County, however, does not rely on development restrictions in the sending area. Instead, the county has refused to upzone land in its receiving area. Program Director Greg Bowen explains that developers must purchase rights in order to increase densities in desirable residential neighborhoods. The county has not granted a residential upzoning request since its TDR program was enacted in 1978<sup>23</sup>.

3. A planning department that has the knowledge, time and resources to administer a complex program.

TDR programs may be cheaper than public purchase of development rights, but they are not free. Explaining TDR to landowners and developers, keeping track of transfers and monitoring easements requires substantial staff resources. In general, a planner must review every development project that involves development rights. A knowledgeable staff is critical to maintaining public confidence in a TDR program. The Montgomery County TDR program requires the labor equivalent of one full-time staff position. Calvert County employs a farmer who has sold the development rights on her farm to explain the program to neighbors.

The final obstacle to the success of TDR programs is failure to understand that TDR is fundamentally different from other government programs to protect farmland. While PACE programs and APZ ordinances have the potential to slow residential growth, TDR programs thrive on growth. Their purpose is to move new construction to different areas of the community, not to stop it. Implementing a TDR program thus requires residents, conservationists, planners and local government officials to support higher-density development in receiving areas and to work with developers to facilitate the purchase and use of development rights.



For more information on farmland protection, contact the Farmland Information Center at http://www.farmlandinfo.org or call (413) 586-4593.

## APPENDIX G: EXCERPTS FROM THE ORDINANCES ESTABLISHING A TDR PROGRAM IN MONTGOMERY COUNTY. MARYLAND

## APPENDICES 59-C-1.391 Applicability.

The following procedures and regulations apply to the transfer of development rights from land classified in the Rural Density Transfer Zone (RDT) to land classified in the Transferable Development Rights (TDR) Zones. The Planning Board may approve subdivision of such land at densities not to exceed the maximum density permitted in the applicable TDR Zone and conforming to the guidelines contained in the applicable master plan approved by the District Council. Any increase in density above the density applicable to the standard method of development must be based on a ratio of one dwelling unit for each transferable development right (TDR).

#### 59-C-1.392 General Provisions.

- (a) A development right shall be created, transferred, and extinguished only by means of documents, including an easement and appropriate releases, in a recordable form approved by the Planning Board. The easement shall limit the future construction of one-family dwellings on a property in the RDT Zone to the total number of development rights established by the zoning of the property minus all development rights previously transferred in accordance with this section, the number of development rights to be transferred by the instant transaction, and the number of existing one-family detached dwellings on the property.
- (b) The transfer of development rights shall be recorded among the land records of Montgomery County, Maryland.
- (c) The development density of a property under the TDR optional method may not be increased above the maximum density permitted in the zone (Section C-1.332(c)) nor beyond the density or number of dwelling units recommended for such property by the land use plan of the applicable master plan approved by the District Council.
- (d) A property developed with the transfer of development rights shall conform to the requirements of Chapter 25A of the Montgomery County Code requiring MPDU's [Moderately Priced Dwelling Units]. The applicability of Chapter 25A and the MPDU density increase provided by Section C-1.6 shall be calculated after the base density of a property has been increased by a transfer of development rights. The density increase provided by Section C-1.6 may be made without the acquisition of additional development rights.

## 59-C-1.393 Development Approval Procedures under the Optional Method of Development.

- (a) A request to utilize development rights on a property under the optional method must be in the form of a preliminary subdivision plan submitted in accordance with the Subdivision Regulations contained in Chapter 50 of the County Code.
- (b) Such a preliminary plan must include at least 2/3 of the number of development rights permitted to be transferred to the property under the provisions of the applicable Master Plan approved by the District Council. However, upon a finding by the Planning Board that for environmental or compatibility reasons it would be desirable to permit a lower density, the 2/3 requirement may be waived.
- (c) A site plan shall be submitted and approved in accordance with the provisions of Division D-3.
- (d) The Planning Board must approve a request to utilize development rights if the request:
  - (1) does not exceed the limitation on the density or number of dwelling units permitted in the zone and in the applicable master plan approved by the District Council;
  - (2) is in accordance with the provisions of this Chapter;
  - (3) is in accordance with Chapter 50, title "Subdivision of Land";
  - (4) is consistent with other recommendations of the Master Plan approved by the District Council; and

- (5) achieves a desirable development compatible with both site conditions and surrounding existing and future development.
- (e) Prior to Planning Board approval of a final record plat for a subdivision using transferred development rights, an easement to the Montgomery County Government in the form required by Section 59-A-6.1(a) limiting future construction of dwellings on a property in the RDT Zone by the number of development rights received shall be recorded among the land records of Montgomery County, Maryland.
- (f) A final record plat for a subdivision using transferred development rights shall contain a statement setting forth the development proposed, the zoning classification of the property, the number of development rights used, and a notation of the recordation of the conveyance required by Section C-1.392(b).

## 59-C-1.394 Development Standards Applicable to the Optional Method of Development.

- (a) Development under the TDR optional method density provisions of Section C-1.3328 must conform to the development standards and permitted residential uses as indicated in Section C-1.395. For TDR densities in excess of 6 per acre, the lot sizes and other development standards will be determined at the time of preliminary plan and site plan in accordance with the provisions of the PD zone, except as may be specified in Section C-1.395.
- (b) The final density achieved for any property located in a TDR receiving area developed under the optional method procedures must be determined by the Planning Board at site plan and/or subdivision review and must conform to the site plan provisions (Division 59-D-3 of the Zoning Ordinance) and subdivision regulations (Chapter 50 of the Montgomery County Code.
- (c) In making this determination as to the final density, the Planning Board will consider whether a proposed plan has flexibility in design to provide an appropriate range of housing types, taking advantage of existing topography and other natural features, to achieve a mutually compatible relationship between the proposed residential development and adjoining land uses, while implementing the area master plan approved by the District Council. Where Moderately Priced Dwelling Units are included in accordance with the requirements of Chapter 25A of the Montgomery County Code, the MPDU development standards shall apply. The increase in density shall not exceed 20 percent of the TDR density.

## Sec. 59-C-9.6. Transfer of Density - Option in Rural Density Transfer Zone.

In accordance with section 59-C-1.39 and in conformance with an approved and adopted general, master, sector, or functional plan, residential density may be transferred at the rate of one (1) development right per five (5) acres minus one (1) development right for each existing dwelling unit, from the Rural Density Transfer zone to a duly designated receiving zone, pursuant to section 59-C-1.39. The density transfer provisions are not applicable to publicly owned rights-of-way for roads, streets, alleys, easements, or rapid transit routes classified in the Rural Density Transfer zone. The following types of dwelling units on land in the RDT zone are excluded from this calculation, provided that these uses remain accessory to a farm. Once the property is subdivided, such dwellings would no longer comply with this exclusion or with these definitions and regulations:

- (a) A farm tenant house, farm tenant mobile home, or guest house as defined in section 59-A-2.1, title "Definitions."
- (b) An accessory apartment or accessory dwelling regulated by the special exception provisions of divisions 59-G-1 and 59-G-2. (Ord. No. 10-69, '5; Ord. No. 10-75, '3; Ord. No. 11-4, '6.)

APPENDIX H: EXCERPTS FROM THE ORDINANCE ESTABLISHING A TDR RECEIVING ZONE IN OLYMPIA, WASHINGTON.

Transfer of Development Rights Approval of Transfer of Development Rights/18.90.020

CHAPTER 18.90

TRANSFER OF DEVELOPMENT RIGHTS

Sections:

18.90,020 APPROVAL OF TRANSFER OF DEVELOPMENT RIGHTS

- 1. Required Instruments. Final approval for site plans or subdivision plats which involve the transfer of development rights shall not be approved until evidence is provided to the City that the following instruments have been approved by the Thurston County TDR Program Administrator and recorded with the Thurston County Auditor:
- (a) Signed and Recorded Transferable Development Rights Certificates for each unit of density on the receiving parcel(s) in the Residential 4-8 District; and
- (b) A signed and recorded Document of Attachment of the development rights to the subject parcel(s).
- 2. The following information shall be recorded on the face of any plat for property which received a transfer of development rights under the provision of this Chapter:

  A statement that the development rights used in the plat have been transferred in accordance with the Deed of Transfer of Development Rights, prescribed by Thurston County; the volume and page number of the recordation of the Deed of Transfer of Development Rights between the owner and the applicant; the volume and page number of the recordation of the Transfer of Development Rights Easement between the original owner and Thurston County; the serial numbers issued by the Thurston County TDR Program Administrator of the TDRs used in the plat; and the volume and page number of the recorded Document of Attachment of the TDRs to the subject parcel. (See Section 18.04.080(1)(f).)

#### Residential District's Development Standards/18.04.080(1)(f)

- F. Transfer of Development Rights. The following provisions apply to the R 4-8 District. (NOTE: these requirements shall go into effect upon adoption of regulations by Thurston County establishing Transfer of Development Rights Sending Zones and associated administrative procedures.)
- (1) In order to develop at a density of four (4) to four point ninety-nine (4.99) dwelling units per acre in the R 4-8 District, Development Rights must be obtained from an eligible property owner in a Thurston County Transfer of Development Rights Sending Zone. The number of dwelling units proposed for the site plus the number of Development Rights units applied to the site shall total at least five (5) units per acre. (For example, if the applicant proposes to develop a ten (10) acre site at four (4) units per acre, s/he would have to obtain ten (10) Development Rights.)
- (2) Development Rights must be obtained from an eligible property owner in a Thurston County Transfer of Development Rights Sending Zone in order to develop above seven (7) units per acre in an R 4-8 District.

- 1. Robert E. Coughlin, John C. Keene, J. Dixon Esseks, William Toner and Lisa Rosenberger, *The Protection of Farmland: A Reference Guidebook for State and Local Governments* (Washington, D.C.: U. S. Government Printing Office, 1981), p. 178.
- 2. Rick Pruetz, Putting Transfer of Development Rights to Work in California (Point Arena, Calif.: Solano Press Books, 1993), pp. 41-80.

**ENDNOTES** 

- 3. Maryland Office of Planning, Transferable Development Rights, from the series, Managing Maryland's Growth: Models and Guidelines (Annapolis, Md., 1995).
- 4. See Centex Homes of N.J. v. The Mayor of East Windsor, N.J. Super. Docket No. A-5144-82TI (App. Div., 1984). See also Grand Land Co. v. Township of Bethlehem, 196 N.J. Super. 547 (App. Div., 1984), and Abbatiello v. Colts Neck Bd. of Adj., N.J. Super. Ct., Docket No. L-76679-84 P.W. (April 29, 1984).
- 5. San Luis Obispo County Department of Planning and Building, Transfer of Development Credits: A Proposed Program for San Luis Obispo County (1996), p. 30.
- 6. See, e.g., Peter J. Pizor, Making TDR Work: A Study in Program Implementation, Journal of the American Planning Association 52 (1986), and Amanda Jones Gottsegen, Planning for Transfer of Development Rights (Burlington County, N.J. Board of Chosen Freeholders, 1992), p. 63 and 105-106.
- 7. Suitum v. Tahoe Regional Planning Agency, 80 F.3d 359 (1996).
- 8. 10017S.Ct.293 (1996), cert. granted.
- 9. San Luis Obispo County Department of Planning and Building, op. cit., Section 22.04.520.
- 10. Gottsegen, op. cit., pp. 37-38.
- 11. Ibid., p. 37.
- 12. San Luis Obispo County Department of Planning and Building, op. cit., Section 23.04.510.
- 13. San Luis Obispo County Department of Planning and Building, op. cit., Section 22/23.04.520.
- 14. San Mateo County Planning and Building Division, San Mateo Zoning Regulations: Planned Agricultural District, Section 6357B.
- 15. Montgomery County Planning Commission, A Guidebook for Creating a Municipal TDR Program, 1995 (Norristown, Pa., 1995), pp. 13-17.
- 16. Gottsegen, op. cit., pp. 31 and 43-45.
- 17. Jeremy Criss, agricultural services division manager, Montgomery County, Md., telephone conversation with Robin Sherman, March 24, 1997.
- 18. Warrington Township, Pa., Zoning Ordinance, Section 1210.
- 19. Brooke Kaine, presentation to Fayette County (Ky.) Farm Bureau, March 21, 1997.
- 20. For an excellent discussion of the more important issues involved in the establishment and operation of a TDR bank, see Gottsegen, op. cit., pp. 67-78.
- 21. Materials provided by Andrea Malcolm of the Pinelands (N.J.) Commission staff (May 1996).
- 22. Kaine, op. cit.
- 23. Greg Bowen, telephone conversation with Robin Sherman, March 12, 1997.

Coughlin, Robert E., John C. Keene, J. Dixon Esseks, William Toner, and Lisa Rosenberger. *The Protection of Farmland: A Reference Guidebook for State and Local Governments*. Washington, D.C.: U. S. Government Printing Office. 1981.

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Thorton, James D. "Fitting the Square of TDR into the Round Hole of Mortgage Lending," *Probate and Property*. July-August 1991.

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