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Managing Growth and Addressing Urban Sprawl: The Transfer of Development Rights
Michigan State University Agricultural Experiment Station and Cooperative Extension
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Research Report

Patricia L. Machemer, Michael D. Kaplowitz, Thomas C. Edens, Resource Development

Issued August 1999

24 pages

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Managing Growth and Addressing Urban Sprawl: The Transfer of Development Rights



↑ Transferable
Development
Right



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Acknowledgements

The authors thank the following individuals for their thoughtful review of this report: Jon Bartholic, Michigan State University Department of Resource Development and Institute of Water Research; Gordon Hayward, Peninsula Township Planner; William Rustem, Public Sector Consultants; and Jim Wiesing,

Michigan State University Extension, Grand Traverse Extension director. Additionally, we appreciate the design and editorial assistance provided by Alicia Burnell and Leslie Johnson, Michigan State University ANR Communications.



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Managing Growth and Addressing Urban Sprawl: The Transfer of Development Rights

Patricia L. Machemer
Michael Kaplowitz
Thomas C. Edens

Department of Resource Development
Michigan State University

Introduction to Transfer of Development Rights

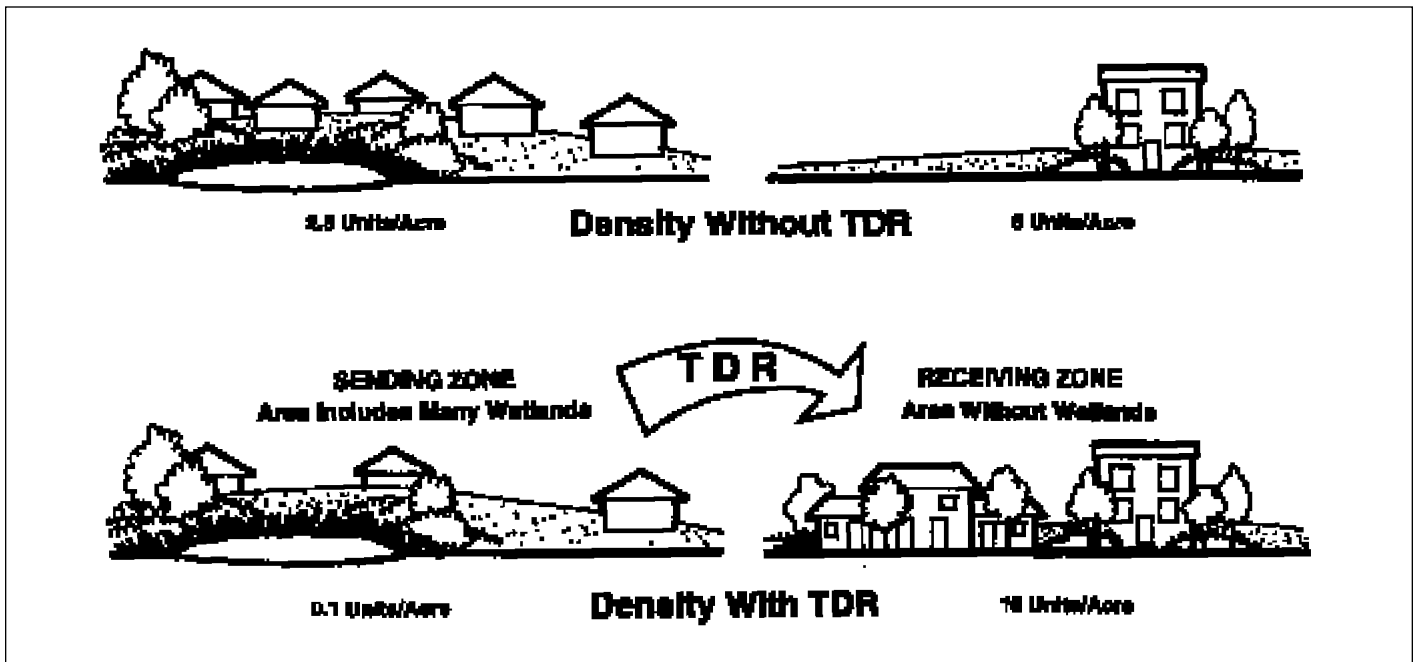
Traditional land use control techniques have had a limited effect on shaping communities' growth and patterns of development. However, these familiar land use techniques do not seem to be particularly effective growth management tools. Methods such as zoning, sliding scale zoning, open space zoning and open space development have proven inadequate in preventing or slowing the encroachment of urban development on rural lands. All too often, zoning changes and variances have been made in response to political pressures that fail to adequately account for socioeconomic and environmental considerations (Machemer, 1998). As a result, there is demand for new growth management techniques that recognize the need for an economic and environmental balance, the importance of private property rights, the power of market-based approaches, and states' particular legal and political structures.

One promising growth management approach is the use of transferable development rights (TDR). Like all growth management techniques, TDR will not work in isolation. TDR needs to be used in conjunction with other growth control techniques such as zoning and agricultural districts. In simplest terms, a TDR regime guides growth by focusing land use development and

preservation in specific geographic areas targeted by communities. TDR allows for the market transfer of development rights from landowners in areas designated for preservation to landowners and developers who wish to use them in areas deemed appropriate for development (see Figure 1). The TDR system provides a foundation for successful, equitable and efficient control of growth, balancing of equities, and protecting environmental and natural resources.

This paper examines TDR as a growth management technique that addresses urban sprawl and land preservation. A primary purpose of this paper is to provide guidance to communities as they engage in discussions and consider growth management alternatives. The appropriateness of TDR, its relationship to other land use control techniques and how TDR capitalizes on the limitations of current land use control techniques are discussed. The basic structure and elements of a TDR system are examined before a historical overview is presented. This overview includes both theoretical and program development; it is presented to deepen understanding about this growth management and land preservation technique.

Figure 1: Development rights transfer to protect wetlands



Source: MDEQ, 1995, produced by Planning and Zoning Center.

Economic/Environmental Balance

The reality of urban sprawl has forced communities to examine new growth management techniques that permit growth and, it is hoped, protect the environment and preserve the landscape. Although economic development and environmental protection have often been portrayed as mutually exclusive goals, TDR programs may be used as growth management techniques that address both environmental protection and economic development (Fluharty, 1997; Roddewig and Inghram, 1987). Under TDR programs, economic development goals are specifically addressed and included in program design and implementation. Some of these goals include encouraging development in an appropriate spatial context, maintaining and enhancing agricultural viability, maintaining land values and allocating infrastructure cost efficiently. Environmental goals that can be specifically addressed under a TDR scheme include providing enough land for aquifer recharge, maintaining and sustaining wildlife habitat, and minimizing land fragmentation. TDR programs are designed to maintain designated areas in undeveloped or less developed states. At the

same time, TDR allows market allocation of those undeveloped areas' development rights to other areas where development is desired and permitted.

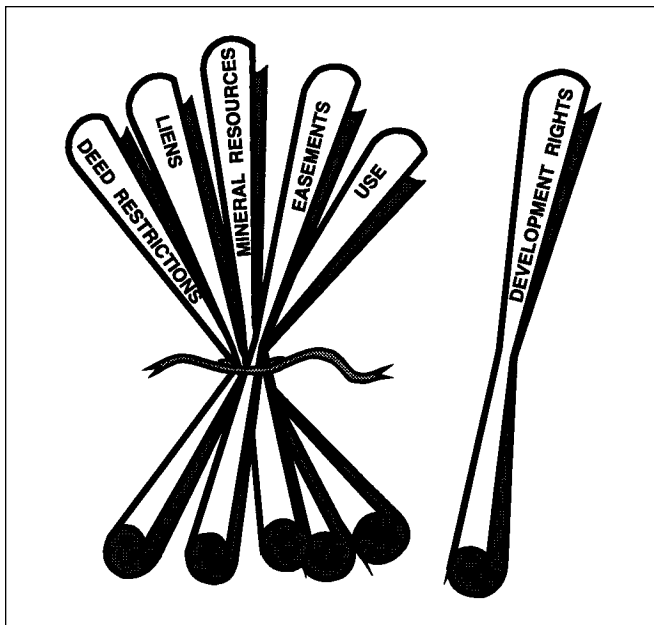
Private vs. Public Property Rights

The conflict between public and private interests comes about as a result of an inherent contradiction in the social needs that land serves and the limitations of property ownership and control engendered by a system of private property rights (Foglesong, 1986). Growing development pressures to convert land to non-agricultural uses coupled with the diminishing land resource base have exacerbated the conflict between public and private rights in land. TDR may provide a means for communities to achieve comprehensive long-range goals (including environmental and economic public interests) while accommodating development (private) interests (Gottsegen, 1992; Pizor, 1986). The conceptual key to TDR is the notion that development rights are just one set of rights in the bundle of rights associated with land ownership (see Figure 2). As such, development

rights, like mineral rights, can be separated from the parcel's bundle and transferred to others (Hagman, 1986; Barlowe, 1978; Rose, 1975).

Creating a development right that is severable from other rights in an owner's bundle means that it may then be sold as a commodity. This is similar to the way mineral rights associated with property can be severed and sold separately from the land from which they arise. Unlike mineral rights, however, development rights do not necessarily apply forever to a particular parcel of property. The basic idea behind TDR is that the purchaser of development rights can use them in conjunction with any parcel he/she owns or acquires in designated receiving zones. Instead of development rights being destroyed, retired or otherwise extinguished through some more traditional land use regulation, the system of severable and transferable development rights allows such rights to be sold and transferred for use elsewhere. For example, large urban cities have for some time allowed building owners and developers to buy and sell "air rights." Those are the development rights to build vertically on their parcels. The purchase and sale of such air rights have enabled building developers to buy the air rights from adjoining property owners and build taller buildings than they otherwise would be permitted.

Figure 2: Bundle of rights



Source: MDEQ, 1995, produced by Planning and Zoning Center.

Under a TDR scheme, once the development rights are severed from a parcel and transferred for use in conjunction with another property, a restriction is placed on future uses of the transferring property. TDR programs create mechanisms for transferring development rights associated with a parcel of land without the need to buy the land itself. TDR programs identify areas in which further development is to be prohibited, areas in which further development is desirable and the framework for compensating landowners who, though unable to develop their parcels, may sell their development rights.

Rights for Sale

TDR programs can help communities avoid the significant levels of public expenditure associated with some growth management methods. These traditional techniques seek to protect lands from development through fee simple land purchase (e.g., governmental and conservancy purchases). For example a local government or land trust can buy a parcel outright if the owner of the parcel is willing to sell his/her interest. Such approaches often result in significant direct costs to local and state governments, especially in those areas where development pressures are most pervasive (Burchell, 1996). TDR programs allow for the exchange of severable property rights (development rights) without requiring fee simple acquisition. In other words, the farm may remain a farm while the farmer may be able to benefit from selling the farm's development rights. The purchaser of the development rights can use those rights in another area where development is desired and valued. Under TDR, the market of willing buyers and sellers of such rights establishes the value of the development rights. Developers will pay only what they believe to be a fair price for the economic benefits associated with permission to build additional development projects in the designated development zones (Skjaerlund, 1997). TDR programs offer a market-driven and incentive-based approach to land use control that, in conjunction with other land use planning techniques, may lead communities to more economically, environmentally and socially sustainable futures.

Relationship between TDR and Traditional Growth Management Techniques

TDR is perceived by many as an innovative and complicated conceptual approach, but it uses existing and accepted planning techniques to help communities maintain traditional land use patterns and familiar landscapes (Gottsegen, 1992). TDR programs borrow from such widely accepted growth management techniques as zoning, purchase of development rights (PDR), mitigation and cluster development. When TDR is placed in the context of these more familiar techniques, its seeming complexity is reduced.

TDR programs require communities to define and delineate preservation and development districts (sending and receiving areas, respectively). Such tasks are not easy. However, those very same tasks — visioning the future design and composition of an area — are required for virtually all land use and growth management planning. It is unfair to say that developing community consensus for an areawide or regional TDR program is necessarily more difficult than developing an areawide consensus on zoning and land use restrictions. The implementation of an area's TDR scheme may tie construction that increases the area's density to a requirement that TDRs must be used to build at these higher densities. This approach avoids the messy and often politically challenging tasks of permitting communities to allow upzoning and zoning variance changes on an ad hoc basis. TDR can also foster the transfer of development potential from areas designated as lands or structures to be preserved to other areas more suitable for development. Through this shifting of development rights, the public can capture some of the windfall profits and other benefits that currently accrue to those individuals who now succeed in getting use variances or zoning changes (Siemon *et al.*, 1996; Moore, 1975; Willis, 1975). TDR may be viewed as a type of zoning, one that provides rights as a compensation mechanism to balance the windfall in land value that accrues to landowners in the designated growth areas against the corresponding financial wipeout in value experienced by landowners in the preservation areas (Gottsegen, 1992).

TDR expands on the land use planning concept of the purchase of development rights (PDR). Under PDR, communities purchase development rights through cash payments in exchange for a deed restriction (e.g., covenant and easement) on the use and future use of a parcel. Such a restriction removes or retires, in perpetuity, the parcel's potential as more developed land. The advent of programs for the purchase of development rights laid the legal foundation for the transferability of severed development rights of parcels. Under TDR programs, once the development rights are separated from parcels, rather than being retired, the development rights can be sold or transferred to another parcel in an area where the additional development potential represented by the purchased rights can be realized.

Obviously, one difference between TDR and PDR programs concerns the overall character of the region. Under PDR, development rights are removed from present and future use; the area remains “undeveloped”. With TDR, today's development rights are shifted from areas that will be preserved to areas that will be developed at higher densities. TDR and PDR programs also differ in the funding source for purchasing development rights. Typically, public funds are used to purchase PDRs, whereas private individual funds are used to purchase TDRs. Another difference between TDR and PDR programs centers on the mechanisms relied on for making them work. PDR programs rely on public officials to plan, coordinate and map out purchases of conservation easements. Conversely, TDR programs rely, to a large extent, on private market sales of development rights between landowners in preservation areas and others (e.g., developers). Market forces are then used to determine which parcels in the preservation area will be protected. Under a PDR scheme, an administrative body determines which parcels will be protected. Under either scheme, it is necessary that the community express its preferences.

In effect, TDR programs are development mitigation programs that are designed to preserve agricultural land, open space, historic buildings and districts, environmentally sensitive lands or other land that is less suitable for development. At the same time, TDR allows owners of these lands to recover some financial benefit from their unfulfilled and restricted development opportunities (Siemon *et al.*, 1996). TDR programs are similar to systems of wetlands credits in

that they mitigate landowners' unfulfilled and perhaps frustrated development expectations. Looking at TDRs another way, developers are permitted to develop at higher densities under TDR programs if they, in effect, mitigate such development by purchasing development rights and preserving another area's landscape. This is similar to wetlands banking, where developers may develop a wetlands area if they mitigate against those effects elsewhere through the creation of new wetlands or the purchase of wetlands or wetland credits for the bank.

TDR, like cluster development, transfers densities from one area to another. Cluster development permits a

density shift from one portion of a site to another portion of the same site. However, TDR programs permit a density shift from one site to another, non-contiguous site. Landowners adjacent to cluster developments are typically buffered from the higher density, but a concern of TDR is the potential conflicts of increased density perceived by adjacent property owners. TDR programs permit the orderly reallocation of density within a given community in a manner that meets legitimate planning objectives without placing unfair burdens on the property owner (Redman/Johnson, 1994). Though similar to cluster development, TDR focuses on the densities of an entire program area.

Mechanics of Transferable Development Rights

By allowing landowners to receive payment for their unused development rights, TDR programs compensate landowners for land use restrictions placed on their property. TDR programs typically refer to development potential as "development rights" in mandatory TDR programs and as "development credits" in voluntary TDR programs. As described above, these development rights or credits can be severed from the property and marketed separately from the land. TDR programs take advantage of the economic incentives to landowners to sell TDRs and to developers who value the additional opportunities to develop that the purchase of development rights represents. Typically, rights are sold by landowners in areas where on-site development is limited and purchased by developers who want to build at greater than normal densities on other parcels determined to be more appropriate for development. The TDR buyer gains the ability to develop property at "bonus" density levels in exchange for the seller receiving monetary compensation through the sale of TDRs. Under this scheme, the community benefits from managed growth and resource preservation that protects agricultural lands, open space, historic sites or environmentally sensitive lands without governmental expenditure of taxpayer dollars.

Basic Structure of a TDR Program

The basic elements of a TDR program are an identified area to be developed at greater than "normal" densities (receiving area); an identified area to be preserved or restricted from development (sending area); the definition, specification and delineation of parcel's development rights; and a process by which rights may be transferred from one landowner to someone else. In the sending area (also referred to as the granting area), landowners are limited in their on-site development opportunities. However, these landowners are assigned transferable (i.e., sellable) development rights. These landowners may not use their properties' development rights within the sending area. However, owners of such development rights may sell them to landowners, developers or others for use in the designated receiving area. When development rights are transferred, the land in the sending area that gave rise to the rights becomes restricted — a permanent conservation easement is placed on it. Such an easement is duly recorded as part of the property's title, which notifies all present and future landowners of the development restriction on the land. In the receiving area, the acquired development rights usually permit development of a particular type and density that would not otherwise be permitted. The transferred development potential, therefore, usually takes the form of additional dwelling units, parking spaces, increased floor area ratio or other concessions.

Mandatory vs. Voluntary

There is some confusion in the use of the terms “mandatory” and “voluntary” regarding TDR programs. In a mandatory program, the zoning classification of the protected area is changed by ordinance so that the speculative development potential is eliminated. In a voluntary program, the existing zoning of the protected area is left essentially unchanged. A number of voluntary programs utilize overlay zoning (Roddewig and Inghram, 1987). Overlay zoning allows an additional zone to be overlaid on the zoning scheme; it does not replace the existing zone — rather, it supplements it. Traditionally, programs considered mandatory are those where the area that contains the resource to be preserved is downzoned or otherwise designated in the land use plan and zoning ordinance as property that can no longer be developed in a way that would destroy the resource. Conversely, voluntary programs require that the protected resources are downzoned or given protection only after the owner of the resource volunteers to participate in the program by selling TDRs to a developer in the receiving zone. Incentives may be utilized to further encourage participation in voluntary programs.

As TDR programming enters its third generation, definitions of mandatory and voluntary are becoming more complex. To address whether a program is mandatory or voluntary, both the sending area and the receiving area need to be examined. A program may be mandatory on the sending side — that is, the resource area is downzoned — but voluntary on the receiving side — that is, developers

may or may not develop with TDRs. A program may also be viewed as mandatory if, on the receiving side, a developer must use TDRs to develop, even if the sending side is voluntary — that is, downzoned after landowner program participation.

The choice between mandatory or voluntary depends a great deal on the political climate at the time of program inception. The essential real estate and economic analyses are no different. Which side of the TDR equation to be made mandatory will depend on the market forces and, perhaps, the stakeholder groups most accepting of the TDR concept. If developers, because of their familiarity with cluster development, are more accepting of the requirement for TDRs and there is market demand for the type of development that requires the TDRs, then making the receiving side mandatory may be more appropriate. This will create a demand for TDRs and make it possible for the sending side to be made voluntary. If the resource community is in strong support of preservation, it may be more willing to accept a mandatory sending side program. Creating a supply of TDRs encourages developers to voluntarily seek TDRs to increase their development potential. Phasing a program, going from voluntary to mandatory, may prove useful. When development pressure is weak, a voluntary program may be more appropriate. Any transactions, no matter how few, constitute real-world examples of program participation. Once the development pressure grew and sprawl became an issue, a mandatory program could be established.

Sending Area

The sending area is the region of the community that stakeholders and planners wish to preserve and protect (see Plate 3, blue areas). The threatened resource may be prime and unique farmland, forested areas, historic sites, steep slopes, wetlands, aquifers, coastal areas, scenic landscapes or another type of land that communities decide to protect. Because such threatened resources provide the impetus for TDR programs, the identification of a TDR program's sending area is typically one of the first and easier steps in program design and implementation. The sending area is the zone from which development potential is transferred or sent out. The incentive for sending-area landowners to sell their TDRs is monetary. These landowners can receive money for their properties' development rights without having to

sell their land or allow access to others. Furthermore, these landowners are able to continue with permitted uses, typically limited to a non-development or predevelopment activity such as agriculture, open space or passive recreation. The permitted building densities and uses within both the sending and receiving areas should be relatively low compared with the number of TDRs allocated. Such a ratio tends to strengthen the incentive to sell TDRs. Creating a surplus of rights relative to the market for their use can lead to a dilution of the value of such rights.

Receiving Area

The receiving area is the region of the community where development is encouraged (see Plate 3, red areas). The TDR receiving area accommodates or

receives the additional development potential from the preservation area (sending area). Ideally, the receiving area contains the amenities, utilities and resources needed to support development. Several incentives may be offered to receiving-area landowners to encourage them to purchase and use TDRs. Most often, the primary incentive for TDR purchase is increased building density. Receiving areas are often in high-density districts where there is a deficit of on-site development opportunities. TDRs may be used to develop programs that allow maximum density development. Receiving-area lands may be set up with two zoning densities — the base density and a bonus density. That is, zoning restrictions and density limits are tiered, with or without TDRs. The base zone specifies the density under the present system. In most TDR programs, this base density is lower than the TDR bonus density. In these cases, an overlay or combination zone would specify additional units that could be added if TDRs were utilized. A unique

example of such a zoning scheme is in Thurston County, Wash. The Thurston program sets a bonus density that is either lower or higher than the base density. This was in response to the Thurston County's housing market. Because there was a market for large-lot single-family residences, the bonus density that could be achieved through TDR acquisition was lower than the base density. Therefore, large-lot single-family density can be achieved through TDR exchanges.

Permitted base and bonus densities must be politically and legally acceptable. To locate receiving areas, physical, environmental and social criteria must be met to assure that development is physically and environmentally feasible and socially feasible to avoid problems, including the NIMBY (“not in my backyard”) phenomenon. The current zoning and zoning history of potential receiving sites must be thoroughly understood. Potential receiving sites must

Advantages Attributed to TDR

- Reduction of arbitrary and inequitable “windfalls” and “wipeouts” that frequently accompany governmental use of the police power to regulate land use. The concept was developed as a means of avoiding the usually harsh results of downzoning — “wipeout” — and the usually beneficial results of upzoning — “windfall.”
- TDRs balance the advantages and disadvantages of a public policy decision about planning and land development.
- More effective long-term preservation of environmentally sensitive areas, open space and agricultural lands. The associated deed restrictions are in perpetuity.
- Unification of plans and programs for development and environmental protection.
- A shift of a larger share of the total social cost of new development to the developer and the ultimate consumer.
- Preservation landowners retain the underlying property for uses other than on-site development.
- TDR is market driven, utilizing private funding rather than public funds..
- Recoupment of a portion of private gains created by public investment.
- The program can be designed to be strictly voluntary, making it more palatable to residents.

Disadvantages Attributed to TDR

- It is rated among the most challenging preservation techniques to design and implement.
- TDR programming is complex and has seen limited use. TDR programs are complicated and require an investment of time and staff resources to implement, monitor and maintain.
- It requires planning commitment; ability to achieve zoning variances and changes would doom a TDR program to fail.
- It requires political commitment, municipal leadership and extensive public education.
- It requires developer, builder and realtor support. These groups have traditionally been opposed to further regulation of land use and development.
- Preservation depends on the development market. If the real estate market is depressed, the demand for TDRs will be low and few properties will be protected.

Source: Bateman, 1975; Siemon *et al.*, 1996; and Machemer, 1998.

be physically appropriate for both base and bonus use and intensities. Additionally, they must be politically appropriate because the success of TDR programs depends upon the usability of TDRs in receiving areas. The receiving area is probably the most critical aspect of a TDR program. Its ability to accommodate development potential will determine the program's ultimate success in permanently protecting the

preservation area (Gottsegen, 1992). Gaining consensus on the areas to be receiving areas, including their location, base and bonus uses, is most challenging. There is always concern that future developers and landowners may argue that they be permitted to develop at TDR bonus densities without TDRs. Succumbing to this argument would result in a severe loss of legitimacy for the TDR program.

Relationship between sending and receiving areas

Some researchers and practitioners believe that defining the receiving areas is a significant component of a TDR program (Stokes, 1997; Criss, 1997; Canavan, 1997; Redman/Johnson, 1994; and Gottsegen, 1992). However, it seems that the relationship between sending and receiving areas is the most significant element of successful TDR programs. It is the balance between these two areas, between the supply of development rights allocated and the demand for such rights in the receiving area, that is critical to the success of a TDR program. An imbalance in one direction or the other can lead to program failure. For example, if the number of opportunities for using transferable development rights outweighs the opportunities to sell (send) such rights, the sending-area landowners will have an advantage. Conversely, if the number of sending opportunities

outweighs the receiving opportunities, developers and landowners in the receiving area will have an advantage. The balance achieved between sending and receiving interests depends, in part, on the primary goal of the TDR program. If the goal is preservation, then the program might choose to err on the side of increased opportunities to use development rights in receiving areas. If the program goal is guided development, then the program might choose to err on the side of increased sending opportunities. Because TDR programs have been initiated directly or indirectly as a landscape preservation technique, the current theoretical literature suggests that the ratio of receiving to sending opportunities in a TDR program area be 2 to 1 (Carmichael, 1975).

Development Rights Allocation Methods

Calculating TDRs

Calculating the number of TDRs to be allocated in a community's sending area and figuring the number of TDRs to be used in the receiving area are closely related tasks. In designing a TDR program, communities must consider the maximum amount of future development in the region. To accomplish this, communities can perform build-out analyses of various scenarios to compare traditional zoning and TDR regimes. Additionally, a TDR allocation method must be defined and the actual TDRs must be allocated. These separate tasks must be closely coordinated.

Two basic allocation approaches may be taken, either a "top-down" or a "bottom-up" approach. Under the top-down approach, the community first determines

the total amount of future development appropriate for the community. This amount of development is then separated into two types: zoning right (base) opportunities and TDR (bonus) opportunities. Once the number of TDR opportunities is determined, the community then specifies the method or mechanism by which these opportunities will be distributed among the sending-area landowners.

In the bottom-up approach, the method of rights allocation is the first policy established, and then the total amount of future development is determined. It is based on the sum of rights generated by the property in the sending area (Gottsegen, 1992). A bottom-up approach is frequently used when TDR program designers use and build on existing zoning schemes as the basis of the allocation method. One weakness with the bottom-up approach to TDR programs arises when a community's calculated number of TDRs exceeds its needs or development goals. If the number of TDR opportunities when added to base development

opportunities exceeds the community's goals or market demand, the program will have only limited success.

Allocating TDRs

A TDR program requires some method for allocating the development potential originally associated with sending-area properties. The method selected for issuing development rights should be easy to administer and reflect the diminution of values associated with those parcels in the sending areas. Some approaches proposed for issuing development rights are based on: per acre bases (including consideration of property characteristics), previous zoning, unit-for-an-equivalent-unit basis and a measure of monetary loss actually suffered (Heeter, 1975).

The per acre method of development right allocation assigns rights based on a particular unit of acres. This system has the advantage of being easy to administer, and often the sending landowners feel that their allocation is just, that it falls within existing zoning allowances. A disadvantage to this approach is that it is often not equitable. For example, under such a program, a person who owns 100 acres of prime and

unique farmland receives the same allocation as someone with 100 acres of infertile, steeply sloping land. One possible way to remedy this is to account for property characteristics in the allocation method — that is, take into consideration program objectives and a parcel's physical characteristics (see New Jersey Pinelands box). Property characteristics that have been used include soil quality, population density, crop type, location, size and existence of infrastructure.

Some communities have downzoned by changing the zoning in the sending area from more intensive uses to less intensive uses (e.g., from rural residential to agricultural). Under these circumstances, the community may opt to allocate rights based on the previous zoning. For instance, in Montgomery County, Md., any property in sending areas receives one right per 5 acres. Therefore, a farmer with a 100-acre farm with one residence would receive 20 rights less one right for the existing residence. This allocation formula — one right per 5 acres — was based on the zoning prior to the TDR program, which included downzoning, one dwelling unit per 5 acres in the agricultural district. Using previous zoning as the allocation method meant that perceived development potential was not diminished. An advantage to this

New Jersey Pinelands Development Credit Program Allocation Method

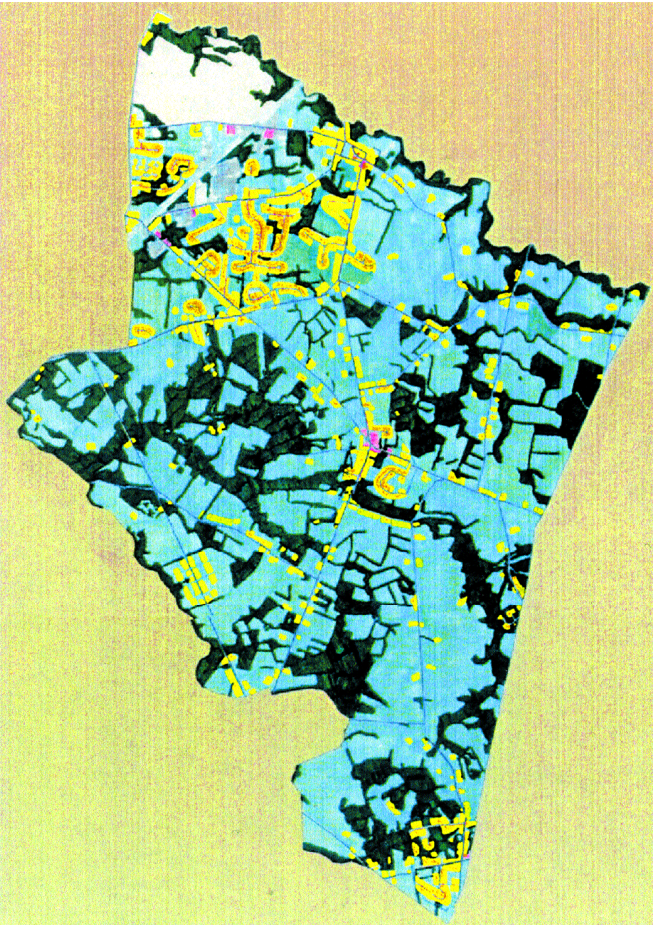
The Pinelands Development Credit Program allocates Pineland Development Credits (PDCs) on the basis of property characteristics. Each property in the program's sending areas is individually evaluated to determine a precise number of development rights that can be transferred. The PDC allocation formula assigns more rights to certain types of property than others. These differences generally reflect the relative value of various types of land. The differentiation of rights allocation is also intended to encourage farming in various parts of the Pinelands.

The basic principles are:

- Owners of small properties (generally 4,356 square feet or more) are guaranteed at least one right if they have owned the subject property since February 7, 1979. This guaranteed right is lost if the property is sold before the PDC is severed from the parcel's "bundle of rights."
- Properties with businesses or homes on them do not receive as many development rights as similar properties that are undeveloped.
- Actively farmed land located in one of the two agricultural areas and land approved for mining activities receive one right for each 4.9 acres.
- Lands that have been mined do not receive an allocation.
- Wetlands receive a low allocation (because such lands have limited development potential due to physical characteristics and other barriers to developing wetlands) — one right for every 49 acres.
- Other lands in one of the two agricultural areas receive one right for each 4.9 acres.
- Other lands in the preservation area district receive one right for each 9.8 acres.

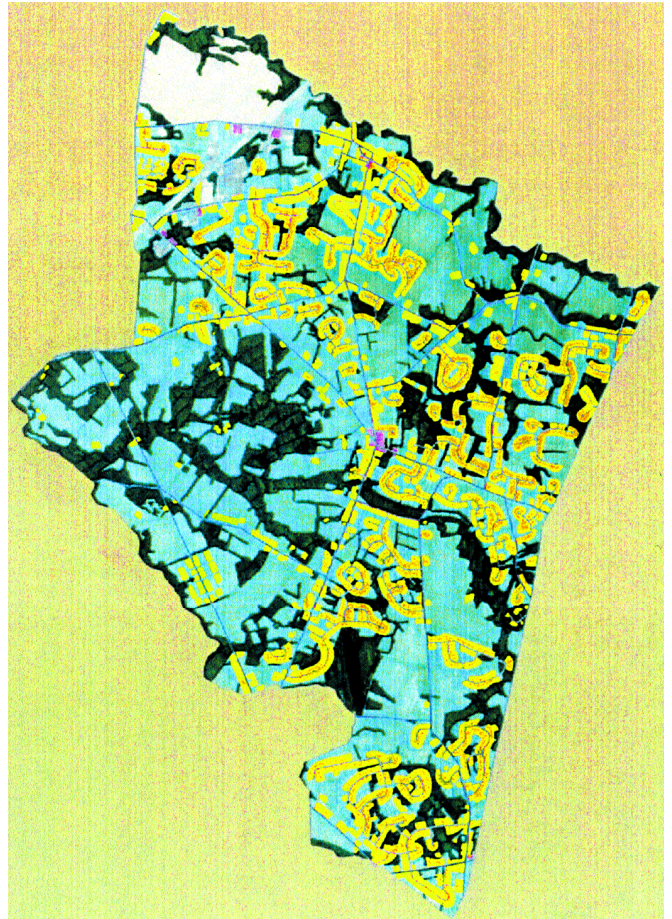
Source: The Pinelands Development Credit Program: Transferring Development Rights in New Jersey's Pinelands

Plate 1: Township area as currently developed



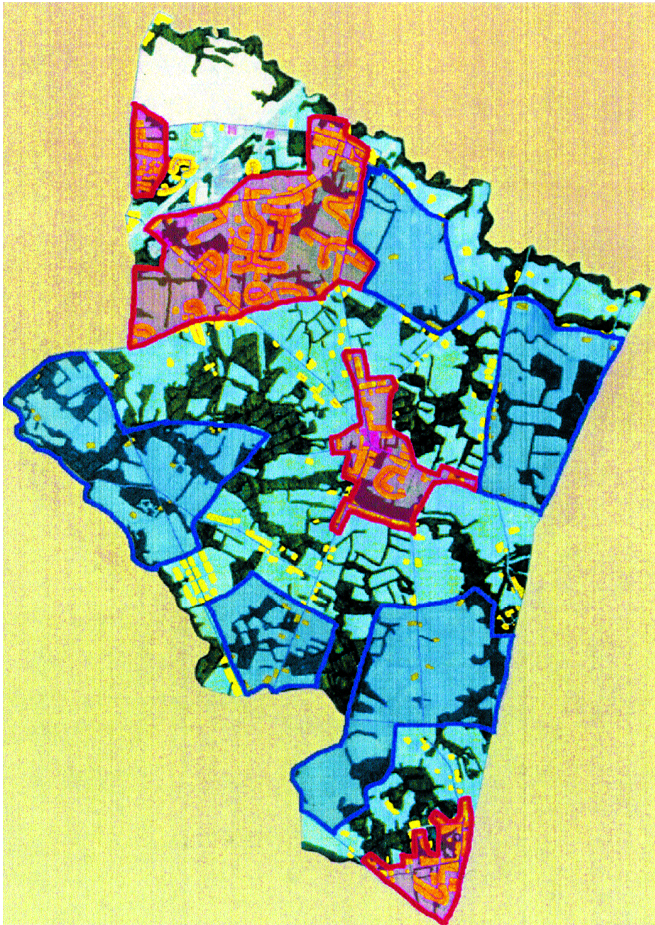
Source: Adapted from Gottsegen, 1992

Plate 2: Future township area under conventional development



Source: Gottsegen, 1992

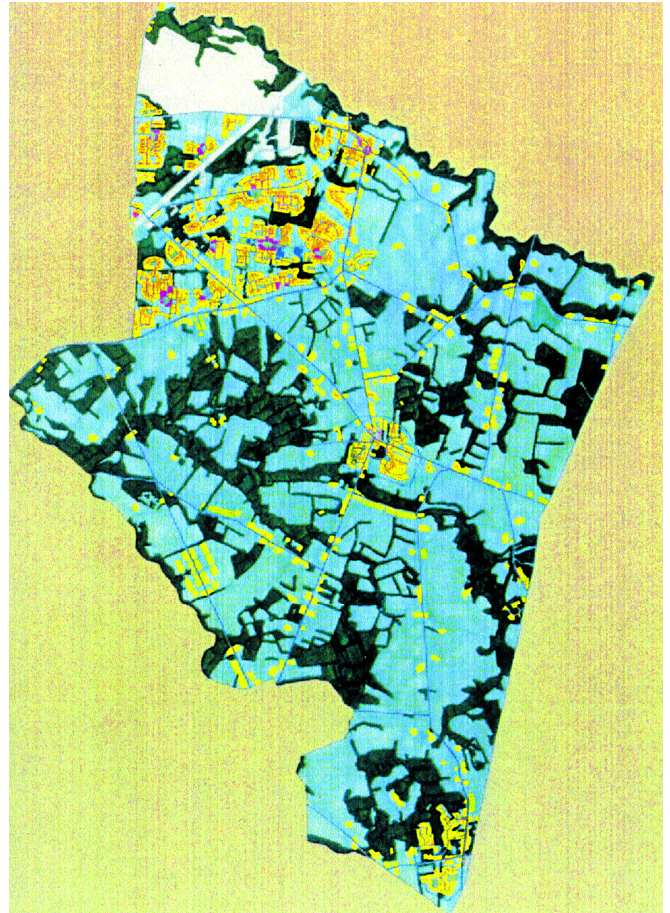
Plate 3: Township area with sending and receiving areas



Source: Adapted from Gottsegen, 1992

This image (Plate 3) shows the township as currently developed with potential sending areas depicted in blue and potential receiving areas depicted in red.

Plate 4: Future township area under TDR development scheme



Source: Gottsegen, 1992

This image (Plate 4) illustrates how the township could be developed under a TDR scheme. Development is concentrated in appropriate areas, while open space and agricultural and forested areas are protected in contiguous blocks.



Pinelands

approach is that it is easy to administer. Like the per acreage method, the previous zoning method suffers from the disadvantage that its equitability depends on what production and development capabilities the previous zoning method took into consideration.

When development rights are allocated on a unit-for-an-equivalent-unit basis, the existing zoning classification is taken into consideration. There is confusion over whether unit-for-unit is use or intensity specific. Most existing TDR programs are use specific. Development rights are allocated on the basis of

density permitted — typically residential housing — and the receiving sites use the rights for increased density in residential developments. Manheim Township, Pa., offers an example, where the allocation of .73 TDRs per acre was based on the practical density yielded by the zoning designation prior to TDR programming. The advantage of this approach is that it is easy to administer. The disadvantage is that it depends on sound land use planning. If the study area is overzoned, there will be a surplus of TDRs and the market will be unbalanced. If a community attempts to accommodate all the development permitted by an overzoned ordinance, it will need to have a large receiving area(s). This will make receiving area identification and acceptance even more challenging. This approach also suffers from the same criticism as the per acre approach — it is inequitable. A solution would be to issue more development rights per acre to lands deemed more valuable. This complicates TDR program design and may prove more detrimental than beneficial in initiating a program (Canavan, 1997; Criss, 1997; and Stokes, 1997). Another criticism of the unit-for-equivalent-unit approach is that, to assure owners of development rights compensation, a TDR system must be flexible enough to allow the owner of one kind of rights to sell them to a developer in need of a different kind of right. Creating rights in a sending area currently zoned single-family to be used in a

Pros and Cons of Mandatory and Voluntary Programs

Mandatory

Pros:

- Appropriate when there is widespread public and political support for the resource protection.
- Can be effective in directing growth.
- Forces participation.

Cons

- Difficult to establish.
- Increased possibility of lawsuits challenging the TDR program.
- Requires significant educational effort to convince resource owners that the program will not significantly harm their economic interest.

Voluntary

Pros

- Easier to initiate.
- Less initial objection because it is ultimately left to the landowner to participate or not.
- Appropriate when the resource protection is controversial or support is divided.

Cons

- Because it is voluntary, participation in program may be low.
- A well designed and structured system is necessary to achieve any preservation.

receiving area where multifamily housing is in demand results in surplus single-family development rights. Programs that have allowed TDRs for multiple uses seem better able to accommodate market demands.

The three methods of development right allocation — per acre, previous zoning and unit-for-unit — have been criticized as inequitable. It is argued that they do not take into account the fact that some properties are inherently more valuable than others. For instance, imagine two landowners who each own 10 acres and existing zoning allows one dwelling unit per 10 acres. Each owner receives the same potential compensation — i.e., the same number of TDRs — regardless of the value of his/her land. If one landowner has property with water access and exceptional views, the development potential could be worth \$50,000. Comparatively, if the other landowner has property adjacent to a landfill and a factory, that parcel's development potential may be worth \$10,000. However, under the basic allocation method, each property owner receives the same number of development rights and the rights are valued the same by a developer who wants to utilize TDRs. It would appear inequitable if the two landowners received the same compensation for their development rights. To address this apparent inequity, the allocation method can be refined to establish a value for each right. An appraisal method could be used. Such a system is still problematic, however, because one development right, regardless from where it came and what it cost, translates into one additional dwelling unit in a receiving area. A developer would try to purchase TDRs from the lowest cost provider.

A solution might be to issue different total numbers of development rights to landowners with each right valued at \$1,000. This complicates TDR program design. The right to build two dwelling units, under the existing zoning, would translate into the need for 60 development rights. Addressing the inherent inequities of land for both agricultural production and development makes TDR programming complicated. This complication may cause program failure before the program is ever begun (Canavan, 1997; Criss, 1997; and Stokes, 1997).

Early theoretical work addressed another approach to TDR allocation based on estimated TDR credit value and development easement value. This approach viewed the rights as a readily fungible commodity

(Heeter, 1975). Each landowner's loss or gain would be measured before and after the land use plan and TDR program were implemented. For each property in the sending area, the appraised development easement value is divided by the estimated average TDR value to determine the number of credits to be allocated to that property. The average TDR value is based on an estimation of developer profit. The development easement value is the difference between a property's value for development (full market value) and its resource value under a given set of deed restrictions (deed restricted value). For example, if the estimated TDR value is \$5,000 and the appraised development easement value for a property is \$250,000, then that property would be allocated 50 TDRs. The total number of TDRs allocated to all sending-area properties determines the total amount of bonus development in receiving areas.

A major disadvantage of this method is that, early in the TDR planning process, it depends on property value and average TDR credit value estimates. Based on current zoning, this method may lead to an unbalanced TDR market, which will undermine the TDR program. The reliance on current zoning allows current property values to drive the planning process. There is the potential to encourage excessive development in rural areas that are overzoned. An advantage of this allocation method is that rights become a commodity that can be transferred between residential, commercial and industrial uses. A developer would be required to possess rights equal in value to a certain percentage of the value of his/her land and proposed improvements, and it would make no difference from where the rights were purchased. This last approach has been developed in theory but has not been implemented thus far.

Transfer Procedure

The three components of a TDR program discussed above are combined in a fourth component, the rights transfer procedure. There are four types of TDR transfers: between adjacent parcels, within a designated district, from non-urban to urban areas within a local jurisdiction and between local jurisdictions within a region. Transfer between adjacent parcels may involve parcels under the same ownership (e.g., York County, Pa.) or parcels owned by several landowners (e.g., New York City). The

transfers within a designated district involve transfers within a specified district (e.g., Chicago program). The first two types of transfers were prevalent with first-generation TDR programs. Transfers within a local jurisdiction between rural and urban areas gained strength with second-generation programs aimed at environmental and agricultural land preservation. The last type of transfer, across local jurisdictions, is the most complex and generally associated with second- and third-generation programs. Sending and receiving zones may exist in all jurisdictions. However, most often some jurisdictions contain sending areas and others contain receiving areas. This type of transfer requires interjurisdictional cooperation and, most likely, enabling legislation that permits cross-jurisdictional land use planning. Examples of this type of transfer program are found in the New Jersey Pinelands and Thurston County, Wash.

An essential element of any TDR program is the legal and administrative framework that establishes the procedures for the transfer of rights. The transfer process must have a legal basis and must be administrable. Typically, this essential element of TDR programming is found in legislative acts and local ordinances. Because most TDR programs entail transfers of rights for residential use, the procedure by which rights are transferred is usually tied to the development permitting process. Tying the TDR process to the subdivision or development permit process reduces complexity. Often a public TDR bank can play a direct role in the transfer procedure by allocating rights or issuing transfer certificates.

The Roles of a TDR Bank

A public bank can prove extremely useful in TDR programming. A TDR bank theoretically purchases rights with public moneys from sending-area landowners and resells them to builders or developers for use in designated receiving areas. Some believe that a TDR bank is necessary to ensure the success of a program. Though it may be argued that it is not necessary, it is evident through more than 25 years of TDR programming that it is invaluable. Such banks serve as catalysts and facilitators, lend credibility and help to balance the market.

The existence of a bank creates credibility because, if developers and landowners see that a bank is actually purchasing TDRs, they are confident that the TDRs have value. Additionally, if they see that the bank can sell TDRs, landowners will recognize that there is indeed a development rights market. TDR banks provide credibility for lending institutions; in effect, the active participation of a TDR bank gives legitimacy to the economic commodity of TDRs and to the transfer of rights process.

The bank may serve only as a catalyst, making initial purchases to encourage or “jump-start” private market participation. In Montgomery County, Md., the TDR bank functioned as a catalyst. Although a County Development

Rights Fund was established in Montgomery County, the private market has been so active that no public purchases needed to be made.

Beyond acting as a catalyst, the TDR bank may also serve to balance TDR demand over time. Demand for development has highs and lows; when the demand for development is low and, therefore, the demand for TDRs is low, the bank may serve as a purchaser of TDRs — in effect, acting as a buyer of last resort. When demand for development is high, the demand for TDRs will be high, and the bank can provide another source of TDRs. “The bank, if adequately funded, can balance the supply and demand factors necessary to make a TDR program work. Creation of a well-funded TDR bank can help establish and stabilize the prices paid for TDRs” (Roddewig and Inghram, 1987, p. 27).

Another TDR bank function is to facilitate private market transactions. The Pineland Credit Bank plays a major role in bringing private market sellers and private market buyers together. In Montgomery County, there was an inquiry into a public bank purchase, but the end result was that the bank introduced the interested seller to a potential buyer, eliminating the bank’s active role as a TDR purchaser.

History of TDR

Theoretical Development

TDR combines the concept of separation of development rights from land and the ability of communities to control development, neither of which is innovative by itself. European land use policy has incorporated both concepts in its land management. For example, Britain nationalized all development rights in 1947. "Ownership" under the British scheme is simply the right to continue using the land as it is currently utilized. British landowners hold no inherent right to develop. Great Britain's Town and County Planning Act of 1947 repealed all zoning laws, established a permit system for development, expanded eminent domain powers and vested all development rights in the government. Criticisms of the act included the purported creation of economic distortions and elimination of incentives to develop. It was also cited as overly complex and costly to administer, and it vested excessive discretion in local authorities. In 1953, nationalization was repealed. In 1975, the British passed the Community Land Act. This act, like its predecessor, in effect nationalized development rights by giving the government the power to acquire at current use price all land needed for development.

In the United States, the TDR concept was introduced by Gerald Lloyd (1961). Chavooshian, Norman and Nieswand (1973), Costonis (1972, 1974), Rose (1975) and Carmichael (1975) furthered the development of the TDR concept. Most TDR programs have been established to protect environmentally or historically important sites or buildings. Chavooshian *et al.* studied the concept of TDR in environmental planning and open space preservation. Rose and Carmichael examined the legal and economic aspects. Costonis discussed the use of TDRs as a method of historic landmark preservation that avoided the takings issue. Interestingly, New York City, Chicago and San Francisco have created TDR programs to protect historic buildings by allowing the transfer of some or all of the difference between the floor area allowance of the designated landmark building in question and that of potential new structures that could be developed on the site if the landmark were razed. The theoretical development of TDR has also centered on

agricultural preservation. TDR was a mechanism to curb urban sprawl and to protect farmland and the agricultural community. Other theoretical investigations of TDR centered on the method as a means to encourage redevelopment, development or rehabilitation of low-income housing (Roddewig and Inghram, 1987; Rory, 1975).

Once pioneering TDR programs were underway, investigators focused their efforts on the evaluation of those first-generation programs. This helped move forward the theory of TDR that resulted in improvements in the second-generation TDR programs (Roddewig and Inghram, 1987; Pizor, 1986 and 1978; and Tustian, 1983). This resulting literature dealt less with the theory of transferable development rights and more with the practice of TDR programming. Much of this literature was dominated by reviews of existing TDR programs.

Program Development

In general, TDR program development is seen as taking place in three successive waves: the first generation from late 1960s through the 1970s, the second generation during the 1980s, and the third generation during the 1990s.

During the late 1960s and early 1970s, a number of first-generation TDR programs were established. Developers in New York City have undertaken transfers of development rights for decades. Though they have made use of air rights to construct buildings exceeding standard zoning density, it was not until 1968 that a TDR program was developed specifically for landmark buildings. In that same year, NYC amended its zoning ordinance to permit a transfer of development rights from a designated landmark building to "adjacent" lots on the same block, across the street or diagonally. New York City's TDRs are allocated on the basis of the unused floor area ratio (FAR) from the landmark building and are transferred to receiving sites on a one-to-one basis. The purpose of this TDR program was twofold: to ensure preservation of historic landmark buildings and to ensure quality development on adjacent sites. New York's TDR

Preservation, Housing Rehabilitation and Environmental TDR Programs

South Street Seaport

In New York City, the TDR concept has been applied not only to landmark buildings but also to historic districts, as was the case with the South Street Seaport area. Unused development rights were shifted from a designated preservation area to a designated redevelopment area. A consortium of financial institutions agreed to accept development rights in exchange for writing off delinquent mortgages, which enabled the owners of buildings in the Seaport District to qualify for loans to renovate their properties (Roddewig and Inghram, 1987). Commercial banks were permitted to hold development rights in a TDR “bank” and to sell them to potential developers for new construction. TDRs were a catalyst for reinvestment in the historic buildings of the South Street Seaport area and development in areas of the district capable of supporting additional density. South Street Seaport is now a vital area, with both commercial and office uses.

Suffolk County

In 1972, Southampton Township in Suffolk County, Long Island, adopted a zoning ordinance with an optional transfer of development rights to preserve prime agricultural lands. Farmers were given the option of developing entire tracts under conventional zoning or clustering development on 20 to 40 percent of the site. Farmers could opt to transfer the development potential from their land to other sites in a different district. This program was the first to apply the concept of off-site transfers.

Seattle

The 1985 Seattle downtown plan included four TDR components; one was to retain and rehabilitate low-income housing. The plan provided for a base floor area ratio (FAR) and a bonus FAR. A developer could increase density through general bonuses such as the provision of day care or parks, or from the transfer of unused development rights from designated Seattle landmarks. The FAR could be increased further with a combination of general bonuses, affordable housing bonuses, and TDRs from low-income housing or landmarks. An increase to a maximum FAR could be achieved only through the low-income housing TDR or through bonuses involving construction of low- and moderate-income housing or rehabilitation of vacant residential buildings.

Environmental TDRs

Collier County, Fla., is cited as one of the pioneers of TDR programming that seeks to protect environmentally significant forests, wetlands and aquifers (Roddewig and Inghram, 1987). The county enacted its program in 1974 (amended in 1979) to preserve ecological resources. The program was intended to protect more than 40,000 acres of environmentally sensitive land, including barrier islands, mangroves, saltwater marshes, coastal beaches and cypress stands. The program utilized an overlay zone known as the Special Treatment Overlay District. Landowners with 2 or more acres in the overlay zone could be allocated up to a 0.5 dwelling unit for each acre owned. Development rights could be transferred to multifamily and residential tourist districts, resulting in density increases of 10 to 20 percent.

program was the first in the country and continues to be one of the most successful (Roddewig and Inghram, 1987).

In 1978, Calvert County, Md., enacted one of the earliest TDR programs specifically designed to preserve farmland. Calvert County, on the western shore of the Chesapeake Bay, had experienced extreme growth pressure from Washington, D.C. The county's 1974 comprehensive plan expressed the need and desire to save more farmland. The combination of development pressure and local desire for farmland preservation resulted in the establishment of a committee charged with investigating land use

planning alternatives. The investigation culminated in a local vote that selected TDR programming. The county's original goal was to preserve 20,000 acres of prime farm- and forestland. It took three more years before any rights were transferred. However, this program is now viewed as successful. As of July 1996, the Calvert County TDR program resulted in 400 transfers at an estimated cost of \$8 million to preserve 6,000 to 7,700 acres (American Farmland Trust, 1997; Daniels and Bowers, 1997; Heiberg, 1991).

Other programs established during the 1970s include Southampton Township, N.Y., in 1972; Buckingham Township, Bucks County, Pa., in 1975; Eden, N.Y., in

1977; and in 1975, Hillsborough Township and Chesterfield Township, Burlington County, N.J. Chesterfield's program was New Jersey's first municipal program. Chesterfield Township's zoning ordinance has permitted voluntary transfer of development potential between non-contiguous tracts to protect prime farmland since the early 1970s, and in 1975 the township adopted a voluntary transfer of development credit (TDC) program.

These first-generation programs share some similarities. One common aspect is that they were created and implemented by small staffs of municipal employees that had additional planning responsibilities. Redman/Johnson (1994) attribute part of early program failure to design flaws attributed to limited staff numbers, which hampered the opportunities to analyze or modify program components. The ability to assess and make changes to a program is paramount for a successful TDR program. Most second- and third-generation programs learned from others' earlier experiences. Designers of some later programs made their TDR program a single component of an overall growth management program; if TDR failed, the entire program was not at risk.

Another commonality of first-generation programs was that TDR was established as an option. In the preservation areas, landowners had the option to either develop their land or sell the development rights. Therefore, these programs were voluntary and lacked the development restrictions necessary to create a supply of TDRs from the sending area. Because development was not restricted, there was little incentive to sell rights (Redman/Johnson, 1994). Those programs with the strictest provisions against developing in the sending district, such as Collier County, Fla., and NYC, had the most transfers (Pizor, 1986) and were most successful.

Maabs-Zeno (1981) reviewed 23 development rights programs designed to protect agricultural lands. Maabs-Zeno found that, despite an active real estate market in many program areas, only six transfers had occurred. Despite the lack of success of first-generation programs, many communities facing the crisis of urban sprawl and a need for growth management investigated the use of TDR to meet their land use or preservation objectives. Armed with lessons learned from the first-generation programs and lured by the promise of TDR programs, designers produced a wave

of second-generation programs during the 1980s. (See TDR Program box.) Program designers invested more energy and time in land use analysis, including real estate market studies. Second-generation program designers learned the importance of including stakeholders in program design and implementation and placed a greater emphasis on program participants and the incentives needed to gain their support and participation. Nonetheless, more failures than successes can be counted among these second-generation efforts (Redman/Johnson, 1994).

Today's third-generation TDR programs are a combination of revised earlier generation programs and new programs. Chesterfield Township, N.J., a first-generation program in 1975, has become a third-generation program with the township's approval of its 1997 master plan. In 1994, Buckingham Township revised its first-generation program (1975). Thurston County, Wash., (1996) and Manheim Township (1991) are third-generation programs with no previous history of transferring development rights.

Third-generation programs benefited from the successes and failures of earlier programs. They also made innovations. For example, municipalities investigated the idea of requiring landowners to purchase TDRs when programs or processes enhance the value of their lands. Harford County, Md., considered the requirement of TDR purchase to achieve zoning changes or variances. Harford had a TDR provision for transfers between contiguous parcels that had seen limited use. As a third-generation program, Harford sought incentives for encouraging TDR utilization. A task force recommended that the transfer of development rights be initiated through the comprehensive zoning review as a way to designate receiving properties. They envisioned that there would no longer be any "free" rezoning. Landowners approved for increased development and density would be required to buy and use TDRs equal to the difference between their prior density and their new density.

San Luis Obispo County introduced the concept of "married" sending and receiving sites. In doing so, it fosters a sense of place across the program region rather than within either the sending or the receiving areas. By keeping the sending and receiving sites in close proximity, the affected community — both preservation and development — can view the preserved site and utilize the development site. This

Existing TDR Programs¹

Alaska	Matanuska-Susitna Borough		Hollywood
Arizona	Scottsdale		Indian River County
California	Agoura Hills		Lake County
	Belmont		Largo
	Brisbane		Lee County
	Burbank		Monroe County
	Claremont		Palm Beach County
	Cupertino		St. Petersburg
	Irvine		Sarasota County
	Los Angeles	Georgia	Atlanta
	Malibu Coastal Zone	Idaho	Fremont County
	Marin County	Illinois	Northbrook
	Milpitas	Kentucky	<i>Scotts County (pending)</i>
	Morgan Hill		<i>Lexington-Fayette County (pending)</i>
	Moraga	Louisiana	New Orleans
	Oxnard	Maine	Brunswick
	Oakland		Cape Elizabeth
	Pacifica	Maryland	<i>Baltimore County (pending)</i>
	Pasadena		Calvert County
	Pismo Beach		Caroline County
	San Bernardino County		Charles County
	San Diego		Harford County
	San Francisco		Howard County
	San Luis Obispo		Montgomery County
	San Mateo County		Queen Anne's County
	Santa Barbara		St. Mary's County
	Santa Monica Malibu Mountains		Talbot County
	South Lake Tahoe		
	Tahoe Regional Planning Agency		
	West Hollywood		
Colorado	Boulder	Massachusetts	State of Massachusetts
	Denver		Groton
	Douglas County		Northampton
	Pitkin County		Nantucket
			Sunderland
			Townsend
Connecticut	State of Connecticut	Michigan	Traverse City
	Windsor	Minnesota	Blue Earth County
District of Columbia	District of Columbia	Montana	Gallitan County
			Bridger Canyon Zoning District
			Springhill Community
Florida	Alachua County	New Hampshire	State of New Hampshire
	Brevard County	New Jersey	Bernards Township
	Charlotte County		Chesterfield Township
	Clearwater		Hillsborough Township
	Collier County		Hunterdon County
	Dade County		
	Delray Beach		
	Florida East Everglades		
	Hillsborough County		

Existing TDR Programs¹

	Lumberton Township		<i>Oley Township (pending)</i>
	<i>Mansfield Township (pending)</i>		Pittsburgh
	Pinelands		Shrewsbury Township
	<i>Springfield Township (pending)</i>		Springfield Township
	West Windsor		Upper Makefield
New York	Central Pine Barrens (L.I.)		Warrington Township
	Eden		Washington Township
	New York City	Rhode Island	State of Rhode Island
	Perinton	South Carolina	Greenville County
	Smithtown		
	Southampton Township	Texas	Dallas
	Suffolk County		San Marcos
North Carolina	<i>Wake County (pending)</i>	Utah	Tooele County
Oregon	Portland	Vermont	Jericho
			St. George
Pennsylvania	Birmingham Township		South Burlington
	Buckingham Township		Williston
	Chanceford Township	Virginia	Blacksburg
	Cordorus Township		
	<i>East Hampfield Township (pending)</i>	Washington	Everett
	East Hopewell Township		Island County
	East Nantmeal Township		King County
	Hopewell Township		Seattle
	Kennett Square		Thurston County
	London Grove Township	Wyoming	Teton County
	Lower Chanceford Township		
	Manheim Township		

enhances public acceptance of increased density at the receiving site. “The director of the Land Conservancy of San Luis Obispo stated that the premise behind married sites has been critical. There has been no opposition in the community and strong interest from landowners who are ready to move ahead” (Bowers, 1995, p. 5).

During the 1980s, the number of articles written about TDRs exceeded the number of rights transferred (Pizor, 1986). Though many experts have said that the TDR concept has not yet lived up to its expectations, the success of TDR, given its long-term perspective and focus on development redistribution, has been underrated. The presence of TDR programs in less than 150 communities around the country may be a

reflection of the difficulty and complexity of implementing a TDR scheme more than any real or perceived low success rate. Of course, the question of why TDR has not lived up to its expectations remains. Pizor (1986) attributed part of program failure to the lack of a clear definition of the program purpose. Earlier articles credited program failure to poor design and implementation (Roddewig and Inghram, 1987). For example, a number of local Pennsylvania programs designed to transfer development potential by permitting increased densities were dominated by single-family large-lot housing and had no market for higher density residential development. Without demand for TDRs, the programs were, and are, doomed to fail.

Perhaps failure can be attributed to the timing, design and implementation of a TDR program and overall zoning and planning. Local TDR programs that have seen no transfers may be successful once a development threshold has been reached. Rather than failures because of an absence of transfers, these programs may in time be seen as successful because the TDR programs were in place before the regions

reached the needed development demand. In other words, programs perceived as failures today may actually be laying the foundation for future successful programs. Rather than waiting for the demand threshold to be reached to react, design and implement the program, these communities may be proactively planning and preparing for successful TDR programming in the future.

Conclusions

Adding TDR to our more conventional growth management techniques adds an important dimension. TDR is based on the presumption that economic and environmental interests are served best when they are balanced. Capitalizing on the importance of private property rights and the power of using market-based approaches to guide and manage development, TDR programs are promising. As development pressure continues to increase in areas where there are preservation goals and objectives, supplemental and complementary growth management techniques are desperately needed. Although communities will continue to strive for growth and development, evidence shows that communities will be increasingly selective in choosing among alternatives. TDR programming recognizes this dichotomy and is uniquely suited to address both of these seemingly contradictory goals — development and preservation.

Most communities do not incorporate TDR in their growth management plans. It is argued (Pruetz, 1997) that the reason is that communities have disregarded TDR or elements of TDR programming because of questions of legality, perceived complexity or lack of familiarity with it. One of the primary purposes of this paper is to provide guidance to communities as they engage in discussions and consider alternatives among the several growth management techniques. The TDR process is useful by itself, even if a TDR program is not initiated. For example, defining and identifying preservation areas is useful in developing a master plan.

This paper demonstrates that TDR is not overly complex and is based on familiar and popular land use techniques. Since the first TDR program in New York City in 1968, at least 125 local, county and regional TDR programs have been established in the United States to protect historical sites, agricultural land and environmental areas, and to rehabilitate urban areas. These programs have been examined in some detail in the hope that familiarity with both the successes and failures associated with past TDR efforts will help to increase awareness of this growth management technique and facilitate application of the technique without repetition of previous mistakes.

Communities increasingly are faced with the seemingly contradictory goals of development and preservation. If urban migration patterns continue unabated in the decades ahead, these tensions will be more intense in the future. As more land is developed, as financial resources diminish, and as agricultural, historical and environmental resources are placed under greater stress, interest in and concern with these critical issues will rise. TDR offers a growth management option that, if used in conjunction with existing land planning techniques, allows communities to meet both their development and preservation goals and thus promote and sustain the quality of life for their citizens.

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Footnotes

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