

**Excerpts from A Study of the Feasibility of Establishing Transferable
Development Rights under the Rivers Protection Act**

**Prepared by:
The Executive Office of Environmental Affairs
The Department of Housing and Community Development**

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Understanding Transferable Development Rights

What is TDR and How Does it Work?

The idea behind transferable (or “transfer of”) development rights is straightforward: shift development away from one location (the “sending area”) toward another location (the “receiving area”). While TDR approaches can vary greatly, five common factors define them:

- TDR is often (but not always) development-neutral in that it changes the pattern but not the total amount or type of development. The amount of development is neither increased nor decreased, but rather shifted from one location to another.
- TDR is generally structured to encourage or require an increase in the allowable density of development in the receiving area while reducing the density of development in the sending area. The overall result is a concentration of development in the receiving areas, reducing development-induced fragmentation of open space and leaving more total land area in undeveloped uses (sending areas).
- TDR provides equity for differently situated property owners by preserving the opportunity for economic gain for property owners in sending areas while increasing value in receiving areas. Thus, the burden of development regulations in different areas is distributed more evenly.
- TDR is usually undertaken to avoid common development impacts or to accomplish an environmental goal, including protection of water quality, preservation of open space, and more efficient use of infrastructure.
- TDR engages the private market in generating transactions and determining the price of development rights. While most TDR programs have some form of locally or regionally administered trading, they are designed to reflect market trends and facilitate private transactions.

The mechanics of TDR involve severing some or all rights to develop a particular piece of property and transferring those rights to a different piece of property. This process results in moving whatever might have been built on one parcel to a different parcel. The transfer is permanently recorded on the sending property’s deed. No current or future owner of the property can get those transferred rights back.

What are the Benefits of TDR?

TDR has many significant benefits. It can result in a shift in development that concentrates growth in city and town centers or other designated growth zones. Such a shift may result in: a more efficient delivery of municipal infrastructure and services; a reduction in traffic

and associated impacts to air and water quality; economic revitalization and infill of existing downtown areas; and preservation of key resource-based industries, such as farming and forestry. Unlike zoning or regulatory programs, TDR results in the permanent protection of open space through deed restrictions that cannot be changed at a subsequent date. Finally, TDR relies in large part on regulating land use through market incentives, which can help to institutionalize “smart growth.”

Another benefit is that TDR distributes the burden of land use regulations more evenly than straight zoning or legislation. Landowners in the sending area share in the financial gains of development by selling their development rights to willing buyers. In this way, the benefit in the receiving area can be distributed among all affected landowners, including those in the sending area. TDR has the advantage of allowing the market to generate individual transactions while serving the overall policy goal of shifting and concentrating development.

What is a Development Right?

A development right is one of the components that make up a property owner’s bundle of rights. This bundle of rights also includes, but is not limited to: the right to use, access, lease, sell, and bequeath land; borrow money using it as security; construct buildings on it; farm it; and mine it, subject to local land-use regulations or other local, state, or federal regulations. Each of these rights can be individually severed and marketed, such as the sale or lease of oil or mineral rights.

All of the rights connected to property ownership, including the right to develop land, have their origins in English common law and have been developed in the United States to generally allow property owners reasonable economic use of their land. The meaning of “reasonable economic use” has varied in U.S. Supreme Court decisions but usually includes the right of an individual owner to develop some portion of his land. That right is subject, however, to the police powers of states and municipalities to protect the health, safety, and welfare of citizens. State and municipal powers usually take the form of zoning bylaws or other land-use regulations, which are promulgated to control the amount, rate, pattern, type, and location of growth. Similar to zoning, TDR can serve a number of public purposes that typically fall within the police powers of local or state governments, including the protection of the environment, the promotion of public safety, and the orderly planning and administration of development.

How is Dollar Value Assigned to Development Rights?

Methods for allocating transferable rights have varied considerably from program to program. The total value of development rights for a given parcel is dependent on a number of factors. For the seller (in the sending area), value involves the number of development rights (“credits”) associated with each parcel and the dollar value of each credit. For the buyer (in the receiving area), value involves the amount of increased development that can be gained for each credit bought and the dollar value of each credit. Generally, market forces determine the dollar value, although a TDR program may regulate or support prices to protect one or both parties.

The amount of increased development that can be gained from each credit bought can be measured in a number of ways, based on different factors related to development and its impacts. Generally, the increase in development in the receiving area is based on the qualities and constraints inherent in the underlying (prior) zoning and other land-use regulations, including:

- ***Number of Housing Units*** - The number of buildable lots on the seller's property (based on prior zoning and environmental constraints) are allocated as credits and can be sold to a developer in the receiving area. This most basic approach embodies the TDR concept - shifting potential development from one area to another.
- ***Square Footage*** - Development rights can be assigned based on the maximum developable square footage of a parcel in the sending area. Using square footage as a basis for calculation can facilitate the exchange of development rights between residential, commercial, and industrial development types. This allows developers in receiving areas to use their development rights to construct a mix of development types better suited to market demand.
- ***Sewer/Septic Capacity*** - Development rights can be assigned based on the total sewer or septic capacity that would have been permitted under the prior zoning. These rights can then be transferred to receiving areas. This system of septi-credits could also facilitate the exchange of development rights between different types of development. A septi-credit system has been used on Long Island, New York.
- ***Development Appraisal*** - The number of credits assigned to a given property in the sending area could be based on the appraised development value, minus the residual value. The appraisal would depend on the amount of developable land (e.g., number of buildable lots) and the value of each lot. This approach, while administratively complex, could allow a more equitable assignment of development credits for certain prime real estate targeted for protection, such as scenic views and waterfront property (e.g., riparian lands covered by the Rivers Act).

Whichever method is used, the seller is assigned a certain number of development credits for property in the sending area. The buyer then purchases credits to gain some increase in the density or intensity of use in the receiving area. Note that the basis for assigning and valuing credits does not have to be the same on both sides of the transaction -- credits could be assigned based on the number of buildable lots in the sending area and subsequently purchased to allow for increased sewage flow in the receiving area.

However the system is designed, the dollar value of the credits should ultimately reflect the difference between the developed and undeveloped value of the land in the sending area and should be sufficient to create an incentive for purchasing development rights in the receiving area. The dollar value of development rights will be largely determined by a combination of market demand, zoning ordinances, land-use regulations, and the rules and criteria of the development rights system. In the end, the seller and the buyer, either directly or through an intermediary, must negotiate a price.

What is Involved in Administering TDR?

TDR programs generally operate under one of two models: 1) the community administers the program and sellers and buyers deal with each other directly; or 2) a development credit bank administers the program *and* buys and sells credits. The credit bank can be run by the municipality, the state, or a nonprofit or other entity.

TDR is fairly complex to operate because it requires a large amount of oversight. Even if a credit bank is involved, the local government must still make many administrative decisions, such as defining sending and receiving areas, tracking transfers and development, and defining the process for taxation and other legal issues.

There are several other administrative issues for local governments to address:

- *Taxation of TDR transactions:* Is it allowed and how is it assessed? Which party is taxed?
- *Tax titles:* If a tax title is taken against sending parcels, does the community get to sell the rights? If it is taken against receiving parcels, what happens to the unused rights? At issue here is whether rights are attached to a receiving parcel when they are purchased or whether they are attached to the buyer.
- *Foreclosure on development rights:* Is it possible? How and when does it occur? As above, the answer will depend on how transferred rights are attached.
- *Liens against development rights:* How are they recorded?
- *Cumulative impacts:* Will increasing density in one area while decreasing density in another result in worsened cumulative impact under any state or federal environmental statute?
- *Role of a development credit bank:* As a third party, a credit bank may act as an administrative remedy to legal situations. At what point can or should the credit bank become involved?

Building a Successful TDR Program

Key Elements of TDR

The creation of a successful TDR system usually involves delineating clearly defined sending and receiving zones. Communities interested in starting a TDR program generally have the protection of a particular area or resource in mind, such as water supplies, open space, agricultural lands, critical wildlife habitat, scenic landscapes, or historic features. The community needs to begin by identifying the desired resource as a sending area. This process involves delineating it, mapping it, and recording: a description of the area, the reason for its

designation as a sending area, and possibly its prevailing land value. In addition, the municipality usually will need to establish regulations detailing allowable property uses, such as agriculture or recreation, that remain once the development rights have been transferred.

Receiving areas must be defined as well although this process can be more difficult. Receiving areas must be areas with demand for denser or more intense development than currently allowed. Without this market demand, no incentive exists for developers to purchase development rights from the sending area. The receiving area must be able to physically support the increased development and large enough to handle the cumulative effects of all possible transfers. Another essential element is ensuring that there is a greater supply of available lots for development in the receiving area than there are available development rights in the sending area. A shortage of buildable space in the receiving area will destroy the market for development rights. Many areas may be suitable for designation as receiving zones, including:

- existing downtowns and urban centers where economic revitalization is desired;
- existing developed areas with underutilized infrastructure (e.g., unused parking lots and shopping centers) that can accommodate infill development;
- areas with existing infrastructure (especially sewer lines) that can support high-density development;
- areas around key transportation nodes, such as commuter rail stations or appropriately sited highway exits; and
- brownfield sites.

A successful TDR program must also allow a sufficient increase in density in the receiving area when development rights are purchased. As the market normally determines, a developer in the receiving area is willing to pay a certain amount for each additional unit he can build. If development rights were transferred on a unit-for-unit basis, the dollar value might not be sufficient to motivate the landowner in the sending area to sell his rights. If, however, the developer in the receiving area could build multiple units for each development right purchased, he would be willing to pay considerably more for each right -- ideally enough to adequately compensate the owner in the sending area. Therefore, programs must be designed to provide an appropriate density bonus in the receiving area for each development right purchased.

Montgomery County, Maryland dealt with this problem by allowing property owners in sending areas to build at a density of only one dwelling unit for every 25 acres of land owned, but allowing the same property owners to transfer their rights at the rate of one unit for every five acres owned. The program works because selling the development rights on 25 acres (five rights, resulting in five additional units for the buyer of the rights) is at least as lucrative for the seller as building a single house on a 25-acre estate.

Successful programs often also use a land or credit bank to facilitate the sale of development rights. In this case, the bank purchases rights from the sending area and holds them

for resale to developers. By providing an immediate market for sellers, the credit bank enables permanent protection of sending areas to begin immediately. The bank also facilitates the completion of transfers by establishing a single clearinghouse for interested buyers. Therefore, a dedicated fund of some substantial amount is needed in order to prime a land or credit bank system. Generally, the most successful programs involve the support of an institutional buyer of development rights, such as a governmental agency or nonprofit organization.

Considerations and Challenges

TDR programs can help cities and towns to more effectively protect water supplies, open space, agricultural lands, critical wildlife habitat, and/or historic features. However, there are several considerations or challenges that the state and/or local government must address.

One main challenge is that development in the sending area may be of higher value than development in the receiving area. This disparity can result from a number of factors, including the fact that lands designated as sending areas are often more rural in character or may contain sensitive environmental features attractive to real estate markets, such as waterfront locations. Another factor may be the difference in lot sizes between the sending and receiving areas (a large lot typically offers more development potential than a small lot). This phenomenon may be exacerbated by the creation of the program itself, which sends a market signal to landowners that the sending area has been targeted for open space preservation -- a very attractive feature for home buyers in Massachusetts.

Additionally, the valuation of rights may change if a third party credit bank is formed. Establishing a TDR credit bank has several advantages. It provides an immediate market for sellers and serves an important administrative function by acting as a clearinghouse for interested buyers (in fact, the buyer and the seller may never actually meet). Purchasing a block of development rights up front, however, creates an artificial demand. Over time, the market price of a development right is likely to change and there is no guarantee that there will be enough buyers to ensure a steady demand.

Next, municipalities will need to plan for infrastructure costs associated with receiving areas. These costs may include constructing or upgrading roads, sidewalks, streetlights, sewers or septic systems, and storm drains, among others. Changes resulting from the implementation of a TDR system can also include indirect and non-dollar expenses such as change in the character of an area, travel patterns, and housing prices.

Consideration should also be given to allowing landowners to sell only a portion of their development rights during any given transaction. In fact, partial sales of development rights may have advantages. Partial sales allow landowners in the sending areas greater flexibility. They can reserve some rights for future development (to provide on-site housing for their children, for example) and can time the sale of development rights to take advantage of market conditions. Thus, such an option may make landowners more predisposed to participate. Partial sales may be advantageous for the municipality administering the program as well. The first rights sold on any given parcel will usually be cheaper than the last, allowing the municipality to make better use of credit bank dollars by "buying down" density in sensitive areas. Partial sales would also

allow the bank to target the acquisition of rights on the most environmentally sensitive portions of a site.

Another challenge is that care must be taken to avoid the incidence of sprawl, or decentralized development, in the receiving area. TDR is not an anti-growth program; on the contrary, without demand for growth in the receiving area, a TDR program is likely to be ineffective. When sufficient demand exists, TDR can promote orderly development by channeling growth into areas with adequate public services. However, some existing programs have witnessed TDR credits used for undesirable patterns of development, such as strip malls, rather than the compact, planned development they were designed to promote.

An additional major challenge is that there is often political difficulty in designating receiving areas. Communities may resist allowing density to increase in low-density residential areas because of the fear that density makes the area less attractive. Sending areas may also be difficult to delineate if residents are concerned about losing economic opportunities available to them under prior zoning.

Also consider that an ideal TDR program is a *regional effort*. One reason is that environmental goals, such as habitat and watershed protection, often involve crossing municipal boundaries. Additionally, a regional approach would offer more options for all parties by allowing a wider range of possible transfers across municipal boundaries. Finally and perhaps most importantly, a regional program allows municipalities to share the administrative costs of TDR, which can be burdensome. Unfortunately, however, questions about tax revenue sharing, infrastructure costs, traffic, and other capacity issues may inhibit, at least in the short term, the feasibility of a regional TDR.

In terms of gaining community support for TDR, the challenge is that it will likely require broad educational efforts. The intricacies of TDR systems are difficult to understand and residents of receiving areas are often opposed to any density increase in their neighborhoods. Residents of sending areas are concerned with takings issues and land valuation, especially if they do not understand the conservation goals of the program. Any community starting a TDR program must make the process public and well known from the start and prepare for the fact that public education may be a lengthy, time consuming, and potentially difficult process.

These considerations simply point to the need to design a TDR program thoroughly. Communities facing growth pressures and their associated environmental, fiscal, and social impacts can greatly benefit from a TDR system if it is properly designed. In general, TDR is low risk, and in successful cases, tens of thousands of acres of open space have been saved while the quality of development overall was improved.

Specific Considerations in Massachusetts

As stated earlier, municipal TDR is currently allowed by the Home Rule Amendment, however, no specific state enabling legislation currently exists. For example, there is no statute that explicitly establishes development credits as property rights or that allows municipalities to set up credit banks. The Joint Committee on Natural Resources and Agriculture may want to

consider whether enabling legislation is needed. Such legislation, however, should be approached with caution. Enabling legislation should be carefully designed to avoid limiting the scope of TDR programs and establishing any disincentives to TDR. For example, requiring TDR programs to be administered by special permit as opposed to “as of right” may discourage TDR programs because special permit requirements reportedly act as a significant disincentive for developers.

Another significant challenge is present in Massachusetts law -- vested development rights. State law stipulates that whatever zoning is *in effect at the time a landowner submits a subdivision application* is frozen for a period of eight years.¹ During that time, a landowner has eight years to obtain building permits and begin construction. The effect of this law is to encourage a surge of subdivision applications every time a town proposes to change zoning -- usually immediately after the proposed change is first given public notice. This rush, in turn, has the effect of discouraging municipalities from even attempting to change their zoning for fear that it will spur a wave of new construction. Given the possible need to change zoning in sending areas to lower the allowable density, vested development rights could pose a serious problem for communities.

In this regard, Massachusetts law varies from other parts of the country. New zoning in other states often takes effect retroactively, usually dating back to the time of the first public notice of proposed zoning changes and thereby preventing a land rush. Also, development rights are rarely vested at the time of submission of the subdivision application, but rather at the time of subdivision approval or even when building permits are approved. Finally, development rights are usually vested for a much shorter period of time -- often two years or less -- so that only those developers with legitimate and timely development plans are grandfathered under the pre-existing zoning. By comparison, the eight-year grandfathering period under Massachusetts’ zoning law discourages zoning changes and limits the ability of communities to guide growth in an orderly manner.

Another consideration is the reduction of allowable density in sending areas. Case law in Massachusetts has upheld one dwelling unit per one acre, however, once zoning goes over one acre (e.g., one unit per three acres), the courts look closely at the valid zoning purpose. In those cases where very low density zoning has been upheld, the courts have found that acceptable reasons include unique resource protection measures, such as may be intended in TDR and the Rivers Act.² Therefore, although TDR may be an acceptable impetus for low density zoning, communities will need to be prepared to defend any zoning changes.

The need to offer a density bonus in the receiving area also poses a challenge to TDR in Massachusetts. For towns facing problems associated with growth pressures, such as traffic, overcrowded classrooms, or water shortages, increasing development levels may not be a viable option. Additionally, an increase in the number of units might conflict with river protection goals -- for example, in watersheds facing water shortages -- where TDR should be used to *shift* rather than *increase* the overall level of development.

¹ Massachusetts General Laws Chapter 40A, Section 6

² Johnson v. Edgartown, 425 Mass. 117 (1997)

Recommendations for State Actions to Promote TDR

Clearly, TDR can be an effective tool for protecting open space and environmental resources and for concentrating growth in suitable areas where infrastructure already exists. TDR could also be applied to Riverfront Areas and other areas important to river protection. A more extensive study of the actual mechanics and financing of a TDR system would benefit municipal, regional, and state consideration of TDR as a planning tool both within and outside of the Riverfront Area.

Therefore, DHCD and EOEA make the following recommendations to the legislature and state agencies:

1) The state should continue to support the efforts of towns and regions to establish TDR programs. Several proposals are already underway in Massachusetts to implement TDR. EOEA and DHCD have already played a role in supporting development of these efforts. Additional support should include:

- technical assistance and planning-related grant funding, as appropriate, from EOEA, DHCD, and other agencies;
- consistent with the Massachusetts Watershed Initiative, identification of watersheds in which TDR has the potential to significantly enhance watershed protection, especially in watersheds where low streamflow and water shortages are key issues;
- consistent with Executive Order 385, prioritization of state infrastructure funding for towns that are implementing TDR to promote compact development patterns;
- consistent with Executive Order 385, streamlined state permitting and MEPA review (e.g., area-wide review) for development projects in designated receiving areas.

2) The legislature, in cooperation with state agencies, should consider commissioning a study to examine the role of the state in supporting municipal or intermunicipal efforts to use TDR, including the establishment and financing of a TDR credit bank. The state could take a number of actions to support local and regional efforts for TDR, and they need to be explored in more detail. In particular, the establishment and financing of a development credit bank is appropriate because individual municipalities may be hard pressed to do so with their own resources. The study should include:

- examination of the role of state government in other states;
- analysis of the application of the Environmental Joint Powers Agreement as a means of establishing intermunicipal revenue sharing arrangements and other mechanisms needed to support a TDR program;

- analysis of possible funding mechanisms for a credit bank and identification of the appropriate managing agency;
- provision of answers and/or options to address the administrative questions posed on page 9 of this report as well as examination of how a regional TDR system can be established to address administration.

3) The legislature should consider examining and changing existing enabling legislation to make it easier for municipalities to implement effective TDR programs. While TDR programs can be established under existing local zoning powers, barriers still exist in state enabling legislation that may limit successful implementation of TDR programs. Such changes could include:

- revising zoning laws to reduce the period during which prior zoning is frozen and to address excessive grandfathering of zoning on lands proposed for such changes;
- revising zoning laws to give towns specific legal authority to reduce the allowable density of rural lands for the purposes of TDR or promulgate other legally defensible land-use regulations currently employed in other states as a means of establishing a TDR program;
- creating enabling legislation for TDR that would, among other things, establish development credits as legitimate property rights.

Existing TDR Efforts

Massachusetts

In Massachusetts, municipal TDR programs are allowed pursuant to the Home Rule Amendment to the Massachusetts Constitution. TDR has not been used extensively, however, nor has it had a significant impact when it has been used. Currently, there are at least fourteen municipalities with some form of TDR regulations. For the most part, these regulations are very simple and were initiated for a particular project. Most are implemented at the discretion of local boards through the special permit process. Several programs have met with qualified success though very few actual transfers of development rights have occurred. Appendix 1 contains a list of the municipalities and a brief description of their programs.

TDR in Groton

Groton has developed a TDR program in which development transferred from lands targeted for protection can be used to increase density by 20% within clustered subdivisions. In addition, Groton's TDR bylaw has been designed to work in concert with the Town's Development Rate Limitation Bylaw. Utilizing TDR credits, a developer can also increase the amount of development permitted under the building cap in any given year. For example, by utilizing TDR credits developers can increase from 12 to 18 the number of units that can be constructed annually within a subdivision at a rate of two additional units per transferred credit. Groton has no designated sending or receiving zones associated with its TDR program. Rather, the Town Planning Board must determine by grant of a special permit that the parcel to be restricted has special importance in its natural state. Groton's TDR bylaw, adopted in 1980, initially included only the density bonus provision, but the bylaw was seldom used. In 1989 a provision was added that tied TDR to rate bonuses under the Development Rate Limitation Bylaw. Groton's program is now quite active and has protected 500 acres of land.

Other States

New Jersey, New York, and Connecticut have passed enabling legislation to allow local TDR programs. TDR programs have been used for a range of purposes, including aquifer protection, open space, agricultural preservation, and even historical preservation. In New York City, for example, the unused air rights above Grand Central Station were transferred to a property elsewhere in the city. This action removed the economic incentive to tear down the station and build a taller building on the site, while granting the owner a density bonus to sell or develop in the receiving area.

Nationwide, the two best known TDR programs are the New Jersey Pinelands and the Long Island Pine Barrens. The programs differ in their origins -- New Jersey has a top-down program initiated and implemented by the Governor, whereas the Long Island program grew out of an effort by county authorities, local developers, and environmentalists to end excessive development and lawsuits. Both programs were designed to preserve a unique environmental

resource, namely the states' remaining large tracts of pine forests. Brief descriptions of these and additional programs can be found in Appendix 2.

Montgomery County, Maryland

Agricultural TDRs remove development rights from land while still allowing it to be farmed. This preserves farmland that may have been otherwise lost or fragmented by residential or other development, and sends that development to more suitable receiving areas. An excellent example of this is in Montgomery County, Maryland, which by 1997 had protected more than 38,000 acres in its Agricultural Reserve sending area by transferring the rights to build 6,000 houses. At first, the system was voluntary, with underlying zoning in the sending area held at one dwelling unit per five acres. Montgomery County found, however, that there was an insufficient incentive for property owners to sell their development rights. Because of the premium on five-acre lots, building at the underlying density was more profitable than selling rights therefore resulting in a continuation of large-lot sprawl. The county then changed its approach by reducing the allowable density of the sending area to allow no more than one dwelling unit per 25 acres. If owners decided, however, to sell their development rights, they could transfer those rights at the density allowed under the prior zoning -- a rate of one unit, or credit, per five acres. This approach prevented sprawl-type residential development in the sending area while allowing property owners to recover most of the property value that they would have been entitled to under the prior zoning. As a result, property owners had a strong incentive to participate in the TDR system.

Appendix 1: Massachusetts Municipalities with TDR Bylaws

The following is a list of known TDR bylaws or programs in Massachusetts. This list may not be all-inclusive because some places such as Nantucket were in the process of developing TDR bylaws at the time of writing.

Acton: A bylaw targets desirable floor area ratios in sending and receiving areas.

Bedford: One paragraph in the municipality's bylaws describes a density bonus available in planned unit developments (PUDs) using a TDR ratio. Currently, the provision is very minimal, with no defined sending or receiving areas.

Boston: The calculation of total build-out within Planned Development Areas (PDA) is determined without reference to individual lots, thus allowing de-facto TDR type transfers.

Cambridge: Development right transfers are allowed within a defined special area and may involve the transfer of all or only a portion of allowed gross floor area. Thus, this provision allows density to be lowered on the sending parcel without removing all development rights.

Concord: An expanded version of Bedford's system, Concord's bylaws include the percentage of allowable units from the sending area that could be transferred to the receiving area. These percentages range from only 10-60% of the allowable units on the sending parcel, with permanent restrictions on development or conveyance of the entire fee interest to an unspecified party. Unless the parcel is otherwise undevelopable, or the owner particularly philanthropic, no incentive to transfer development rights is created. The sum of units developed on the sending and receiving parcels would *decrease* from what could regularly be built on each.

Groton: Groton has developed a TDR program in which development transferred from lands targeted for protection can be used to increase density by 20% within clustered subdivisions or to increase the amount of development permitted annually under the provisions of Groton's Development Rate Limitation Bylaw. Groton's program has protected 400 acres of land to date.

Falmouth: Although this is one of the more comprehensive regulations in Massachusetts, this TDR program lacks in details related to the receiving area.

Mashpee: This TDR system uses a formula weighted for desirability of land protection, but requires that transfers occur only within an Open Space Incentive Development.

Northbridge: One paragraph in the municipality's bylaws describes a density bonus available in planned unit developments (PUDs) using a TDR ratio. Currently, the provision is very minimal, with no defined sending or receiving areas.

Northampton: Similar to Falmouth in comprehensiveness, this program does not address the density or specify the location of the receiving area.

Southborough: This program is called “off site preservation of critical areas.” It protects critical lots through a conservation easement or deed to the town in return for a housing unit increase in the receiving area equal to what could have been built in the critical area. Double transfer units are given in exchange for restrictions in designated Critical Resource Areas.

Sterling: Not purely TDR, but theoretically similar, this program allows developers to average the density of two building lots in order to allow higher density development on one and lower density development on the other. The combined density of both does not exceed the typical performance standard for two lots. Averaging is permitted between lots under the same ownership or under different ownership within the district. Individual owners are responsible for establishing a price for this transfer of performance rights.

Sunderland: Called the “agricultural and watershed protection incentive,” This provision allows “development unit credits” (DUCs) to be transferred from any parcel in the Prime Agricultural District or Watershed District to an approved district. The parcel on the receiving end may not increase allowed density by more than a factor of two.

Townsend: With a well developed TDR program, Townsend is the only town with a regulation that specifies what sending lots (or donor lots) may be used for after development rights have been transferred.

Williamstown: Williamstown has a framework for agricultural conservation easements in return for unit increases in residential developments.

Appendix 2: Sample TDR Programs Nationwide

New Jersey: The million acre New Jersey pinelands comprise about a quarter of the state. They are ecologically significant, containing bogs, marshes and forest. Congress created the New Jersey Pinelands National Reserve in concert with the State of New Jersey, which subsequently developed a management plan to protect, preserve and enhance the area. Eight areas of land use were identified with mandatory and optional land uses designated for each. The Pinelands Commission proposed a TDR program to mitigate the effects of the management plan on property values and created the Pinelands Development Credit Bank to ensure a market for sellers. To date, over 4,000 development credits have been allocated and 13,000 acres have been protected through this program.

New York: The Long Island Pine Barrens program allocates credits to landowners based on prior zoning. Southampton, Brookhaven, and Riverhead, the three municipalities that participate in the program, each had an individual interest in preserving the forests they shared. Although transfers only occur within and not between the municipalities, they are still handled by a Pine Barrens Credit Clearinghouse. TDR credits may be used for residential or non-residential density increases in each town's designated receiving area. In practice, these credits have been priced as high as \$15,000 per credit.

California: The California Coastal Conservancy administers a TDR program in the Santa Monica Mountains that bases TDR credits on the developability of a parcel rather than a strict numerical allocation. Credits have sold for as high as \$43,000; most go in the mid-\$30,000s.

Montana: The ranching community of Springhill in Gallatin County runs a town-wide TDR program designed to preserve its rural character but has no designated transfer and receiving area. The town zoned for one house per 160-acre parcel and allowed landowners to sell their development rights. When an owner purchases an additional right, construction is limited to 15 percent of the receiving parcel, and the remaining 85 percent is placed in permanent easement.

Washington: Olympia has an interesting program that allows TDR to lower density to four units per acre on parcels zoned 5-7 units. This is in an area where large homes on quarter-acre lots are desirable.