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Markets for Preserving Farmland in Maryland

Making TDR Programs Work Better

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Markets for Preserving Farmland in Maryland: Making TDR Programs Work Better

Virginia McConnell and Margaret Walls[1]

Executive Summary

I. Introduction

A total of 12 counties in Maryland have Transferable Development Rights (TDR) programs to preserve farmland and open space. In this study, we examine seven of these programs that represent a range of programs types and outcomes. Our primary focus is on the economic aspects of TDR programs—is the market working so that transactions are occurring and land is being preserved and density transferred. We present background information on housing and agricultural markets, population growth, and zoning regulations in each county, as these factors are important in explaining the success or failure of the programs. We examine the factors that affect both supply and demand in the markets and assess whether the goals of the programs are being met. When data is available, we examine TDR transactions, zoning regulations, subdivision activity, and TDR price trends. Based on evidence from our detailed review, we identify when TDR programs are most likely to be successful—under what market conditions and with what program design features—and draw lessons for jurisdictions considering either new or improved programs.

The Maryland programs have seen varying degrees of success. We define a successful program as one that preserves farm, forest, and open-space areas, depending on goals of the program. Montgomery and Calvert Counties have been quite successful, preserving substantial amounts of farmland and open space in the regions they have identified for protection, while St. Mary's and Charles Counties have preserved very little land. We focus most of our analysis in this report on these four programs. We also extend the analysis to include other programs that offer unique features or insights. We analyze the Talbot County TDR program, which has not been active at all, and review

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the density-transfer programs in Howard and Queen Anne's Counties, which have similarities to TDR programs but some important differences as well.

The two success stories—Montgomery and Calvert Counties—have different program designs, but both programs have preserved large areas of land. Montgomery County succeeded because of the strong demand for development in the area and the sharp down-zoning of sending lands. Calvert County succeeded because it allowed TDRs to be used in rural areas, where demand was strong, and it streamlined the program to reduce the transaction and administrative costs of buying and selling TDRs. The programs that have not worked as well—those programs with few TDRs sold and very little acreage preserved—have not succeeded for a variety of reasons. These reasons are:

- limited demand for TDRs due to sufficient density in housing markets under current baseline zoning rules;
- existing residents' ability to block the use of TDRs for higher density;
- other ways for developers to get extra density without the purchase of TDRs;
- prices of TDRs too low to induce farmers to enter farms into the TDR program, particularly in comparison with other farm-preservation options; and
- extra rules and administrative hurdles associated with using TDRs.

II. Montgomery County

Montgomery County has combined its strong suburban housing market with the down-zoning of a large area of farmland in the western part of the county to create an active TDR program that has transferred development and preserved a substantial number of acres of farmland. The program, which began in 1980, has achieved the following outcomes:

- Out of a total of more than 75,000 acres of land in active farming in the county, approximately 61,000 acres have been preserved from development as of mid-2004; 74 percent of this acreage has been protected through the sale of TDRs.
- Preserving these acres through a Purchase of Development Rights (PDR) program, rather than the fully private TDR program, would have cost the county approximately $63 million (with TDRs valued at an average of $7,000 a piece).

- Most of the TDRs were created and sold in the 1980s; there has been much less activity in the TDR market since that time. This appears to be primarily because most of the development in the county took place in the 1980s.

Despite the combination of down-zoning and strong development pressures, we identify some weaknesses in the design and implementation of the Montgomery County TDR program. These problems have led to a TDR market characterized by relatively high transaction and administrative costs. Moreover, TDR prices and sales have fluctuated widely over time, creating confusion and uncertain expectations on the part of both landowners and developers. In addition, not all of the outcomes on the development side have been what was originally intended with the program.

One problem with the Montgomery County program is that individual Planning Areas take responsibility for designating TDR receiving areas and do so gradually. Because of problems with existing residents and developers unwilling to build to higher densities in many areas, many Planning Areas have designated very few zoning districts as receiving areas, and the ones they have designated have tended to be relatively low-density zones; some Planning Areas have not designated any receiving areas at all.

The program also has established an extra layer of rules and requirements that add to developers' costs and uncertainty when using TDRs. First, the county requires that developers use at least two-thirds of the maximum allowed number of TDRs on a project unless they appeal to the Planning Board. Second, TDR use is not "by right" in Montgomery County; thus, developers' plans are subject to review and hearings.

Both because Planning Areas have designated small and low-density receiving areas and because developers do not use as many TDRs as they are allowed, the demand for TDRs has been much lower than originally envisioned by the county. We provide some quantitative evidence of the problem of low demand for additional TDR density.

Another problem that has arisen in the program is the so-called "super TDR," or "fifth TDR." Most landowners in the agricultural sending area, though they may have sold some TDRs, have retained enough development rights to build to the baseline density limits of 1 dwelling unit per 25 acres. To sell these remaining rights, they require very high prices because the rights have become extremely valuable as property values have risen. The county is concerned that the land may not remain in agricultural use if these rights are not sold and currently is considering ways to buy them.

III. Calvert County

Like the Montgomery County program, the Calvert County TDR program has been quite successful at preserving farmland, but the two programs have important differences. Calvert County did not initially down-zone any of the sending areas when the program was started in 1978. The county also designated receiving areas early on in the program rather than over time. Moreover, Calvert County established receiving areas in rural zoning districts as well as in residential areas and town centers. Land in one rural zone, the Rural Community District (RCD), is allowed to either send or receive land. In general, the Calvert County program has much more flexibility than most TDR programs.

Another important difference between the Montgomery County and Calvert County programs is that in Calvert County, the entire property is under a conservation easement once the first TDR is sold from a property. So while the county did not down-zone, as did Montgomery, this feature of its program has led to substantial preserved acreage. In addition, it has circumvented the problem of a "super TDR."

We reach the following conclusions about the performance of the Calvert program:

- Over 51 percent, or 12,000 acres, out of a total of approximately 23,500 acres of preserved farm and forest lands in the county have been protected through the sale of TDRs.
- TDR prices have been relatively stable, rising slightly over time, and sales have been relatively stable over time as well.
- Most TDR use prior to a county-wide down-zoning in 1999 was in the RCD; there was very little demand in Residential and Town Center zoning districts.
- The designation of receiving areas early in the program and the fact that TDR use is more-or-less "by right" has greatly reduced uncertainty for both landowners and developers in the county.
- The county's PDR program complements its TDR program. We find that since 1993, when the PDR program began, TDR prices have been very stable (i.e., the variance in individual sales prices is quite low). This low variance helps to create a predictable environment for developers and farmers; the county's publishing of a quarterly newsletter including price information contributes to this predictability.

While the rural-to-rural transfers allowed in Calvert County have been criticized by some observers, we conclude that this feature of the program has led to its success in preserving significant farmland acreage. Furthermore, while it is difficult to establish the

counterfactual—what land-use patterns would have been without the TDR program or with a program that limited receiving areas to Residential and Town Center zones—evidence suggests that development would have occurred in the rural areas in Calvert County even without TDRs, and a program that restricted TDR use to Residential and Town Center zones would have failed to preserve land.

Comprehensive down-zonings were adopted in 1999 and again in 2003. As part of the down-zonings, the county allowed TDRs to be used in certain areas to attain the prior level of density in those areas. These actions have yielded some interesting results for the TDR program. Development has shifted somewhat to residential areas and areas within one mile of Town Centers, where the density bonus for using TDRs is quite generous. Also, a greater percentage of new subdivisions have used TDRs since 1999. And the down-zonings have reduced development in the prime agricultural areas.

IV. Charles and St. Mary's Counties

The TDR programs in Charles and St. Mary's Counties have not succeeded in preserving significant amounts of farmland.

The Charles County program, adopted in 1992, allows TDRs to be sold from rural areas and used to increase density in the Development District in the northern part of the county closer to Washington, DC. Only about 2,000 acres have been preserved through the sale of TDRs in Charles County, although 37,551 acres of land have been preserved in total through all county, state, and private land-preservation programs. We conclude that the lack of activity in the TDR program can be attributed to two factors. First, landowners are required to certify their property through the Maryland Agricultural Land Preservation Fund (MALPF) in order to sell TDRs. This requirement imposes a significant administrative burden on landowners. Farmers who have gone to the trouble of certifying their property have been more likely to simply sell the easement through the MALPF, which tends to offer higher prices than the TDR program. Second, baseline zoning limits in the Development District appear to be acceptable to developers and homebuyers. Without a demand for additional density, there is little demand for TDRs. The few subdivisions that have used TDRs have been built in the lowest density areas of the growth areas (less than three houses to the acre), and they have used about half of the possible number of additional units they could have used. Some new approaches to down-zoning in some areas and allowing density to be bought back are being considered in Charles County.

The St. Mary's County program began in 1990. Like Calvert County, St. Mary's County allows rural-to-rural transfers of development rights. Owners of properties in the Rural Preservation District, the sole rural zoning district in the county, are permitted to sell development rights or purchase rights to develop their properties more densely than baseline zoning allows. Receiving areas also are designated in the Growth Areas of the county. Only about 1,000 acres of land have been preserved through the sale of TDRs in St. Mary's County, and almost all of these sales have taken place since 2002. Prior to 2002, developers could attain density increases beyond baseline through a variety of measures other than TDRs. Those measures were removed in a comprehensive rezoning. The county currently is studying some significant changes to its TDR program that are likely to increase activity in the program and preserve more agricultural land.

V. Talbot, Queen Anne's, and Howard Counties

The final three counties we analyze are Talbot, Queen Anne's, and Howard Counties. We look at these counties because they have density-transfer programs, either in addition to or instead of TDRs, and because they provide additional geographic perspectives. Density-transfer programs are very similar to TDRs but they tend to be exclusively rural-to-rural transfer programs, and they require joint submission to the county of plans for the sending and receiving parcels. Talbot and Queen Anne's Counties are on the Eastern Shore of Maryland, more removed from development pressures than the other counties in our study, while Howard is a highly urbanized county in the Baltimore–Washington corridor.

Of the three, only Queen Anne's County has had significant amounts of land preserved—approximately 10,000 acres—through its TDR and density-transfer programs. Results in Queen Anne's County provide important lessons. Its TDR program was adopted in 1987 and began with receiving areas designated in rural as well as residential zones. In 1994, a zoning change removed the rural receiving areas. After that time, TDR sales dropped to virtually zero. By contrast, the county's density-transfer program, called the Noncontiguous Development (NCD) option, took off—more than 5,000 acres were protected through NCDs between 1995 and 2005, with approximately 1,600 acres pending approval. In general, density is being transferred from the northeastern part of Queen Anne's County to areas near the Chesapeake Bay Bridge, which has a strong demand for development.

Talbot County's TDR program began in 1989 and has preserved only 790 acres of land. We conclude that the lack of activity in Talbot County can be attributed to: 1) a lack of development pressures, as the county is located rather far from metropolitan areas; 2) accommodation of additional building in the municipalities that do not want to require that land be preserved in the county as a condition of development; and 3) density limits allowed via clustering in the rural areas—without TDRs—that are close to the limit imposed by septic system restrictions in the county.

Howard County's density-transfer program began in the early 1990s. Until recently, it had protected very little acreage due to the fact that the county has emphasized its PDR program for protecting agricultural lands; thus, most farmers turned to that option. Moreover, very little agricultural land remains for protection in the county, which is nearing build-out.

VI. Overall Findings and Recommendations

TDRs have much to recommend but in many cases do not seem to live up to expectations. We conclude that as a land-policy tool, even the best-designed programs have certain advantages and disadvantages. Their advantages include:

- The ability to preserve land without expenditures of tax dollars.
- More flexibility to landowners than under strict zoning or other mandates.
- The potential to compensate landowners for down-zoning or other restrictions on their land.
- The ability to accommodate growth and still preserve land from development.

Even well-functioning TDR programs have some disadvantages. These are:

- There may be uncertain outcomes. Because TDR programs are inherently voluntary programs, one cannot be sure which parcels will be preserved and how many acres will be preserved. This is true, however, for most land-preservation programs to varying degrees—Purchase of Development Rights (PDR) programs also are voluntary in the sense that they cannot ensure the preservation of certain farms; however, they are better able to target particular properties than are TDR programs.
- Some parcels may be preserved that would have stayed in agriculture, leading to more development than there otherwise would have been; development that was not economical before may become economical with additional density allowed with TDRs in receiving areas.
- TDR programs can be complicated to design and implement.

The biggest disappointment with TDR programs is that they are not working to preserve land and transfer density as well as many jurisdictions would like. Our research suggests some important factors that may account for this. First, TDRs appear to work better where there are strong development pressures and, thus, demand for additional building. Second, in all the programs that we analyzed, it has been difficult to force additional density into high-density residential areas. Despite the desire of many planners and smart-growth advocates to get higher density development into town centers and other areas with infrastructure, the reality is that no TDR program consistently has been able to do this. Third, there must be general agreement about the land-preservation goals of the community. Outreach to the public about the goals of the TDR program and getting consensus on the importance of land preservation in some areas and higher density in others is key.

The first step to having a successful TDR program is ensuring an active market in development rights. This is where most TDR programs have failed. An active market is more likely if the following conditions are met:

- receiving areas need to be designated in areas with demand for density above the baseline zoning;
- because receiving areas determine demand for TDRs, they need to be established either at the outset of the program or in such a way that market sales and prices remain stable;
- allowed density under TDRs should be "by right" once receiving areas are designated and not negotiated with planning boards and the public;
- local government needs to recognize and carry out its role in making the market work; this means it:
    - may need to participate in the market by buying some rights each year (combine PDR with TDR) to provide some price stability and provide information to the private marketplace;
    - should find other ways of providing information both to farmers and developers and act as a clearinghouse for information; and
    - should collect and analyze data from the program to continually evaluate and improve it.

It is important that local policymakers understand that TDRs are a market-based mechanism and, as such, the program needs to be designed to achieve the goals of a well-functioning and efficient market. This means that the TDR market should have a very low variance in prices across transactions for a given time period and that TDR prices should rise over time at something close to the rate of interest. Planners also

should be aware of the potential problems from down-zoning sending lands and allowing retention of the right to develop at the reduced baseline zoning—this can lead to a dual TDR market, as in Montgomery County.

Existing residents and their desire to block higher density development can be a serious impediment to a working TDR program. TDR use "by right" and designating receiving areas at the outset of the program may help to overcome this problem. Other ways include combining additional TDR density with some benefit to existing residents, such as infrastructure development or lower taxes in the high-density area. Another approach that is getting some attention is the creation of "greenfield" sites away from existing urbanized areas that include allowances for density with the use of TDRs in the initial planning. The idea is to preserve the land in a large area and pool the development rights of that area all in one town.[2]

Some communities are considering the down-zoning of receiving areas to generate TDR demand. We want to point out that this option may backfire as it makes building more expensive in the down-zoned areas. An alternative is to down-zone everywhere but allow developers to buy back density only in certain areas. This has worked well in Calvert County. Even with this option, however, it is essential that communities understand that they may be making housing more expensive and also pushing development to more distant locations.

[2] This approach is now being used in some parts of New Jersey, see http://www.state.nj.us/dca/osg/resources/tdr/index.shtml.

Chapter 1: Introduction and TDR Primer

I. Introduction

Maryland is known throughout the country as having one of the most aggressive programs of open-space and farmland preservation in the United States. Several state programs were introduced from the 1970s through the 1990s, including the Maryland Environmental Trust, the Maryland Agricultural Land Preservation Fund (MALPF), Program Open Space, and Rural Legacy. All these programs use state funds to protect natural lands and farmland from development. In addition to state efforts, counties in Maryland also are at the forefront of land preservation. Many counties have their own programs to purchase both land and development rights as part of their efforts to slow the pace of growth and to permanently put certain lands off limit to future development.

Maryland counties also lead the way in Transferable Development Rights (TDR) programs. TDRs rely on the private market to preserve land and redirect development. In a TDR program, certain landowners are permitted to sell development rights from their properties, greatly restricting future development on their land; the development rights are used on other properties to develop them more densely than allowed by baseline zoning. A total of 11 counties in Maryland currently have programs in operation, one county recently has passed an ordinance that will take effect in January 2007, and several more counties currently are studying TDRs for possible adoption.

TDRs have some features that make them appealing from the view of local policymakers. For one thing, they preserve land without expenditures of public dollars. For another, they provide compensation to landowners who may have their land restricted by low-density zoning regulations or other limitations. And by redirecting development rather than simply limiting it, TDRs may be able to preserve land without reducing economic growth. In so doing, they also may be able to achieve the goals of "smart growth" advocates—denser, more compact development, together with more land preservation.

On the other hand, outcomes with TDRs may be more uncertain than outcomes with strict zoning regulations or a purchase of development rights program. TDRs rely on the private marketplace to redirect development and preserve land; thus, outcomes depend on the actions taken by landowners and developers in response to the incentives

provided in the program and local economic conditions. Just because areas are designated as "receiving areas" for TDRs—areas targeted for higher density development—does not mean that additional development will be attracted to those areas. And particular properties that for one reason or another the local community might like to see preserved from development may not necessarily be preserved with TDRs. Strict zoning regulations or PDR programs cannot guarantee that certain properties are protected either, but they make it easier to target such properties or areas.

Many TDR programs in Maryland and elsewhere have fallen short of their goals; few development rights are sold and not much land is preserved. On the other hand, two of the biggest TDR success stories are in Maryland: Montgomery County and Calvert County have very active programs with numerous sales each year and a substantial amount of preserved acreage.

In this study, we describe these two programs and several others in the state, highlighting the details of their design and implementation and the outcomes they have achieved. We also evaluate TDR programs in general and make several recommendations based on our research on what factors lead to a thriving and active TDR program that achieves local land-preservation goals.

Our analysis of the Maryland TDR programs primarily is from an economic perspective. We take the local jurisdictions' goals for land preservation as given and examine how well the TDR is working to achieve those goals. We focus on how well the TDR market is functioning or could function not for its own sake but because only a well-functioning market can effectively transfer development and preserve land for the intended uses. We attempt to evaluate the programs that have been in operation on the basis of evidence about how they have worked and if they have had the outcomes that were expected. Such evidence often can provide the basis for the best recommendations about future program design and implementation. Finally, in evaluating the effects of a TDR policy on land uses such as farmland preservation, it is important to compare the outcomes under that policy to what would have occurred under alternative policies, including an improved TDR policy, a PDR policy, or no land preservation program at all. In this study, we cannot look at all of the possible alternatives, but we provide some insights on this issue. As local jurisdictions evaluate the possible use of TDRs, a comparison against alternatives will be essential.

In the next section, we provide a brief primer on TDRs and various design features that are critical to the outcomes achieved with the programs. Chapters 2

through 6 then provide detailed discussions of the programs in the counties that we analyze. We focus our attention on Montgomery, Calvert, St. Mary's, and Charles Counties and also briefly discuss the density-transfer programs in Talbot, Queen Anne's and Howard Counties.[3] Chapter 7 provides conclusions from our research and recommendations for counties in Maryland and elsewhere that may be considering the adoption of TDRs.

II. A Brief TDR Primer

As described above, TDRs rely on the private market to preserve land from development. Certain landowners in a jurisdiction are permitted to sever ownership of the rights to develop their properties from ownership of the properties and sell those development rights to others. The purchasers of the development rights usually are developers who then build on another parcel of land more intensively than allowed by baseline zoning regulations. Overall, there may be roughly the same number of dwelling units built, but fewer acres are developed when there is a TDR program.

Designating sending and receiving areas. The first decision a county makes when setting up its TDR program is which landowners are allowed to sell development rights—that is, which areas are targeted for preservation and are thus considered to be TDR "sending areas." Some counties do this based on geographic location, some based on soil or other characteristics of the properties, and some based on zoning category. Some target very specifically which properties are sending areas and some use a more broad designation. Similarly, "receiving areas"—areas where TDRs may be used to develop the land more intensively than the baseline zoning permits—can be specified based on zoning category; geographic location, such as near or in established towns, access to infrastructure such as sewer or water; or other criteria. Some counties broadly designate receiving areas, while others use a more narrow definition.

It is typical for sending and receiving areas to be distinct and separate; however, some counties have an overlap in some of their sending and receiving areas. In Calvert County, for example, landowners in a rural zoning category termed the Rural Community District are permitted to either sell development rights and preserve their land or have TDRs used on their properties to develop them beyond baseline zoning. A

[3] Queen Anne's County has a traditional TDR program as well as a density-transfer program; we discuss both in Chapter 6.

similar situation exists in St. Mary's County. No matter how the areas are designated, it is essential that there be a demand for additional density in the designated receiving areas or the TDR market is likely to be inactive.

Baseline Zoning. Once the areas have been designated, the county needs to decide what the baseline zoning will be. In some programs, sending areas are down-zoned from current zoning levels—that is, the maximum number of dwelling units that can be built per acre is reduced. In these cases, TDRs often are seen as partial compensation for the down-zoning. Reducing allowable density generally lowers property values; letting landowners sell TDRs helps to compensate for that lost value. Not all jurisdictions see the need to down-zone, however, and many find that there is a lack of political will to do so. Nonetheless, the baseline zoning in the sending area is a critical determinant of the supply of TDRs and, thus, the performance of the program.

The baseline zoning in the receiving areas is equally important. If the baseline zoning is not seen as too restrictive—that is, the number of dwelling units permitted per acre is not far from what the market demands—there may be little demand for TDRs. It is essential that county planners have a good understanding of their housing market before setting up a TDR program and look at whether the baseline zoning in receiving areas appears to be adequate.

Some jurisdictions have decided to down-zone receiving areas to provide incentives to developers to buy TDRs. Although this works in some cases, it can backfire. Developers compare the value of the additional density beyond baseline to the extra cost they must pay for TDRs; if the additional density is not worth it, they will not buy TDRs. The county may end up with lower density in the receiving areas than they had without the TDR program and no land preserved. Also, even when the down-zoning does work to increase TDR demand (and some land is preserved), it does not mean that density in the receiving areas has increased beyond what it was in the absence of the program. County officials need to decide what the program goals are. If spurring intensive development in town centers and other established areas is a goal, they may want to be careful about down-zoning those areas for the purpose of making TDRs work.

Finally, if receiving areas are down-zoned, the relative prices of developing in different areas are changed and the result could be even more development in rural areas. Calvert County has tried the alternative of comprehensively down-zoning the entire county and permitting with TDRs buy-back to the original densities in particular,

targeted receiving areas. We discuss this feature of the Calvert County program in Chapter 3.

TDR allocation rate. Once the sending and receiving areas are established and the baseline zoning set, the county must set several other TDR program parameters. One is the TDR allocation rate, which is the number of TDRs a landowner in a sending area is permitted to sell. The number usually is specified as a fraction of the acreage of the property, though sometimes there are special rules for very small properties. An important question is what the TDR allocation rate is vis-à-vis the baseline zoning. In some programs, property owners may be allocated a greater number of development rights to sell per acre of land than the number of dwelling units they are allowed to build per acre as an incentive to sell the rights and preserve the land. In the Montgomery County program, for example, landowners in the sending area are allocated 1 TDR per 5 acres of land but can only build 1 dwelling unit per 25 acres. The ratio of the TDR allocation rate to the baseline zoning is often referred to as the TDR transfer ratio (see Pruetz 1997).

Density bonus. In setting up its TDR program, a county must decide how many additional dwelling units per acre it will allow a developer to build in receiving areas with TDRs. This extra density above that set by baseline zoning is called the "density bonus." In areas where building is constrained by the density limits set in baseline zoning, a higher density bonus can spur demand for TDRs. However, it is important to understand that the underlying fundamentals of the housing market are the main driver to TDR use. Sometimes increasing the density bonus does nothing to spur TDR demand if there is little demand for additional density in the receiving areas.

TDRs required per unit. In addition to the density bonus, the county needs to decide how many TDRs are required per unit of density bonus. Most programs simply require one TDR for each additional unit; that is the developer must have one TDR for each additional house he builds beyond baseline density. However, some programs require more than one TDR. The Calvert County program, for example, requires five TDRs per unit. This requirement generally does not affect how well the program works, but it is essential for understanding program outcomes and for comparing results with TDR programs in other jurisdictions. For example, one cannot directly compare TDR prices in a county that requires one TDR per unit versus a county that requires five TDRs per unit (Montgomery County falls in the first category and Calvert County in the second). Equilibrium TDR prices depend on supply and demand for TDRs, which

depend, in turn, on various program parameters, including the TDR requirement per additional dwelling unit.

Other factors that determine program outcomes. The above list includes the main program design parameters, but there are several other aspects of the programs that are also important for determining outcomes. First, a key question is whether TDR use up to some established zoning limit is "by right" or if additional hearings and approvals are required for individual development projects. The issue here is how long the process takes, the costs involved, and the uncertainty associated with the outcomes; all of these things can affect TDR demand. Pruetz (2003) discusses this as a decision about whether the receiving site project should be reviewed by a discretionary or administrative process.

In a discretionary process, a community's planning commission and governing body hold public hearings on individual projects; they then use their discretion to approve or reject each project. While this gives community officials a great deal of latitude in deciding upon land uses, it can lead to a lengthy administrative process. Perhaps more important, the uncertainty in the outcome is likely to make developers reluctant to use TDRs. In an administrative process, receiving areas basically have two zoning distinctions: one without TDRs and one with TDRs. Any project using TDRs would be approved by planning agency staff as long as it met the requirements in the regulations. In some areas, receiving sites may need approval from a legislative body, which could make the process more lengthy (Canavan 2006).

Another issue critical to TDR success is how other land-use regulations and zoning interact with TDRs. For example, problems can arise if additional density beyond baseline zoning can be achieved by means other than TDRs. This can greatly reduce TDR demand. Another potential problem is the layering of additional requirements on landowners who sell TDRs. These requirements sometimes include land stewardship activities or particular agricultural directives. These requirements may be well-intentioned and could ideally lead to better land uses, but may dampen TDR demand and impede a working TDR market.

There are a number of other factors that may influence how well TDR markets function and how many transactions take place. Markets tend to work best when they are reasonably competitive because competitive markets generally lead to efficient outcomes—outcomes in which the greatest number of trades take place at prices that account for both the value of the farmland preserved and the value of additional density

in the receiving areas. This means that some conditions need to be met. There should be a relatively large number of buyers and sellers and information about the market, including prices on other transactions, should be readily available. And the cost of making trades, or the transaction costs, should be minimal.

These criteria mean that TDRs are likely to work better if, first, there are many landowners who have the ability to sell their development rights and there is no market power on the buyer, or developer, side of the market. Second, landowners, developers, and real estate agents need to have good information about prices at which TDRs are being bought and sold. If this is the case, then arbitrage is not possible and something close to a single price should prevail. From the developer's perspective, a TDR is the same no matter what land it is lifted from; thus, all TDRs should be sold for approximately the same price. Third, exchanges need to be relatively easy to make. This relates to whether there is administrative or discretionary approval of projects, as mentioned above. It also means that buyers and sellers need to have relatively low search costs. Search costs can be reduced if there are third-party brokers or if the local government facilitates transactions.

Other factors that could be important in understanding TDR outcomes are whether there is a TDR bank and whether a PDR program operates in concert with TDRs. Some communities have TDR banks, in which the local government purchases development rights and resells them at a later time. Also, some communities operate a PDR program as well as a TDR program. In Maryland, for example, the state-run MALPF sometimes competes with TDRs. In Calvert County, the county has a PDR program that works with the TDR program; the county purchases a certain number of TDRs each year and retires them.

In each of the chapters that follow, we describe the features of the individual TDR programs that are in place and how they may have changed over time. We also describe the agriculture sector in each county in great detail and local economic conditions. We then conclude each chapter with our findings about how these program features, along with market conditions, have determined the outcomes of the TDR programs. The final chapter summarizes our general conclusions and our recommendations for counties considering adoption of TDRs.

Chapter 2: Montgomery County

I. Introduction

The Montgomery County program, first established in 1980, was one of the first TDR programs in the United States and continues today to have an active market in development rights. The Montgomery County program has a particular design that contrasts in many ways to the other long-running Maryland program, that of Calvert County (discussed in Chapter 3). A unique feature of the Montgomery County program is that it down-zoned a large area of farmland in the north and west to protect this land from development but allowed the development rights that were taken away to be transferred to other areas of the county that were designated for higher density. This and other interesting features of the Montgomery County program are examined below.

The discussion of the Montgomery County program is informed by data collected from the County Department of Planning about the TDR program and on the amount and location of subdivision development that occurred over the period from 1973 to 2004. The TDR program began in Montgomery County around 1980, so the data on development spans a time period before the TDR program began and through its history to the present. In all, there were over 2,000 subdivisions built during the period and a total of 60,998 lots developed.

II. Overview of the County

Montgomery County is located just north and west of the city of Washington, DC, and is a central suburb of the metropolitan region. It is the most populous county in the state of Maryland, with a population of 922,000 in 2005. Although there is a long tradition of farming in parts of the county, there has been extensive development over the years, and it is currently the most densely populated jurisdiction in the state except for Baltimore City. Montgomery County also is a wealthy county, with a median household income of $71,551 in 1999,[4] which is one of the highest of all counties in the United States. Like many counties in Maryland in recent years, it has seen intense competition for land between development and more traditional agricultural and rural uses.

[4] Census data.

Planning

The county has a history of planning for growth and development. The first comprehensive land-use plan for the county was adopted in 1964 and emphasized a broad concept of radiating "corridors" of development with "wedges" of green space and rural land uses.[5] In addition to countywide planning, there are 35 local Planning Areas. Each Planning Area is responsible for its own Master Plan for development that shows current land uses and regulations and provides direction for future land-use changes. Master Plans for each area are prepared by the County Planning Board in consultation with the citizens of the Planning Area and the County Executive and are revised every 5 to 10 years. Adopted Master Plans for each Planning Area are incorporated as amendments to a General Plan for the county and are designed to follow the intent of the General Plan.

Figure 2.1 on the following page shows the 35 Planning Areas of Montgomery County.

Development Pressures and the Loss of Farmland

The rate of growth in development in Montgomery County has been very fast over the past 30 years. The state of Maryland has used satellite data to make an aggregate estimate of how much land is being converted from farm and forested uses to development over time. Figure 2.2 shows the trends for Montgomery County from satellite data through 1997 and then shows the State Department of Planning forecast of future land conversion rates to the year 2015. The rate of conversion of land due to low-density residential development increased rapidly during the 1980s, and the state forecasts that land conversion for low-density development will grow slightly faster than medium- and high-density development over the forecast period.[6]

[5] For detail on the planning process and changes over time, see Harrigan and Hoffman (2002).

[6] The Maryland Department of Planning assumes that low-density development is anything less than 3.5 dwelling units per acre. See more on land use definitions at http://www.mdp.state.md.us/zoningtext.htm

Figure 2.1. Montgomery County, MD, Planning Areas

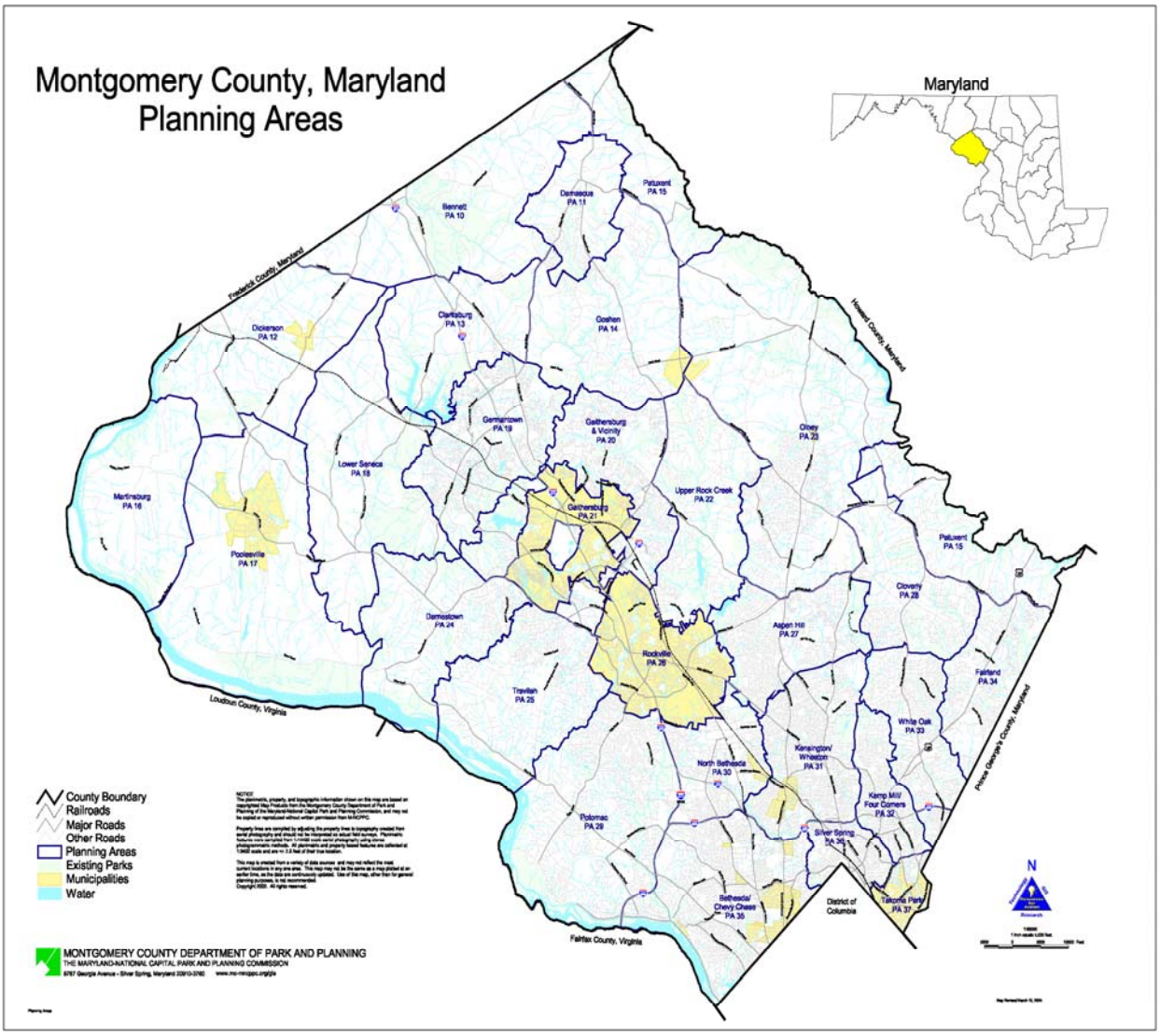
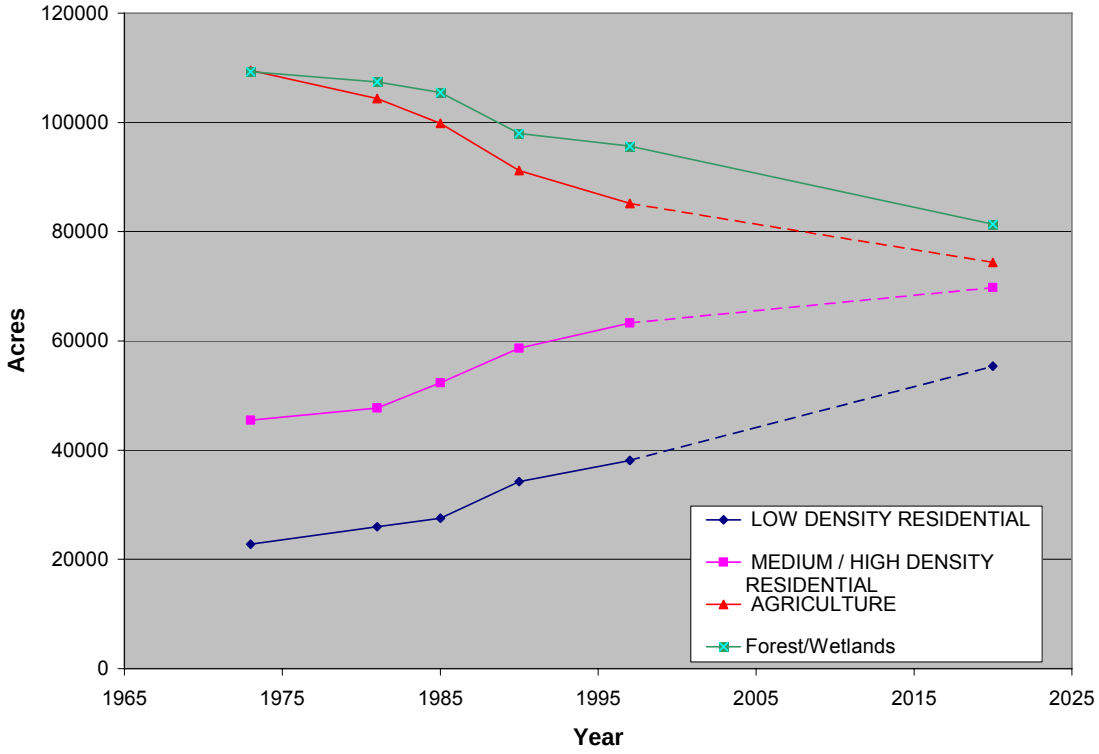


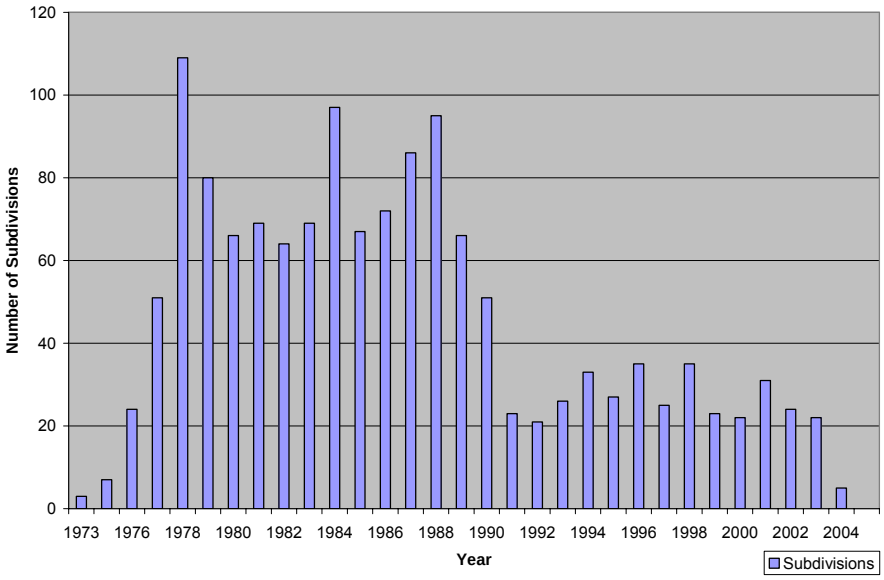
Figure 2.2. Land Use, Montgomery County, MD, 1973–2020



Source: Maryland Department of Planning; Land Use Land Cover in Maryland by Political Jurisdiction.

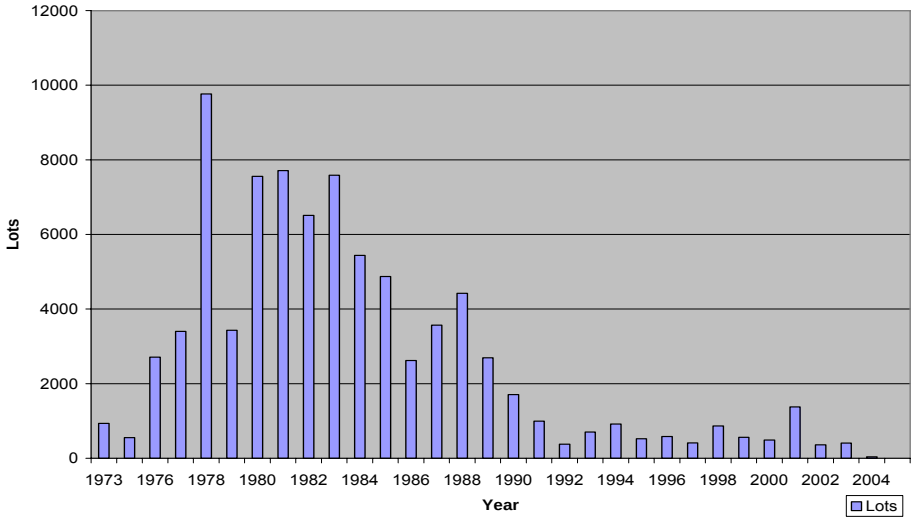
Evidence about growth of the region from subdivision data. Growth in the metropolitan area since the 1970s has spread in waves through the county, with most of the growth occurring in the 1980s and somewhat less growth in the last 15 years. Figure 2.3 shows the number of subdivisions by year they were recorded, and Figure 2.4 shows the number of lots built in each year. The decline in building in the 1990s appears to be relatively larger if one looks only at lots or the number of units. This is because the average size of subdivisions has declined over time, as the large parcels were developed first.

Figure 2.3. Number of Subdivisions by Date of Recordation, Montgomery County, MD, 1973–2004 (4 or more lots)



Source: Data on subdivisions, Montgomery County National Park and Planning Commission, 2004.

Figure 2.4. Total Lots in All Recorded Subdivisions over Time, Montgomery County, MD, 1973–2004



Source: Data on subdivisions, Montgomery County National Park and Planning Commission, 2004.

The growth in development over time also can be viewed by broad regional areas. Three areas were defined based on the location and pattern of development in the county over time.[7] Table 2.1 shows how the Planning Areas were grouped into three areas. The first is the urban ring, which was the first to develop and includes the Capital Beltway and the major central business district of Bethesda. The mid-county section was developed next; it includes some large town centers such as Rockville and Gaithersburg. The rural section includes the outlying and primarily rural areas. However, the latter also includes the Planning Area of Clarksburg, which long has been earmarked as the last major town to be developed in the county.

Figure 2.5 shows the number of lots built by year in each of these major regions of the county. It is clear that the majority of building occurred in both the urban and mid-county sections before 1990 and that development has been relatively low in the rural areas throughout the time period since 1973. The recent increased development in the rural area is the result of the initial development of the Clarksburg Planning Area and there has been some increase recently in lots in the urban region due to urban redevelopment in Bethesda.

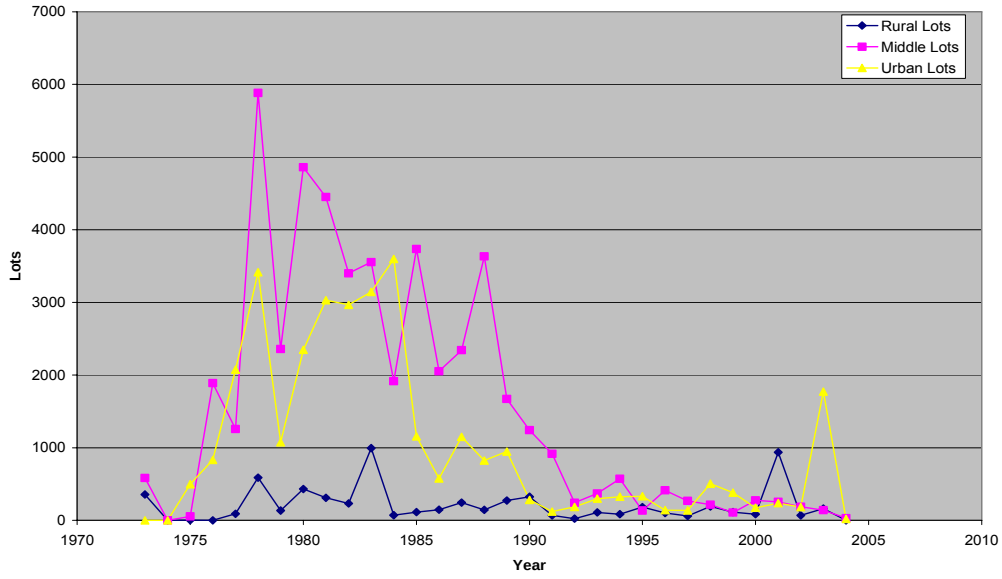
Changes in density and land used for new residential development over time. It is also important to see what has happened to the amount of land used for new residential development over time. This is land that is taken from other land uses, such as farming and forestry. If average land used per house (the inverse of density) is increasing, then the acres used in development will increase faster than the increase in the number of lots. Figure 2.6 shows the average land area divided by the number of lots averaged across all new development in each time period in the county. This average is calculated as the total acres developed for housing divided by the total number of units built. It was relatively constant, at a little more than a half acre per housing unit, during the early period before 1982 and then it increased steeply through the 1980s and early 1990s to more than two acres per housing unit. The period from 1998 to 2004, however, was characterized again by much smaller mean lot size.

[7] See the County Master Plan map (http://www.mc-mncppc.org/gis/large_maps/index.shtm).

Table 2.1. Planning Area Categorized by Location, Montgomery County, MD

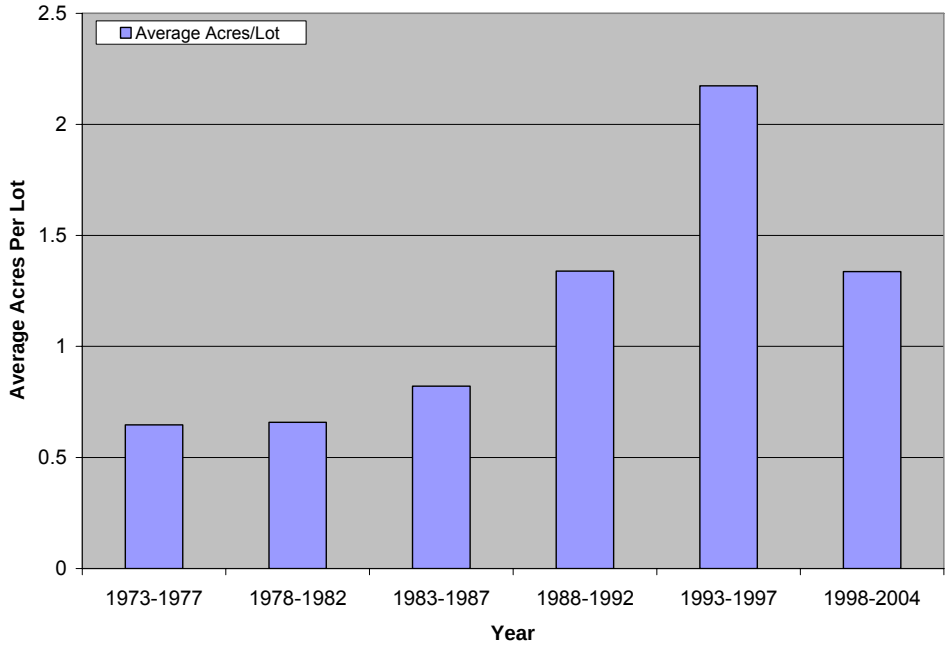
Urban Ring	Mid-County	Rural Region
27 – Aspen Hill	19 – Germantown	10 – Bennett
28 - Cloverly	20 – Gaithersburg	11 – Damascus
29 – Potomac	21 – Gaithersburg	12 – Dickerson
30 – North Bethesda	22 – Rock Creek	13 – Clarksburg
31 – Wheaton	23 – Olney	14 – Goshen
32 - Kemp Mill	24 – Darnestown	15 – Patuxent
33- White Oak	25 – Travilah	16 – Martinsburg
34 – Fairland	26 – Rockville	17 – Poolesville
35 – Bethesda		18 - Lower Seneca
36 - Silver Spring		
37 - Takoma Park		

Figure 2.5. Number of Lots in New Subdivisions by Region in the Year of Subdivision Recordation, Montgomery County, MD, 1973–2004



Source: Subdivisions data, Montgomery County National Park and Planning Commission, 2004.

Figure 2.6. Average Land Area Per Housing Unit, for All Subdivisions, Montgomery County



Note: The average is calculated as the total land area in residential development/total lots in each time period, from subdivision data Montgomery County National Park and Planning Commission, 2004.

Figure 2.7 shows the total acres of land converted to new housing developments by time period since 1973. This figure shows the number of acres added to whatever development was already in existence prior to 1973. Between 1973 and 2004, about 58,000 acres were used for new housing in the county—acres that, for the most part, were converted from forest and farm uses.[8]

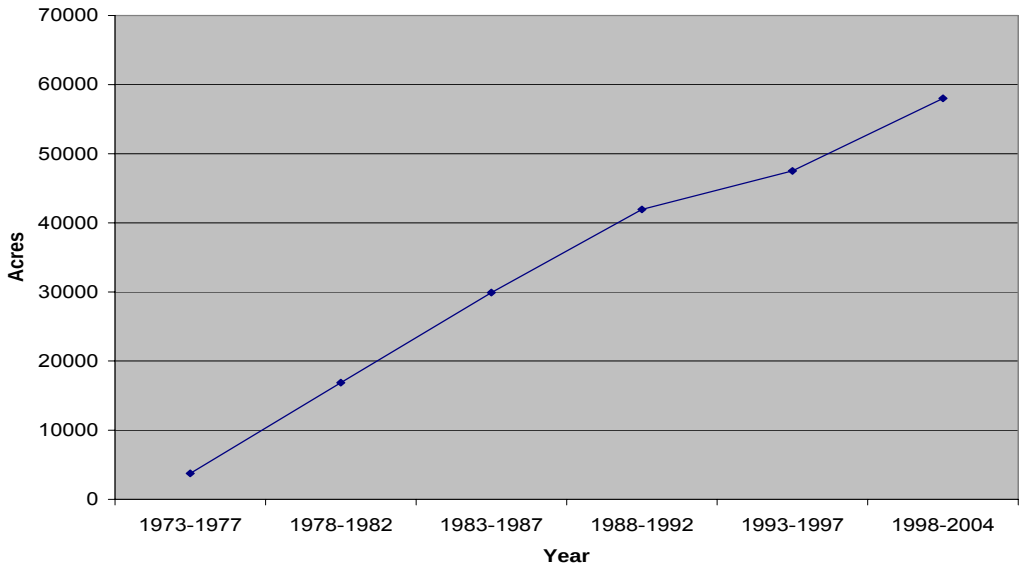
Housing prices over time. Housing prices have been increasing throughout the state, particularly since 2001. Figure 2.8 shows the rate of growth in housing prices in Montgomery County over a 10-year period in both current and constant 2005 dollars. Median housing prices adjusted for inflation almost doubled in the county during this time to more than $430,000 by 2005.

Agricultural lands and products. The county has a long history of farming. Traditional agricultural products include corn, hay, alfalfa, and beef cattle. There has been a long-term decline both in the number of farms in the county and in the acreage in farming. Figure 2.9

[8] See the Land Satellite data reference, Figure 2.2.

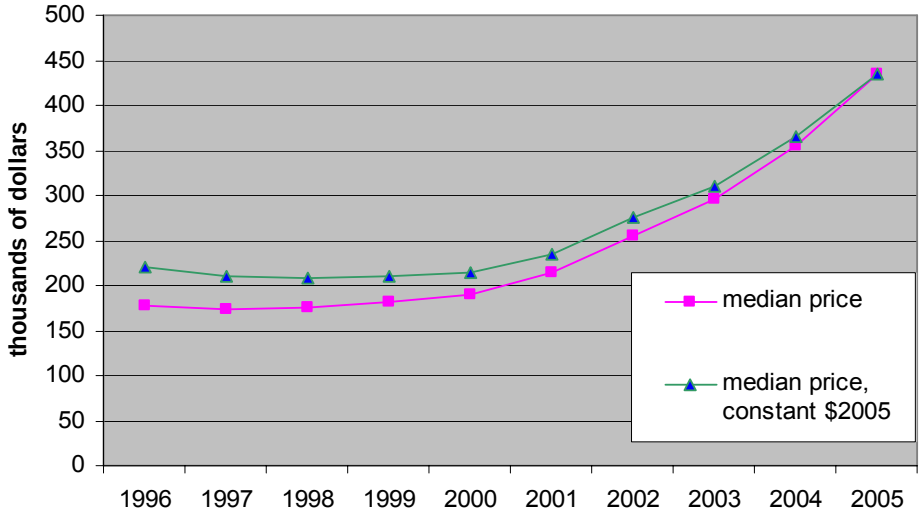
shows the decline since 1948 in the acreage in farming, and Figure 2.10 shows the decline in the number of farms. It is notable that the significant decline in farmland and the number of farms already had occurred by the early 1970s.

Figure 2.7. Cumulative Acres Used in New Housing Development, Montgomery County, since 1973



Source: Subdivisions data, Montgomery County National Park and Planning Commission, 2004.

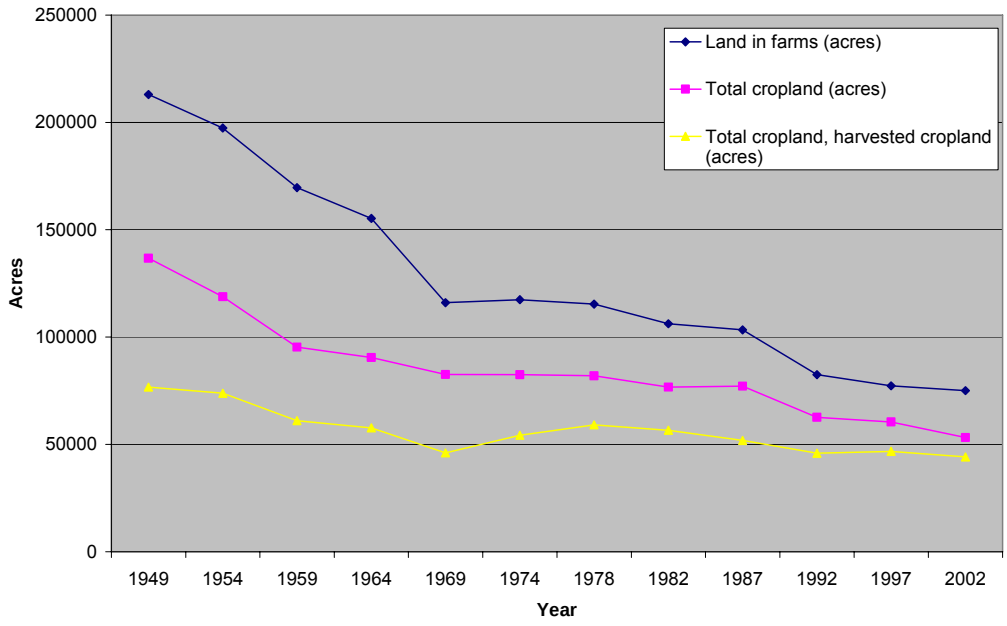
Figure 2.8. Housing Prices over Time, Montgomery County



Source: Maryland Association of Realtors.

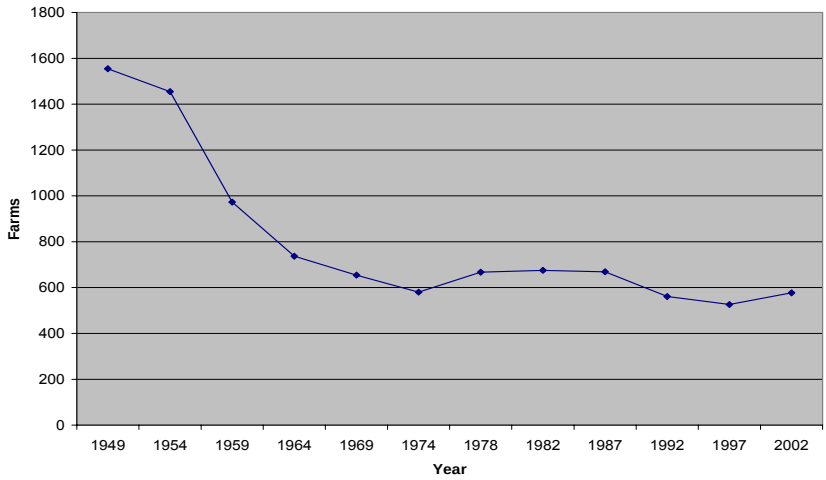
The amount of farmland in harvested crops has declined at a much slower rate than the amount of total farmland (Figure 2.9). This is because the rate of loss in acres and farming in livestock enterprises, particularly beef cattle and pig farming, has been the greatest. There has been some decline in pastureland, but land in harvested crops has declined only slightly over the period. The biggest reduction in harvested crops has been in traditional crops, such as corn and wheat. But other crops have increased in importance. Horse and pony farming, soybean production, and nurseries and vegetable farms have seen increases in the number of acres in recent years. The increase in these types of products accounts for the fact that there actually has been an increase in the number of farms in the county since about 1997, as shown in Figure 2.10. However, the increase in the number of farms primarily is in the small farms category, defined as those farms with less then $2,500 in sales per year (small farms in this category account for about 40 percent of all farms in the county as of 2002).

Figure 2.9. Land in Farms (Acres), Montgomery County, MD, 1949–2002



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

Figure 2.10. Number of Farms, Montgomery County, MD, 1949–2002



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

Figure 2.11 shows the changes since 1978 in the amount of land in different types of crops. Most notable is the decline in land in corn production and the increase in land for soybean production; there is not a detailed series for nursery crops.[9]

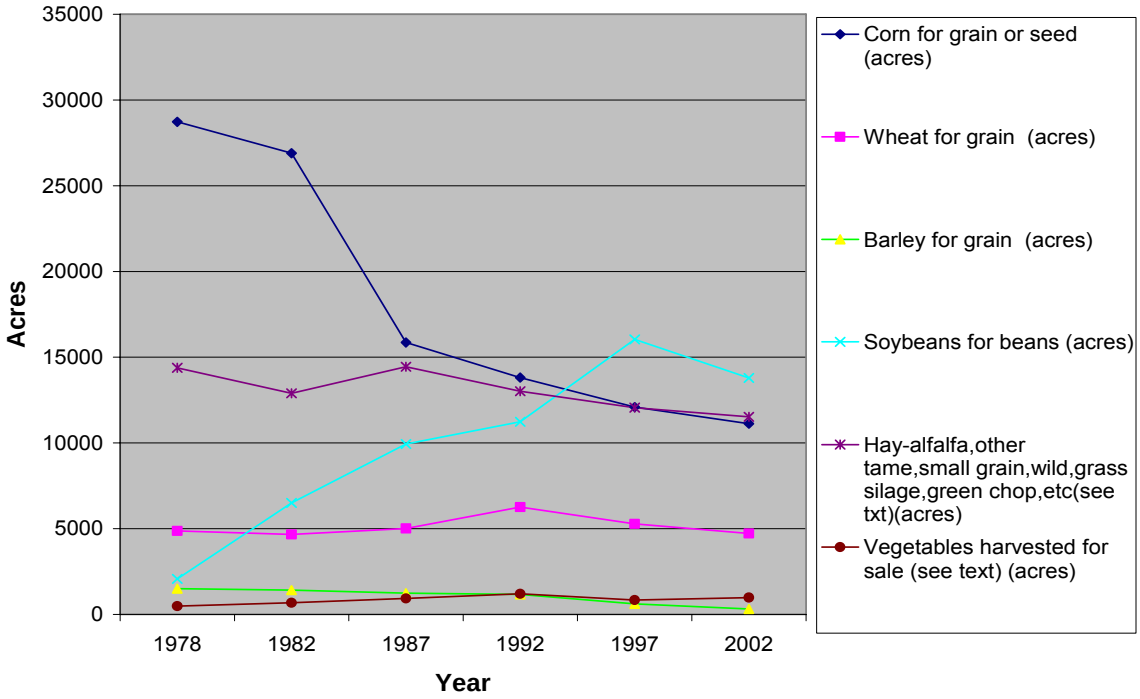
The annual market value of farm products is shown in Figure 2.12. The real market value of agricultural products has fallen since 1980, primarily because livestock and poultry production have declined so much over this period. However, the market value of crops has been on upward trend over the period and increased rapidly in the late 1990s. There is no consistent time series available on the value of individual crops, but evidence from the 1992 Census of Agriculture includes the value of broad crop categories for 1987 and 1992. These data show that "Nursery and Greenhouse Crops" had the largest increase in value of any of the crop categories over this five-year period and that by 1992 this category made up the largest percent of total sales, accounting for more than $11 million of the total of $20 million. By 2003, the county estimated there were 350 horticultural businesses in the county, which includes landscape companies, and that nurseries had annual gross sales of more than $125 million.[10] Horse farming also has become an important industry for the county on recent years.[11]

[9] Some detail on limited data for nursery.

[10] Department of Economic Development, Agricultural Statistics.

[11] See study by Krishna Akundi, *The Agricultural Economy: A Summary of Statistics and Local Views*. http://www.mcparkandplanning.org/board/meetings_archive/06_meeting_archive/agenda_060106/Item_9_06-01-06_opt.pdf. Also, see, Montgomery County Horse Study, 2001.

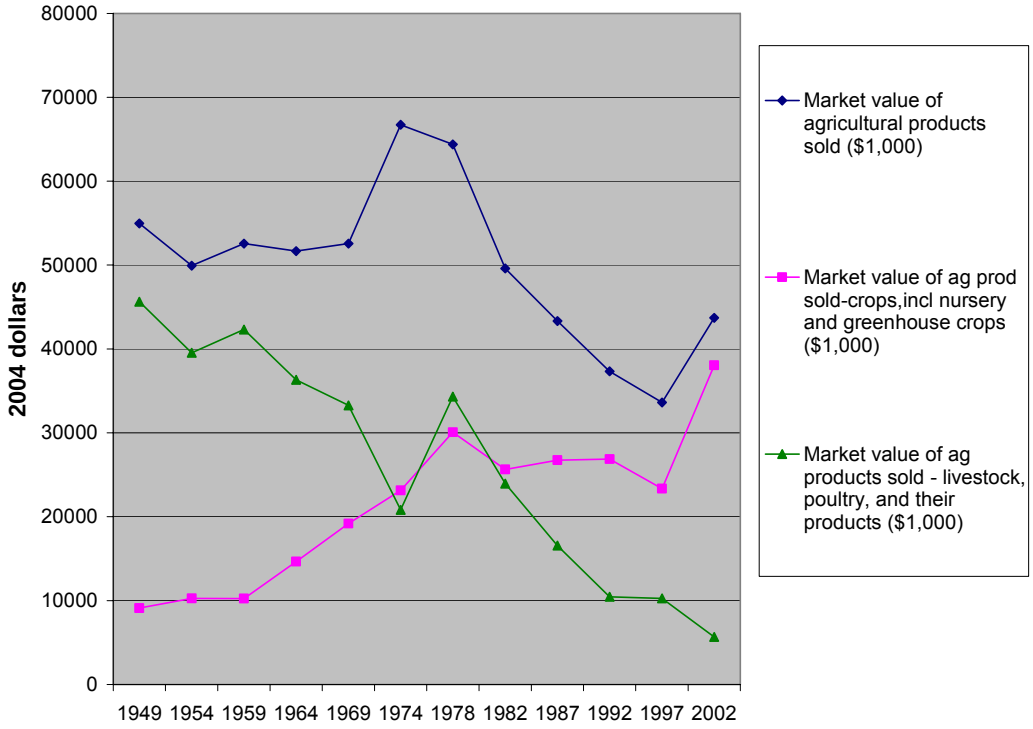
Figure 2.11. Land in Harvested Crops, by Crop, Montgomery County, MD, 1978–2002



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

Overall, the agricultural sector in the county has seen a decline in the number of farms over time, with the biggest losses in livestock and poultry operations. Although overall acreage in farming has declined, land in crop production has remained relatively constant since about 1970, before the TDR program was established. Clearly, some crops have been replaced by others. There is less corn production but more land in soybeans. And, although the number of farms has declined, the average annual value of farm products sold has been relatively constant since 1980 and that value has risen in the last five years to about $75,000 per farm (U.S. Department of Agriculture, National Agricultural Statistics Service 2005).

Figure 2.12. Market Value of Agricultural Products, Montgomery County, MD, 1949–2002, in 2004 Constant Dollars*



*deflated using the Consumer Price Index

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

III. TDR Program

History of Land Preservation and the TDR Program

The original reason for implementing a TDR program in Montgomery County was to preserve the agricultural land in the northern and western parts of the county. The general goals of preserving this large area are to maintain a vital farm economy in the county and to preserve agricultural and open space for the enjoyment of current and future generations.[12] County documents state the importance of ensuring a high quality food supply for local residents and of preserving the agricultural industry and rural communities as an enhanced quality and way of life.[13]

[12] Memo from Karl Moritz to Montgomery County Planning Board, September 1, 2005.

[13] Chapter 4, Land Preservation, Parks and Recreation Plan, page IV-4

Efforts to protect farmland in the county started as early as 1964 with the adoption of *The General Plan*. The goals at the time were to:[14]

- provide and protect large areas of open space for recreation;
- provide a rural setting for farming, mineral extraction, and other natural resource activities; and
- conserve and protect public water supply and recreation.

To achieve these goals, more than 90,000 acres, close to a third of the county, was designated as a Rural Zone, with minimum five acre lot zoning (see Figure 2.13 below). However, it soon became clear that state incentives and a rural zoning initiative would not be sufficient to protect farmland in this region from development.

To strengthen the land preservation policies, the *Preservation of Agriculture & Rural Open Space Function Master Plan* was adopted in 1980. This included the creation of the Rural Transfer zone (called the RDT), Rural Cluster zones, and a Transferable Development Rights (TDR) system. The entire 90,000-acre RDT zone was down-zoned to a maximum of 1 house per 25 acres to discourage residential development.[15] The TDR part of the program was implemented as a way to compensate farmers for the loss in value from the down-zoning. The TDR program allowed the development rights at the previous five-acre density to be sold from the RDT (sending area) and used in other parts of the county that were identified as areas with the public services and infrastructure for development (receiving area). When a TDR was sold from the sending area, the land would be restricted from further development by a permanent TDR easement. The cost of purchasing a TDR were seen by the county as a transfer of funds from the developed areas back to the rural economy.

Goals for agricultural-land-preservation programs from the County's Comprehensive General Plan include:

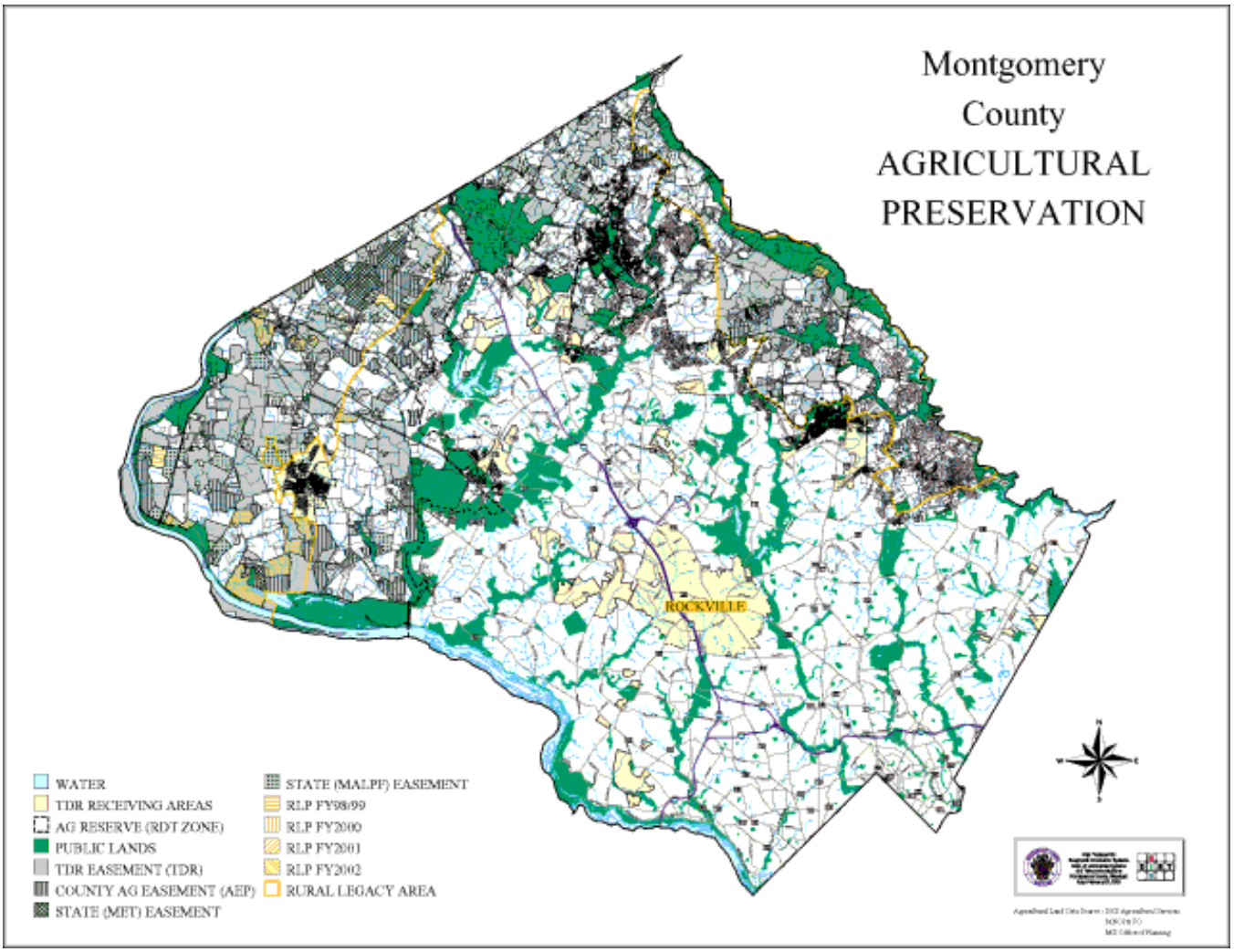
- strengthen incentives and regulations to encourage agricultural uses and discourage development within the Agricultural Wedge;
- limit non-agricultural uses to those that are low intensity or otherwise identified in master plans;
- ensure that rural centers primarily serve rural lifestyles and are compatible in size and scale with the intent of the Agricultural Wedge; and
- continue agriculture as the preferred use in the Agricultural Wedge.

[14] Chapter 4, Land Preservation, Parks and Recreation Plan, page IV-1.

[15] Some wanted to go to 1 in 50 acres.

The TDR program was to be one part of a set of land-preservation policies, both state and county and both publicly funded and privately funded, that would be used to preserve the agricultural areas. These programs include the following state programs: the Maryland Environmental Trust (MET), the Maryland Agricultural Land Preservation Foundation (MALPF), the Maryland Rural Legacy Program; and county programs other than the TDR program: Agricultural Easement Program (AEP) and the Maryland-National Capital Park and Planning Commission's Legacy Open Space (LOS) program. The TDR program has preserved by far the largest amount of land from development to date, as shown below.

Figure 2.13. The Agricultural Preservation Areas



How the TDR Program Works

Sending areas. An area of 91,591 acres was designated as the agricultural reserve and was down-zoned in 1980 from an allowable density of 1 house per 5 acres to 1 house per 25 acres. Land in this down-zoned area, the RDT, could no longer be developed at the 1 house on 5 acre density, but owners of the land are permitted to record and sell the number of development rights equal to the land area of the parcel divided by five. Those rights can then be used for development in receiving areas in other parts of the county.

Land owners in the RDT, however, continue to have the right to build at a density of 1 house per 25 acres on those properties (if development conditions permit), even if some of the development rights have been sold. For example, for each 25 acres, an owner could sell 4 rights and keep 1. Some owners have sold all rights, but many have saved the right to build on 25 acres. These rights to build on 25 acres have come to have a different value from the other TDRs and have continually escalated in value as development pressures have intensified. They constitute a separate market now and each one is worth many times what the other TDRs are worth. We will discuss this issue more below.

There originally were estimated to be just over 15,000 TDRs that could be sold from this entire region.[16] The original documentation for the TDR program acknowledges, however, that not all property owners would participate in the program. One early estimate was that eventually about 9,000 TDRs would be sold (MNCPPC, Functional Master Plan, Chapter V, 46). The best estimate to date is that about 8,000 TDRs have been transferred and used in receiving areas; about 1,800 units were used in the RDT area itself for child lots of landowners; and about 2,200 have been retained, about 20 percent of which are the "remaining TDR" or the TDRs on a property that confers the right over a 25-acre parcel (Greene 2005). These only are estimates because good records have not been kept on the parcels severing development rights, particularly in the early years of the program (see Greene for details, 2005).

Receiving areas. One TDR must be purchased to build an additional unit of housing in the receiving areas. In the original design of the TDR program, it was thought that receiving area capacity should roughly match the number of TDRs that could be sold for the RDT zone. Over the first 10 years of the program, up until about 1992, there were close to 12,000 units of capacity in designated receiving areas, roughly the amount to be sold in the sending area, if all of the

[16] Estimates in the beginning of the program were that there were about 73,000 acres to which development rights could be applied (MNCPPC, Functional Master Plan, 1980).

TDRs were sold. There are a number of difficulties with matching the potential supply with potential demand, which we discuss below. First, we explain how, when, and where receiving areas have been designated.

Each Planning Area is supposed to designate receiving areas within its boundaries in areas that have the potential to take on additional density over and above the baseline density allowed by the zoning jurisdictions. TDRs are not allowed in the rural areas nor are they allowed in the highest zoning regions, such as in townhouse developments or Central Business District and transit areas. Table 2.2 shows the zoning categories and the number of potential TDRs that were permitted to be used in each zoning category.

The last column in the table shows the maximum number of TDRs that can be used in each zoning category. However, the number that actually can be used in any one area is further constrained. Each Planning Area has it own Master Plan that is revised periodically, sometimes as often as every five years. Table 2.3 shows when the Master Plans for each Planning Area were amended.

In each Planning Area, properties and areas are nominated as receiving areas based on the available or planned infrastructure to accommodate higher density. Many Planning Areas do not designate TDR receiving areas at all. For example, Patuxent, Cloverly, and Kensington have not designated any receiving areas in their Master Plan revisions since 1980. For planning areas that do specify receiving areas, the actual allowed density for any particular TDR designated area is determined on a case-by-case basis, with the developers, county planners, and the public participating in the process. Figure 2.14 shows the Planning Areas that do designate at least some receiving areas and the number of subdivisions that use and do not use TDRs in each planning area.

There are several other important points to note about the use of TDRs. The actual maximum number of TDRs allowed on any property when it is developed is much less than the allowable limit for the broad zoning category as shown in Table 2.2. For example, an area that is zoned R-200 is permitted to have two houses on an acre. A Planning Area could designate that area as an R-200 TDR area and allow as many as nine additional houses on an acre (maximum with TDRs of 11 units per acre). However, most Planning Areas limit the number of additional houses in R-200 TDR areas to between three and six units. We discuss this in more detail in the evaluation section below.

Table 2.2. Montgomery County Zoning Chart

Zoning Category	Description	Baseline Maximum Density (Lots/Acre)	Maximum Allowable Density with TDRs
CBD-R1, R-2	Residential Homes in the Central Business District		N.A.
TS-R	Transit-Station, Residential		N. A.[1]
MXN	Mixed Use Neighborhood Zone		N.A. [1]
R-10[2]	Multiple-Family, High Density Residential Homes	53.07	100
R-20[2]	Multiple-Family, High Density Residential Homes	25.47	50
R-30[2]	Multiple-Family, Medium Density Residential Homes with a TDR Option	17.69	40
RT-6 to RT-15	Residential Townhouses	6 to 15 units	N.A.
R-60[3]	Residential detached single family	6	15
R-90[3]	Residential detached single family	4	9
R-150[3]	Residential detached single family	3	5
R-200[3]	Residential detached single family	2	11
RE-1	Residential, single family	1	2
RE-2	Residential single family	.5	4
RE-2C	Residential single family clustered		
RR[3]	Rural Residential	.2	N.A.
RNC	Rural Neighborhood Cluster		
RDT	Rural Density Transfer Zone	.04	TDRs can be transferred off to receiving areas

[1]The Mixed Use and Transit Zones could not use TDRs over the period covered by our dataset, but recently, some Planning Areas have attempted to designate some of these areas as receiving areas.

[2]The high density R-10, R-20, and R-30 zones can add two extra units of density for every one TDR purchased. However, no TDRs have been used in these areas, as discussed below.

[3]Zoning categories also have a clustering option.

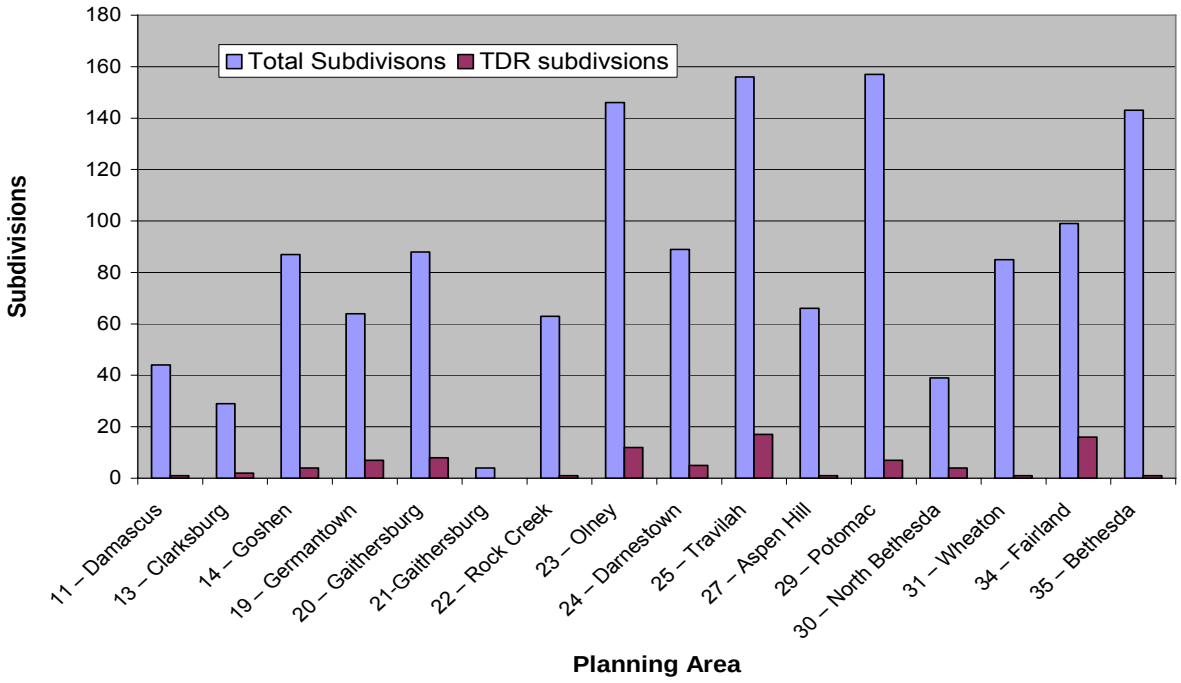
Table 2.3. Dates Master Plans Were Implemented; Planning Areas That Designated TDR Receiving Areas, Montgomery County, MD

Planning Area	Master Plan Dates	
11 – Damascus	1982	
13 – Clarksburg	1994	
14 – Goshen	1982	
19 – Germantown	1982	1990 amendment
20 – Gaithersburg	1985	
22 – Rock Creek	1985	
23 – Olney	1980	
24 – Darnestown	1980	2002
25 – Travilah	1980	2002
27 – Aspen Hill	1994	
29 – Potomac	2002	
30 – North Bethesda	1992	
31 – Wheaton	1990	
34 – Fairland	1997	
35 – Bethesda	1990	1994

Source: Montgomery County National Park and Planning Commission, 2004.

A final issue is the county required a minimum number of TDRs that had to be used if a developer was going to use TDRs at all in a subdivision. A developer had to use at least two-thirds of the maximum allowable number of TDRs that could be used in a particular location. This was an effort on the part of the planners to create a strong demand for TDRs in receiving areas. However, there are a number of ways that developers can get exemptions from the two-thirds requirement. If there are environmental considerations that prevent the use of the full two-thirds number or if there are incompatible uses in surrounding land areas, then an exemption may be granted. Table 2.4 shows that about 70 percent of subdivisions were built meeting the two-thirds requirement for TDRs, but 30 percent did not meet the requirement.

Figure 2.14. Subdivisions Using TDRs and Those That Do Not Use TDRs, in Planning Areas That Have TDR Receiving Areas



Source: Developed from subdivision data, Montgomery County.

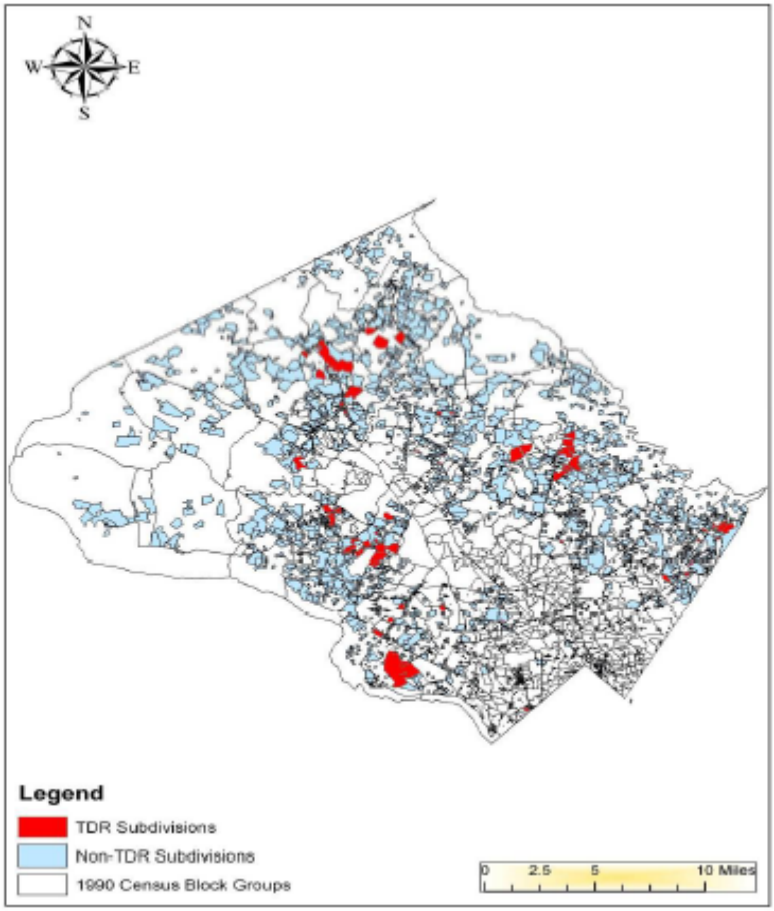
Table 2.4. Subdivisions, Montgomery County, MD, 1974–2004

Total Subdivisions	**2,122**			
Total subdivisions in non-TDR zones		1,995		
Total subdivisions in TDR zones		127		
Total subdivisions not using TDRs in TDR-zoned areas			45	
Total subdivisions using TDRs in TDR-zoned areas			82	
TDR subdivisions at or above the 2/3 constraint				62
TDR subdivisions below the 2/3 constraint				25

Note: 87 Total TDR Zones; 5 not found in the TDR zones.

Figure 2.15 shows the location of the subdivisions that do use TDRs.

Figure 2.15. TDR Subdivisions, Montgomery County, MD, 1973–2004



Other Montgomery County Programs That Affect the Demand for TDRs

The requirement for moderately priced dwelling units. In 1974, Montgomery County enacted a law requiring that Moderately Priced Dwelling Units (MPDUs) be included in many subdivisions of 50 units or more. The law, which is applicable to property zoned one-half acre (R-200) or smaller, requires development of a certain percentage (at one time 15 percent, currently from 12.5 percent to 15 percent) of lower priced housing in these subdivisions. In exchange, the builder gets a density bonus of 22 percent higher density than would be allowed under baseline zoning. A builder often will be able to include additional market rate units in

addition to MPDUs because of the difference between the density bonus and the MPDU requirement. Subdivisions in large-lot zoning categories, which often are not served by public water and sewer, are exempt from the requirement because higher densities are difficult to achieve when installing well and septic systems.

As of November 1998, the total number of MPDUs produced was in excess of 10,000, and by the end of 1996 there were MPDUs in 245 different subdivisions. The MPDU requirement and the associated density bonus in many of the large subdivisions could work on the demand for TDRs in several ways. It could be that the additional density required by the MPDU rules means that less overall density is feasible on the land area, and fewer TDRs will be used. On the other hand, if a subdivision is to be built at high density, then more MPDUs will allow developers to use more TDRs—the density bonus using TDRs is higher if the maximum MPDUs are put on the property. The county is more concerned about the former problem—that the MPDU requirement is reducing the demand for TDRs.

Forest conservation requirements. In 1991, Maryland implemented the Forest Conservation Act, which restricts the number of acres that can be cleared of trees when land is developed. The act is designed to ensure that portions of the neighboring forests are maintained and viable. For many subdivisions, 25 percent of any on-site forests must be protected. If no trees exist on the property, trees must be planted. Under some circumstances, the planting of trees can occur outside of the subdivided area, particularly if the forest can provide protection to other natural resources, such as streams and wetlands.[17] This requirement often prevents developers from using as many TDRs as they would otherwise, because it may be difficult to have both the forested areas and the higher density from TDR use.

The county has is own Forest Conservation Law, enacted just a year later, in 1992. This law created additional rules to minimize tree loss as a result of development.[18] The effect has been similar to the state law, in that it likely has reduced the demand for TDRs, particularly in certain locations where the land remaining to be developed after the forest preservation areas have been designated cannot support the higher density TDRs would allow. The Task Force that was directed to look at the Montgomery County TDR program in 2002 suggested that in

[17] For details on the Maryland Forest Conservation Law, see http://www.dnr.state.md.us/forests/healthreport/act.html.

[18] The County Forest Conservation Law is described in detail at http://www.fosc.org/Advocacy/RevisedFCLSummary.doc.

some cases reforestation could occur offsite to maintain the demand for TDRs but still provide forest cover and viability in the county overall.[19]

Interaction between TDR programs and other land-preservation programs. There are a number of other land-preservation programs in the county. Several are targeted to agricultural land preservation, like the TDR program, but they differ from it in important ways. Maryland's MALPF program purchases easements from farmers based on the prices at which farmers offer to sell. Both the state's RLP and the county's AEP are able to target particular parcels of land that have high value and purchase easements from owners on those. Similarly, the MET program targets environmentally sensitive or scenic properties and can purchase easements to ensure that those properties are not developed. These programs all require separate funding for easement purchase and can be used in conjunction with the TDR program. The TDR program can create a broad private market and any landowner can participate at the going market price for TDRs. No public funds are necessary because the private market reallocates the development rights. There likely will be properties that are not offered to the TDR program but which the county wants to protect. The easements on these properties may be purchased by the various PDR programs described above, usually at higher prices than the prevailing TDR price.

The price of TDRs relative to the other programs could have an impact on the supply of properties to the TDR program. If TDR prices are low, property owners may be more likely to sell easements in the other programs when they have the opportunity. And the opposite also is true: higher TDR prices are likely to increase the supply of property owners wishing to sell in the TDR market. The latter has been true in the Montgomery County market in recent years. There are virtually no properties being sold to the state MALPF program in 2006 because the TDR price is well above the price MALPF has been able to offer.

The TDR Market and Market Prices

There is no central clearinghouse for information about TDR transactions or prices. The TDR market is operated solely through independent realtors in the county. There are several realtors who specialize in the sale of TDRs and who act as brokers between potential sellers and buyers. They are likely to have the best information about what past prices have been. The county collects no data on sales prices and has not accounted very thoroughly for the

[19] Calvert County allows builders to meet forestation offsite by requiring the purchase of TDRs from properties as a way to ensure the forested areas are preserved. This increases the demand for TDRs.

transactions themselves, including information on the sending site, the TDRs which have been sold from the site, and the number still remaining. When a transaction is made, the owner of land is supposed to record the easement sale with the county, but there is not complete recordkeeping on all of these transactions.

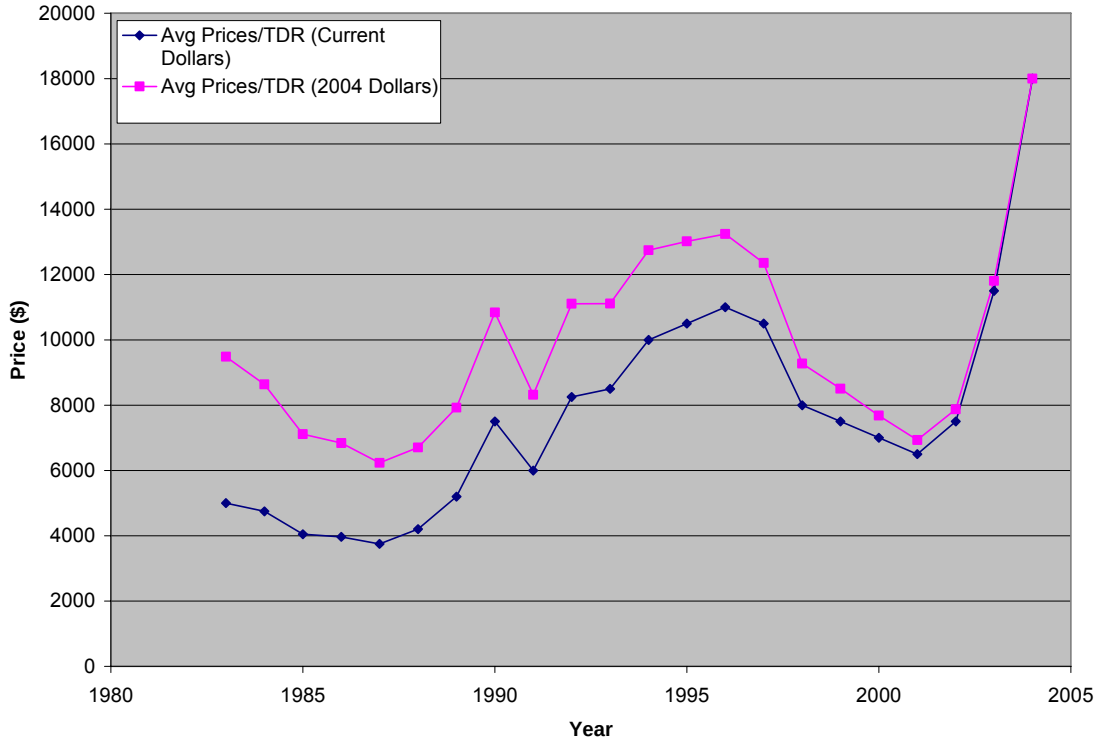
The county makes information available by directing potential buyers of TDRs to the real estate agents who specialize in TDR transactions. In addition, the Agricultural Services Division explains the TDR program to farmers and, in an informal way, will provide them with information about past transactions. But there is no newsletter or any other mechanism for making information about prices available to potential participants. The county intended that there would be a TDR bank when the program was established, but no banking system has evolved.

The staff of the Department of Economic Development's Agricultural Services Division makes an estimate of each year's average sales price based on information from realtors making TDR transactions. Figure 2.16 shows the price path from 1982 to 2004. Prices fluctuated a good deal over this period, falling in the early years and then again in the late 1990s. The price was as low as $7,000/TDR in 2000, but recently there has been strong demand for TDRs because of new developments in the Clarksburg area. The price of some TDR sales in recent months has been as high as $45,000/TDR.

IV. Evaluation of the Program

The Montgomery County TDR program has been quite successful in permanently protecting many acres of farmland, which was the original objective of the program. There have been some difficulties in the design of the TDR market, including the designation of receiving areas and the ability to develop sending area properties using the last TDR. Because the Montgomery County program has been such a long-running and large TDR program, with both advantages and disadvantages in the program design, there is a good deal to learn from the experience there.

Figure 2.16. Average TDR Prices, Montgomery County, MD, 1982–2004



Source: Montgomery County Department of Economic Development.

Acres Preserved

Many acres in the county have been permanently preserved in farming and other uses through federal, state, and local programs. Table 2.5 shows the share of acres preserved under the different preservation and easement programs. The TDR program has accounted for the largest number preserved by far—about 45,000 acres or almost 75 percent of all acres preserved by the end of 2004.

All of the other programs require the expenditure of either federal, state, or local money to purchase easements. Only the TDR program is fully private, requiring no public expenditures. The savings in public expenditures for the amount of land preserved under the TDR program is roughly $63 million.[20]

[20] To get this rough estimate, we take the total number of acres preserved to date (45,000) divided by five to get the number of TDRs sold, or 9,000. We then multiply by the average price of $7,000.

Table 2.5. Acres Preserved in the Agricultural Reserve, Montgomery County, MD, 2002–2004

Program	Acres			% Share of Acres Preserved (July 2004)
	July, 2002	July, 2003	July, 2004	
Montgomery County Agricultural Easement Program (AEP)	2,306	6,678	6,678	10.94%
Maryland Environmental Trust (MET)	2,086	2,086	2,086	3.42%
Maryland Agricultural Land Preservation Foundation (MALPF)	6,268	2,831	3,322	5.44%
Rural Legacy Program (RLP)	1,571	3,386	3,904	6.40%
Montgomery County Transfer of Development Rights (TDR)	42,071	43,195	45,042	73.80%
Total	**51,996**	**58,176**	**61,032**	**100.00%**

Source: Montgomery County National Park and Planning Commission, 2004.

It makes sense that the TDR program, if it is working well, would preserve most of the farmland. The TDR program would tend to preserve the properties that have easement values at or below the price of TDRs at any given time, and, as prices rise over time, more properties will be brought into the TDR program. The properties that are in particularly valuable areas, such as by the water, or those that are between or adjacent to several other preserved properties, will need to be purchased at a higher price. This is where the MET, Rural Legacy, or county AEP program can be used to supplement the TDR program. This appears to have worked fairly well in the Montgomery County case.

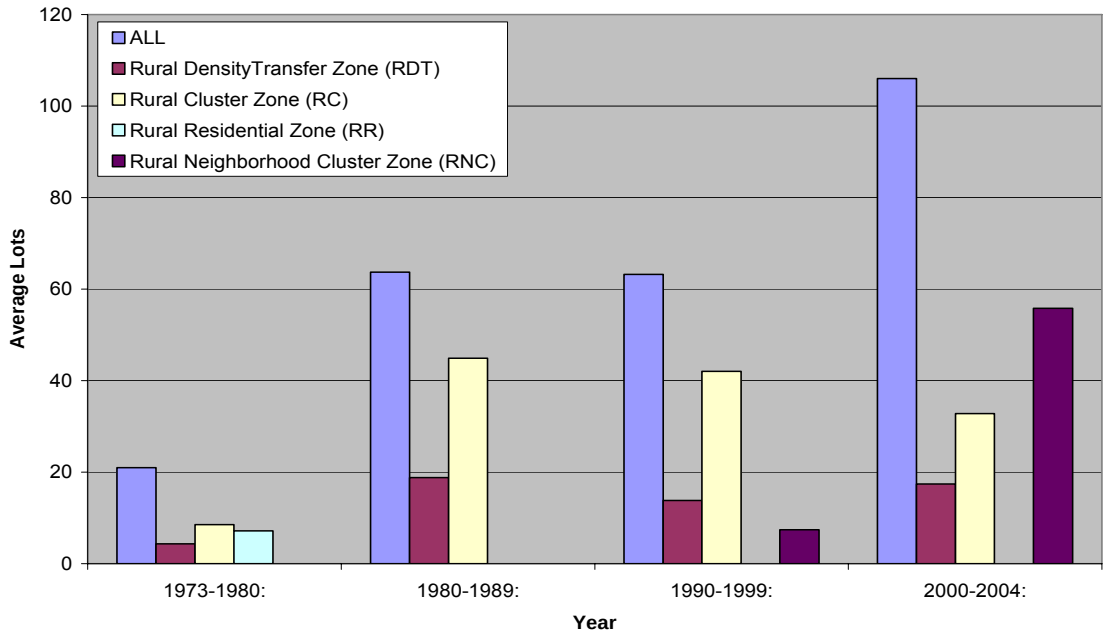
Maintenance of Preserved Areas and Farm Community

The major goal of the Montgomery County down-zoning and TDR program was to ensure that the large area designated for farmland preservation, the RDT zone, was not developed. Although the TDR program has recorded a large amount of preserved acreage in the sending areas, some development has continued in this region, and, recently, there has been a trend toward higher premiums paid for the right to build on 1 in 25 acres in an RDT zone.

Figure 2.17 shows the average annual number of lots built in the rural areas over different time periods. There are a number of different rural zoning types. One is the RDT zone, which is zoned at 1 in 25 acres and which allows sending of TDRs to receiving areas. The other rural areas are zoned at an average density of one house on five acres, and in those areas, the "rural cluster" zone allows houses to be clustered on smaller lots and the "rural neighborhood cluster" zone requires clustering of the houses on smaller lots. Annual development in all rural areas has been low but has increased since the 1970s. Since the down-zoning of the RDT area in

1980, there has continued to be some development, but the rate of development there does not appear to have increased over time. The increase in the rate of development has been in the rural cluster zones in the 1980s and 1990s and in the rural neighborhood cluster zones since 2000.

Figure 2.17. Average Annual Number of Rural Lots Developed, Montgomery County, MD, 1973–2004



Source: Based on subdivision data from Montgomery County National Park and Planning Commission, 2004

There is anecdotal evidence that development continues to occur in the RDT. A recent example is the development proposed on an 800-acre parcel near the Potomac River. Property owners claim to have the right to build 32 units (800 acres/25 acres per unit) through zoning rules, and currently they have been granted rights to build 28 units by planning authorities. Some community groups are arguing that it was not the intended use of the land, so the county should not allow them to build on the site. Some county officials agree that any development of small estates, even on clustered lots, does not maintain the land in farming as had been intended.[21]

[21] The goal of the original down-zoning of the RDT area was that it would preserve a farm community in the region (Functional Master Plan 1980).

Others argue that some development in the region can be consistent with agricultural uses. Development in the RDT does allow clustering on smaller lots in some cases. This can mean that large areas of rural land still can be leased for farming or other rural purposes. For example, on a 200-acre parcel in the RDT, if eight houses are clustered on two-acre lots (average density of 1 house on 25 acres), then there would still be 184 acres of rural land for farming or forestry uses.

What is the evidence on the lot size of the parcels developed in the RDT? Since 1980, when the region was down-zoned and the TDR program established, 50 percent of all developed lots have been less than 5.5 acres in size and 5 percent are less than 2 acres. Table 2.6 shows more detail on lot size both before and after the program was established in 1980. The first is the period from 1973 to 1980, before the RDT area was established and zoned minimum lot sizes were 5 acres. After the down-zoning in 1980, the median lot size was just over 5 acres, and the mean was 16 acres. Since 2000, both the median and mean have increased a good deal. We conclude that many lots developed in the RDT area are relatively small, and if there also is clustering, there is the potential for large areas to be available for farming and forestry uses, along with the development. How successful this will be depends on the rental market for this land and other institutional factors. On the other hand, there also is large lot development going on, and the average lot seems to be larger in recent years. Figures 2.18 and 2.19 show the actual location of parcels that have been developed both in the western and eastern parts of the agricultural preserve.

Table 2.6. Lots and Lot Size of Parcels Built in the RDT, Montgomery County, MD,1973–2004

Time period	Number of lots developed	Median lot size (acres)	Mean lot size (acres)
1973-1980	83	4.9	9.7
1981-2000	170	5.1	16.4
2001-2004	24	24.8	36.8

Figure 2.18. RDT Parcels, Western Montgomery County, MD, 1973–2004

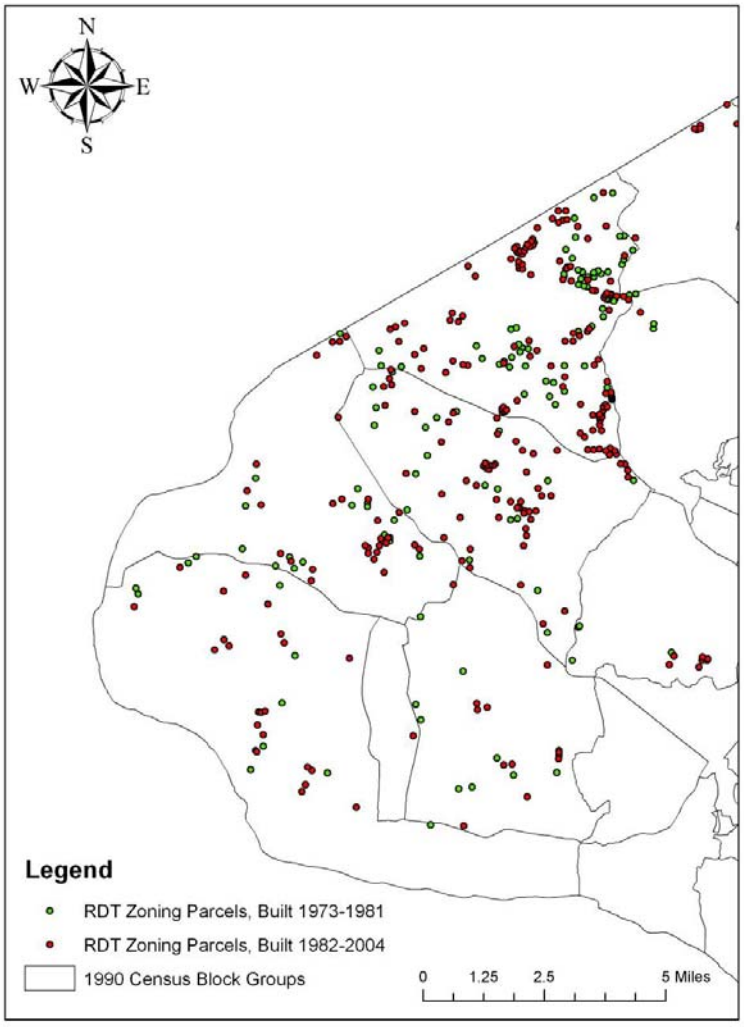
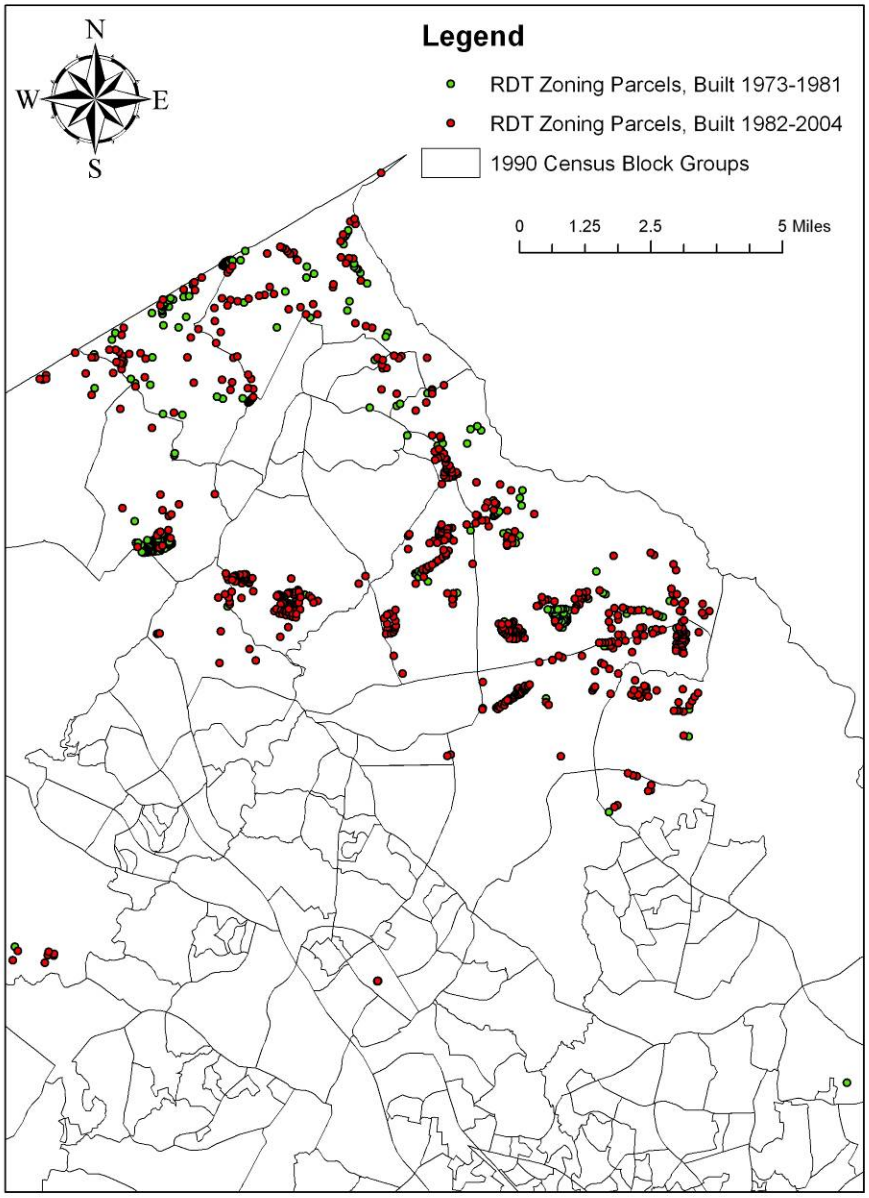


Figure 2.19. RDT Parcels, Northern Montgomery County, MD, 1973–2004



To the extent the county does want to prevent development in the agricultural preserve, the cost of purchasing easements (TDRs) has increased dramatically in recent years. Because the property owners in the RDT can retain the right to build at 1 house on 25 acres, two separate markets for TDRs have arisen: one market for the TDRs that cannot be used for development and one for the TDRs that can be used to build at a density of 1 house on 25 acres. These latter TDRs are sometimes referred to as "super TDRs." Taking the example of the 200-acre property, there is the potential for creating 40 TDRs in total (200/5). But 8 of these convey a right to build at 1 unit on 25 acres, while the other 32 only have value if they are sold and transferred to a receiving area. The price of the transferable TDRs currently is about $20,000 while the price of a "super TDR" may be 10 or 20 times that much because those TDRs convey such a high development value. Currently, estimates are that "super TDRs" can be sold for between $200,000 and $500,000, depending on how rules about allowable septic systems are resolved.[22]

In summary, the design of the TDR program in Montgomery County, which creates TDRs that have two very different rights to the land owner, seemed reasonable when the program was initiated but has some clear drawbacks. There may continue to be more development and less agricultural use than planners and many citizen groups want, and the two separate types of TDRs (transferable and super) create multiple and complex TDR markets.

There are other program designs that may suit the goals of the program better. The requirement that once a TDR is sold from a property, no further development can occur on it (this is the approach in Calvert County, see Chapter 3) will preserve the property no matter what happens to future land prices. Alternatively, the down-zoning could be at larger lot sizes to ensure it is not economical to develop the property or that the remaining open space is large enough that it can continue to be farmed. Is 50-acre down-zoning better than 25 acres? The extent to which clustered land is available in sufficient quantities for farming under the current system, or the optimal amount of down-zoning if it is not, is an open question and is likely to vary across jurisdictions and even over time as agricultural practices and uses change.

One possible solution to the problem that the county would like to see the increased purchase of "super TDRs" and the preservation of more land from development is to create a rural community where "super TDRs" can be transferred and retired. The demand for development of another area where only the "super TDRs" could be used in more dense development around a rural town center might be strong enough to absorb almost all of the

[22] Based on discussions with staff at the Agricultural Services Department of the county government.

remaining TDRs—thus preserving the remaining land from further development. Whether this solution is economically and politically viable would need to be examined.

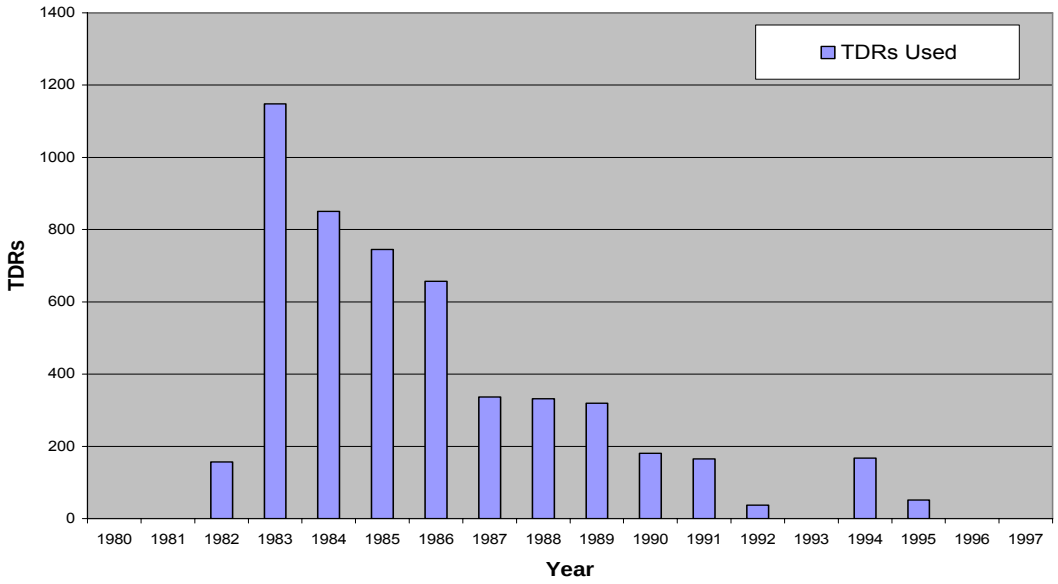
Finally, it is important to note that TDR or PDR programs cannot mandate that farming continues to occur on land that is preserved and not developable in the future. If the goal is to preserve an active farm community, then land preservation alone will not be enough to ensure that outcome. Other markets, institutions, and government programs also will play an important role in how the land actually is used over time.

Performance of the TDR Market

Timing and location of TDR sales. Evidence above shows the success of the TDR program in the county in terms of the total TDRs sold through private transactions. However, most of those TDRs were created and sold in the 1980s, as shown in Figure 2.20. There has been much less activity in the TDR market since that time.

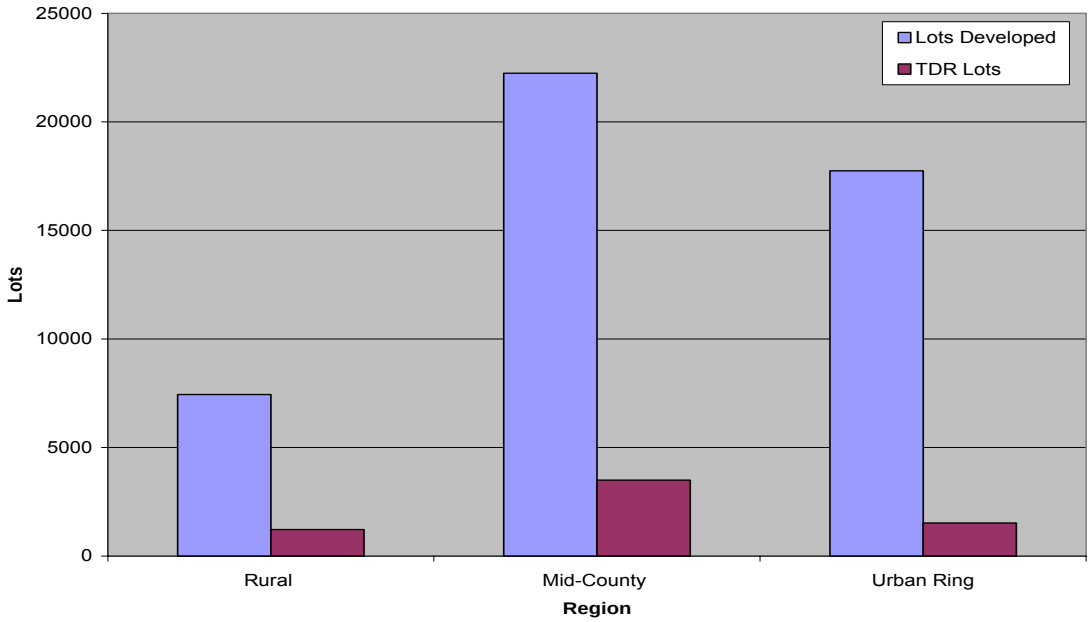
Lots built with TDRs have been a relatively small share of overall development, except in a few planning areas. Figure 2.21 shows the TDR lots compared to total lots in all planning areas that used at least some TDRs. Olney has allowed the most TDRs, which they designated early in the TDR program, with Clarksburg and Fairland also designating a substantial number. However, Fairland took some of its receiving area capacity back in a later Master Plan after the high-density transportation corridor did not evolve as expected. Other Planning Areas not shown on the graph have designated no receiving areas at all: Silver Spring, Takoma Park, Kemp Mill, Cloverly, White Oak, Rockville, and many of the rural Planning Areas that would be unlikely to take on extra density as part of their planning strategy.

Figure 2.20. TDRs Used in Receiving Areas, Montgomery County, MD, by Year, 1980–1997



Source: Based on subdivision data, Montgomery County National Park and Planning Commission, 2004.

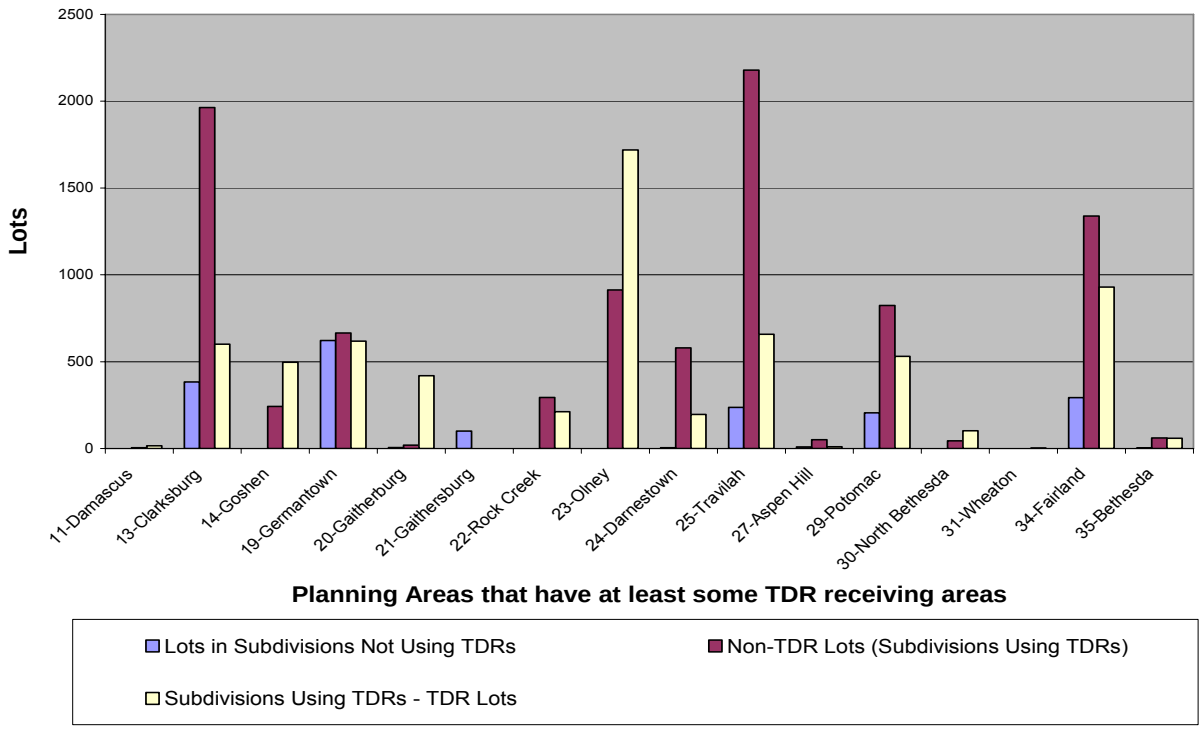
Figure 2.21. Total Developed Lots and TDR Lots, by Region, Montgomery County, MD



Source: Based on subdivision data, Montgomery County National Park and Planning Commission, 2004

Figure 2.22 shows more detail on the subdivisions built in designated TDR receiving areas. The three bars for each Planning Area show the total lots built in TDR receiving areas. Some subdivisions in these areas do not use TDRs at all, even though they are eligible to use them. Other subdivisions do use them, but they have both non-TDR lots, or lots that could have been built under baseline zoning, and TDR lots, or lots that are built because of the purchase of TDRs. There is great variation across these Planning Areas in the use of TDRs. In some areas, such as in Clarksburg, Germantown, Travillah, and Potomac, there are many subdivisions that used no TDR lots at all. In others, the added density through the use of TDRs is equal to or even greater than the baseline density. Olney again stands out in that all subdivisions in the designated TDR areas used TDRs, and, overall, there are more TDR lots than non-TDR lots in these areas.

Figure 2.22. Lots in Subdivisions Using TDRs and Those Not Using TDRs, Montgomery County, MD



Source: Developed from subdivision data, Montgomery County National Park and Planning Commission, 2004

The demand for TDRs. It has been a continuing problem to identify additional receiving areas to keep demand and prices for TDRs strong. There were not sufficient receiving areas designated in part because each planning area decides on its own number and location of potential areas. According to Royce Hanson,[23] there were not enough receiving areas designated, even in the early years when there was an effort to establish a large initial number, and not much capacity has been added since that time. Most jurisdictions are reluctant to absorb additional density. As one planner told us: "No one wants more density in their neighborhood." And some communities may have had concerns about the effects of additional density with the use of TDRs after seeing the experience of some of the early Planning Areas to use a large number of TDRs, such as Olney.

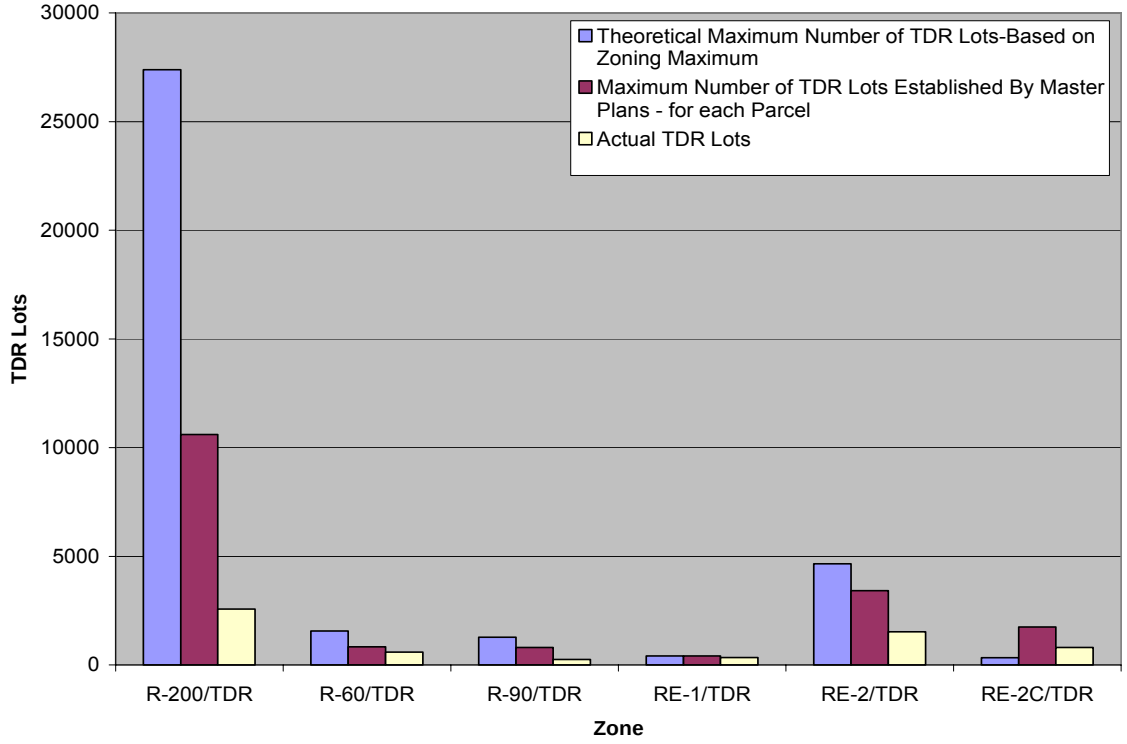
A related problem is the way the county forecasts the number of TDR receiving areas needed to absorb the TDRs that could be sold from the RDT. As described in Section 2 above, initial estimates were that the TDRs from the sending areas would be bought up by roughly an equal number of designated additional receiving area density units. For example, there were believed to be roughly 12,000 TDRs that could be created and sold from the sending areas, and in the early 1980s, receiving areas that could absorb about 10,000 additional density units were identified, with additional receiving area identification to follow.

However, the actual demand for TDRs turned out to be much more complex. There were several different "leakages" that reduced TDR demand. First, zoning rules allowed a theoretical maximum number of TDRs that could be used in any zoned area for additional density (see Table 2.2). But the Planning Areas could decide not only which parcels would be designated as TDR receiving areas, but for any parcel that was designated as a TDR receiving area, exactly what maximum number could be used at that site. This number could be anything less than or equal to the theoretical maximum. Most of the designated receiving sites allowed many fewer TDRs than the maximum. The second leakage was that developers then had to decide whether to use TDRs at all. If they did use TDRs, they were required to use at least two-thirds of the maximum they were allowed, although almost 30 percent used less than that either due to the MPDUs rules or because some developments were grandfathered to a higher density. On average, developers used about 34 percent of the maximum number of TDRs allowed in the Master Plans.

[23] Royce Hanson was head of the Maryland-National Capital Park and Planning Commission and helped design the Montgomery TDR program.

Figure 2.23 shows for each zoning category the difference between the theoretical maximum of TDRs that could have been used according to the zoning limits set by the county, the total maximum number established by the Master Plans for all of the Planning Areas, and the actual number used by developers. The results are interesting in a number of ways. First, most Planning Areas designated the TDR receiving areas in fairly low-density areas. The R-200 (two houses on an acre) and the RE-2 (one house on two acres) have the largest number of both potential and Planning Area-designated TDRs. Second, there are substantial leakages from the potential demand for TDRs to the number actually used in these same two categories.

Figure 2.23. Maximum Number of TDRs Allowed in Zones Designated for TDR Use, by Planning Area, Montgomery County, MD



Source: Based on subdivision data, Montgomery County National Park and Planning Commission, 2004

In the R-200 areas, up to nine extra lots (11 lots in total) could in principle be allowed with TDRs, but the Planning Areas permitted on average only an additional three lots per acre (five lots in total) with TDRs.[24] Then, developers used on average only 24 percent of the number they could have used. In fact, many subdivisions built in R-200 TDR areas did not use TDRs at

[24] The unit of observation for these measurements is subdivisions.

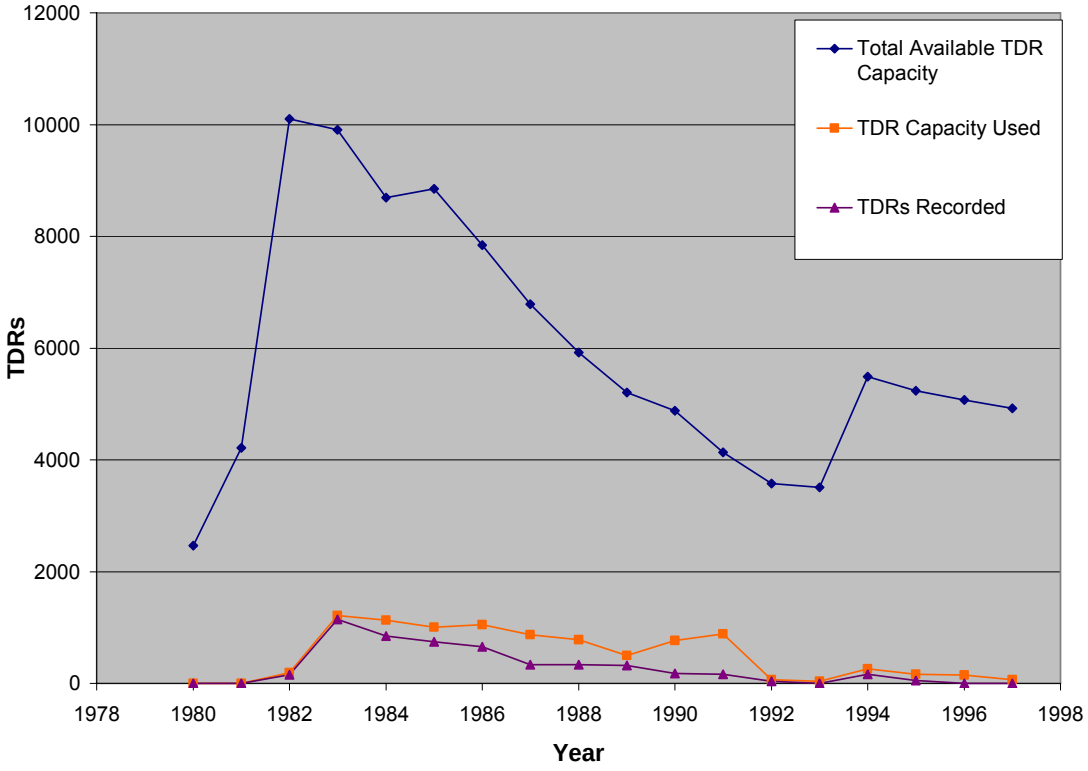
all (see Figure 2.20 above). For the RE-2 areas, the county zoning code established a large potential increase, from one house on two acres to four houses per acre with TDRs, or an additional 3.5 density units per acre (from Table 2.2), but the average number of additional lots permitted by the Planning Areas was 2.34 units per acre. Of the number permitted, developers used only about 44 percent.

There appears to be very little leakage from the RE-1 areas and the R-60 and R-90 areas. However, there were very few receiving areas designated in those zoning types. And there were almost no areas designated as TDR receiving areas in the higher density zoning categories, such as R-20 and R-30. There were several R-10 (10 units on an acre) receiving areas designated, but to date there have been no subdivisions in those regions that have used TDRs. We have been told that it is difficult to build high-density residential units in urban areas, and planners are trying to encourage this type of building. Adding TDRs might add to the difficulty of siting high-density developments.

In summary, TDR zones are designated in relatively low-density areas, with modest increases in allowed density in the areas that are designated. Developers often do not use TDRs at all in TDR-designated zones, and in those subdivisions where TDRs are used, on average only about 44.3 percent of allowable TDRs are used.

Figure 2.24 looks at the leakage problem from a different perspective. It shows the total potential number of TDRs that were available at any point in time based on the areas and densities designated by the Master Plans of Planning Areas and the number used over time. The top line shows the stock in any one year of the total capacity of TDRs that were available for sale in that year. In the early 1980s, there were as many as 10,000 possible TDRs designated in various parts of the county in different zoning areas. Those were drawn down over time, with only small amounts added over time, with one relatively large increase in the potential number available in the mid-1990s. The number of TDRs actually purchased and used for extra density in each year is shown as the bottom line in the figure (this is an annual number). The middle line shows the number taken out of possible use in each period. The difference between the number used and the number take out of possible use represents the number that could have been used and were not, the second "leakage" discussed above.

Figure 2.24. TDR Capacity and TDR Use, Montgomery County, MD, 1978–1998



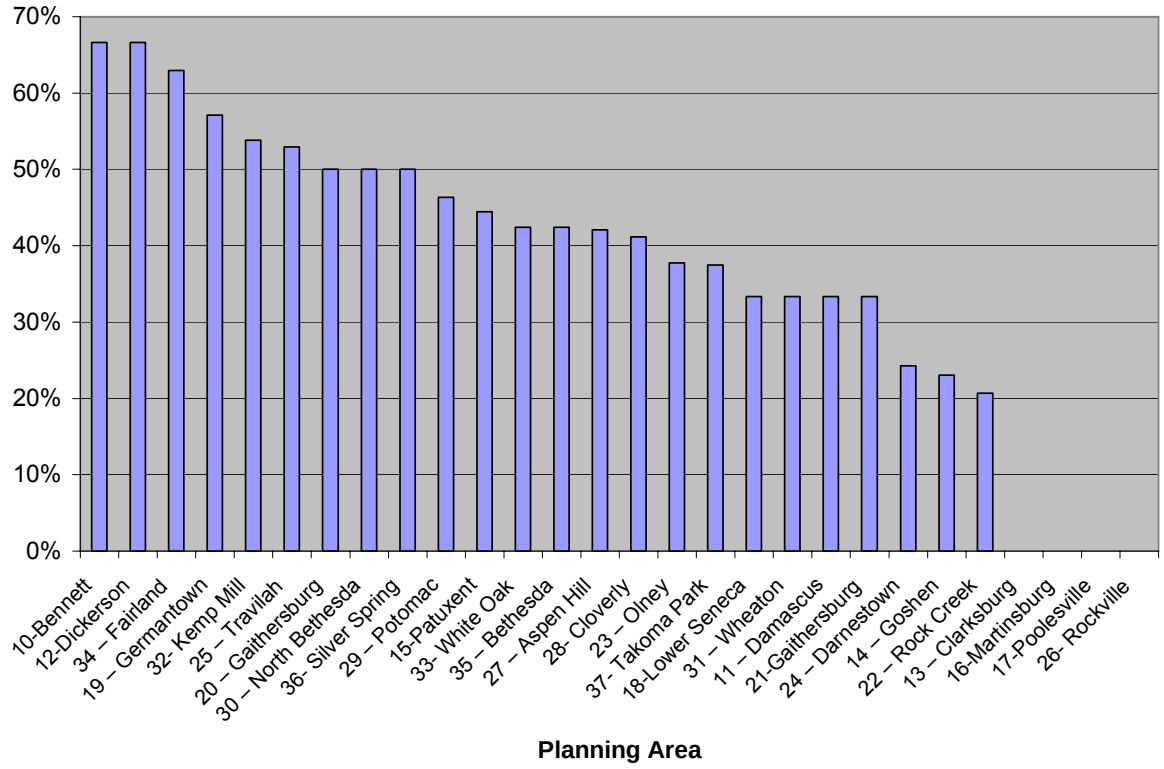
Source: Based on subdivision data, Montgomery County National Park and Planning Commission, 2004

The important point in this discussion is that the number available and the number actually used clearly are not the same. In fact, it is unlikely that any rule of thumb about the number of receiving-area potential TDRs relative to the sending-area TDRs will be useful. Instead, the actual number purchased will depend on the baseline zoning, consumer preferences, market conditions for different housing types, and the willingness and ability of local residents to influence high-density development. Local authorities will need to have a sense of the market demand or be able to design a program to create the appropriate demand for the market to be successful at maintaining prices and transferring the development rights.

One approach to determining where demand for TDRs will be strong is to look at how close previous development has been to existing density limits. There may be areas where the existing density limits established by zoning are "at the limit of the market" and other places where there is excess capacity for additional development density even without TDRs. If TDRs are established where there already is excess capacity, there will be little demand for more density and, therefore, TDRs.

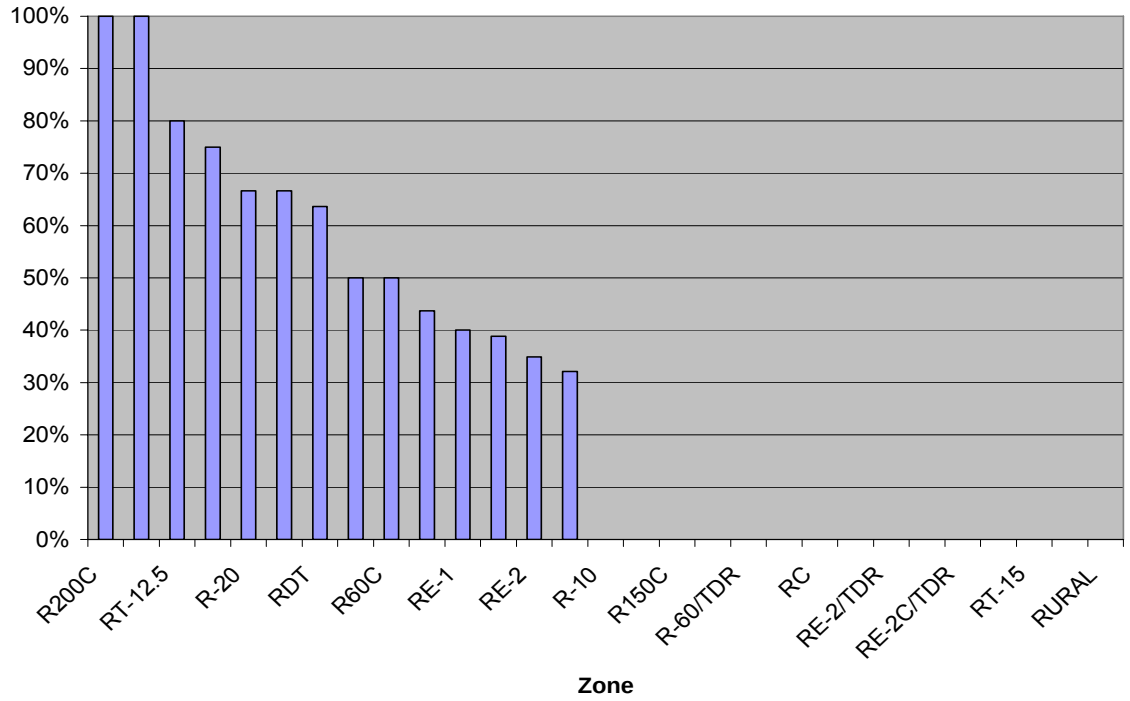
Figures 2.25 and 2.26 show the results of a very simple analysis of the subdivisions in Montgomery County just prior to when the TDR program and many of the original Planning Area Master Plans were established. We look at the percentage of subdivisions built within 10 percent of the limit of the baseline zoning in the preceding years, from 1973 to 1981. Those regions or zoning categories that have a high proportion of building at the limit of allowable density are likely to see the most demand for additional density with the introduction of TDRs. Many of the clustered and higher density areas had the greatest proportion of subdivisions close to the limit of the baseline zoning. The R-200 and RE-2 zoning areas, where most TDRs were eventually located, did not appear to be closest to capacity at the time the TDR program was introduced. The analysis would be most informative if both region and zoning categories were accounted for and done in consultation with realtors and others to ensure the best information for forecasting TDR demand.

Figure 2.25. Percent of Subdivisions within 10 Percent of the Density Limit, Montgomery County, MD, by Planning Area,1973–1981



Source: Based on subdivision data, Montgomery County National Park and Planning Commission, 2004

Figure 2.26. Percent of Subdivisions within 10 Percent of the Density Limit, Montgomery County, MD, by Zoning Category, 1973–1981



Source: Based on subdivision data, Montgomery County National Park and Planning Commission, 2004

The potential demand for TDRs also can be determined using statistical analyses. We have conducted such an analysis and it is described in detail in Appendix A. The advantage of a regression analysis of the number of TDRs used in each subdivision is that we can look at the effect of any one variable, holding the others constant.

Other Issues in Design of the TDR Market

To have the TDR market work, there has to be good information on the part of buyers and sellers so that TDR sales can be transacted at a consistent price. If prices vary a great deal during a given time period, there will be reluctance on the part of some parties to enter the market. In Montgomery County, it is not easy for buyers and sellers to know what past prices have been. There is no record and no central clearinghouse for TDR transactions. The price estimates available (Figure 2.16) are based on the best information obtained by staff at the Agricultural Services division of the county government. The estimate is based on a limited sample of transactions and prices for transactions made during a six-month period were found to vary a great deal.

As discussed earlier, ideally prices for TDRs should rise over time roughly with the rate of interest or with the return on other assets in order to keep buyers and sellers willing to participate in the market. If the price fluctuates instead, then potential buyers and sellers will want to hold out for either higher or lower prices in the future. For example, falling prices will cause some to withhold selling TDRs from sending areas, anticipating that prices will rise in the future. Prices in the Montgomery County program have fluctuated a good deal over time. This appears to be primarily due to uneven receiving area availability and conditions in the housing market. The low prices in the late 1990s and in the 2000–2002 period appear to be due to little demand from developers to purchase TDRs. There was little receiving area capacity available, and what was available was not in demand because the baseline density in these areas was acceptable. The recent surge in prices is due to a strong housing market and to the strong demand for TDRs in the Clarksburg area of the county. Clarksburg is the last large town in the county planned for relatively high density. It is a "greenfield" site without a lot of existing surrounding neighborhoods that has long been planned for high density with the use of TDRs in many parts. Another factor driving prices up is that the number of TDRs available for transfer is shrinking. Thus, lower supply and greater demand have increased prices in recent years.

It is interesting that no broker has been able to step in to stabilize prices over time, as would happen in most markets. There have been no third-party transactions. The program is designed so that a developer (buyer) will buy directly from a farmer (seller). There could be a role for the county or other party to buy and sell to stabilize prices over time.

Another problem for the smooth functioning of the TDR market is that the use of TDRs, even in TDR receiving areas, must be negotiated with the county planning staff and in public hearings on development. Zoning regulations do not convey a "by-right" density; in effect, each development must be negotiated for the number of units and the density through a lengthy development review process. We are not arguing that this is the wrong approach but just that it is likely to deter developers from using TDRs compared to a situation in which there was less negotiation over the development density outcomes.

The requirement to use at least two-thirds of the maximum allowed number of TDRs is also likely to have deterred developers from using TDRs. In fact, the average number of TDRs

used was less than this, as described above. It is not clear that this rule actually increases the number of TDRs used in aggregate, and it probably should be dropped altogether.[25]

V. Conclusion

The Montgomery County TDR program has been successful in many ways. The county's farm economy, although changed from 25 years ago when the RDT area was designated and the TDR program began, remains relatively strong. The TDR program has preserved more than 45,000 acres, almost 75 percent of all acres preserved by county, state, and private programs by the end of 2004. The savings in public expenditures compared to a publicly funded PDR program for an equivalent amount of land preservation is roughly $63 million.

There is, however, mounting development pressure in the RDT area, even at the 1-house-to-25-acre zoning. Some development is occurring in this region with clustered housing development. Much of this development is clustered on relatively small lot sizes, although average lot size has been increasing in recent years. With clustered housing, there is still the potential for large undeveloped areas to be leased for farming, and this seems to be the case in many areas.

Because the value of the land in the RDT is increasing, the county faces a mounting problem with "super TDRs." Two separate markets for TDRs have arisen: one market for the TDRs that cannot be used for development and one for the TDRs that can be used to build at a density of 1/25 acres. The value of the latter, the "super TDRs," has risen dramatically in recent years and they now command a price many times higher than the other TDRs. The county is currently exploring ways to either allow a separate market for these rights or to retire them through some type of public funding mechanism. The alternative is to allow continued development in the region.

There has been a problem of insufficient receiving areas throughout the life of the TDR program. Most of the receiving areas were created and sold in the 1980s, and there has been much less activity in the TDR market since that time. Planning Areas have a great deal of power over how many receiving areas to designate and where they will be located. Most jurisdictions have been reluctant to take on much additional density, and some have not designated any TDR

[25] The Montgomery County Task Force suggested scaling back this requirement (Task Force Report 2003), but we argue that it should be dropped.

receiving areas. For those that did designate receiving areas, we found that the TDR zones were for the most part in low-density areas with average baseline density of from one house on two acres to two houses on one acre (R-200, RE-1, RE-2). And although large density increases with TDRs were permitted by county rules in these areas, most Planning Areas specified densities just slightly higher than the baseline, using very little of the possible TDR capacity.

Very few areas with moderately high or high baseline density have been designated as receiving areas. In fact, there have been almost no areas designated as TDR receiving areas in the high-density zoning categories, such as R-20 and R-30, that allow 17 to 25 units to the acre. Planners tell us that they would like to attract higher densities to urban areas, but it has been difficult to do so for a number of reasons. One problem is that existing residents often do not want higher density. Adding TDR requirements to attain higher densities might further discourage their use.

Another "leakage" in the potential use of TDRs is that there is a great deal of variation in the whether developers use TDRs in TDR-designated zones. Some developers do not use any TDRs. To induce developers to use TDRs, the county has a requirement that at least two-thirds of the total number of allowed TDRs have to be used in any subdivision that uses TDRs. The overall effect of this rule on TDR demand is unclear, because it is likely to have dissuaded some developers from using TDRs at all. We found that in those subdivisions where TDRs have been used, on average only about 50 percent of the allowable number are used. The two-thirds requirement seems to have been waived, at least in some cases. Another issue in the use of TDRs is the process of TDR designation and subdivision approval in the county. Both the establishment of TDR receiving areas in Planning Areas and then the number of TDRs used by developers in each subdivision must be negotiated with planners and in public hearings. This takes resources and likely inhibits the demand for TDRs.

All of this means that the actual use of TDRs in receiving areas has been well below the expected number originally forecast by the county. The original intent was to have the same number of TDRs in receiving areas as needed to be purchased from the sending areas to preserve the designated farmlands. Actual demand, based on the evidence above, has been much lower than expected. The county will need to develop alternative forecasting methods to better determine future TDR demand. One indicator of TDR demand is to examine the density of existing subdivisions in a region. If most of them are close to the baseline density limits, there is more likely to be additional demand for density through TDRs. Market conditions for

different housing types are important, as is the willingness and ability of local residents to influence density outcomes.

For a smoothly functioning TDR market, there has to be good information on the part of buyers and seller so TDR sales can be transacted at a consistent price. In Montgomery County, it is not easy for buyers and sellers to know what past prices have been. All transactions go through realtors. There is no central clearinghouse for information about TDR transactions, and the price estimates that do exist are based on limited information. In general, there has not been a great deal of attention to recordkeeping in the program, although this has changed in recent years with recommendations of the Task Force in 2002.

Ideally, prices for TDRs should rise over time, in keeping with the return on alternative assets, in order to keep potential buyers and sellers participating in the market. Prices in the Montgomery County program, however, have fluctuated a good deal over time. This appears to be primarily due to uneven receiving area availability and the willingness of developers to use TDRs, with the more recent increase in prices due in part to the shortage of TDRs, especially those that are not "super TDRs."

All of the issues described above provide useful lessons for other jurisdictions that are considering implementation of land-preservation programs such as TDR and PDR programs. The Montgomery County program has been very successful at preserving land, and the county will continue to enhance and modify its TDR program to achieve the program goals.

Chapter 3: Calvert County, Maryland

I. Calvert County Fundamentals

Geography, Population, and the Economy[26]

Calvert County is located in southern Maryland on the western shore of the Chesapeake Bay. With a land area of approximately 137,700 acres, it is the smallest county in Maryland. Water is a distinguishing feature of the county: there are 101 miles of shoreline along the bay and the Patuxent River to the east. The topography of Calvert is variable and rugged. An upland plain runs in a northwest-southeast direction; on the Chesapeake Bay side, the land ends in high cliffs of clay, gravel, and sand rising from the shoreline to heights of 125–135 feet. On the west, the upland areas slope toward the Patuxent River, forming a terrace that contains some of the best farmland in the county.

Historically, farming was important in Calvert County, with tobacco a major crop. However, because of the county's proximity to Annapolis, Maryland, and Washington, DC—its northern border lies approximately 35 miles from Washington—Calvert County has experienced a great deal of development pressure over the past 20 years. During the 1990s, Calvert County was the fastest growing county in Maryland; with a population increase of more than 45 percent, it was well above the state average of 10.8 percent. Between 2000 and 2004, it grew another 16 percent. In 2004, Calvert County's population was 86,474. This gave it an average population density of slightly more than 400 people per square mile, typical of many counties in the United States on the fringes of major metropolitan areas. There are no large communities within the county borders. The two incorporated towns of Chesapeake Beach and North Beach, on the Chesapeake Bay, have a combined population of slightly more than 5,000. The county seat is Prince Frederick, which lies geographically in the center of the county and has a population of 1,432.

[26] Information in this section is from the Maryland State Department of Assessments and Taxation (see http://www.dat.state.md.us/sdatweb/stats/index.html); the epodunk website on local government statistics (see http://www.epodunk.com/cgi-bin/localList.php?local=21&locTGroup=Counties&direction=down&sec=0; Maryland State Data Center of the Maryland Department of Planning (http://www.mdp.state.md.us/msdc/); and Calvert County 2004 Comprehensive Plan (see Calvert County 2004).

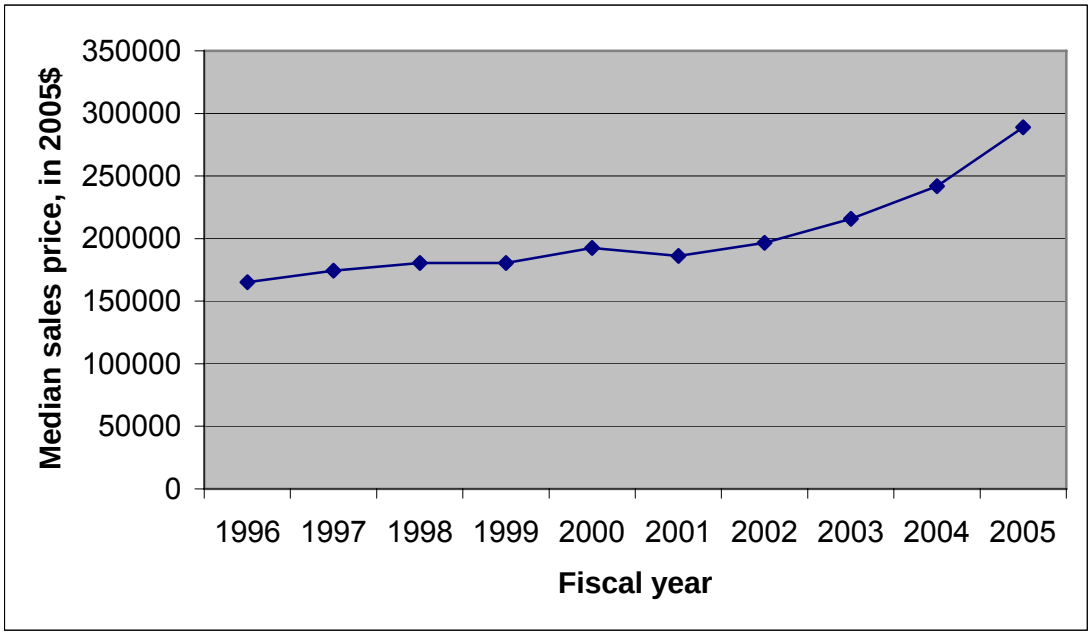
In 2003, median household income in Calvert County was $75,250, slightly above the U.S. average and above that of its southern Maryland neighbors, St. Mary's and Charles Counties. Many of Calvert County's citizens commute to jobs outside the region, including to Washington, DC. In 2003, 43 percent of workers in Calvert County held jobs outside the county. In comparison with the other two southern Maryland counties, Calvert County tends to have more people relative to jobs while St. Mary's County, for example, has more jobs relative to people. Calvert County was home to 27 percent of the population of southern Maryland in 2003 but had only 21 percent of the jobs in the region. The latest report from the Calvert County Office of Economic Development lists the top four employers in the county as the public schools, Constellation Energy, the regional hospital, and the county government. The county considers tourism to be an important and growing part of the county's economy. The 2004 Comprehensive Plan reports that annual tourism expenditures have been steadily rising in recent years, increasing 8 percent between 1999 and 2001 to $50 million (Calvert County 2004).

As in much of the Washington region, house prices in Calvert County have increased in recent years. The trend in house prices over the 1996–2005 period is shown in Figure 3.1. House prices, in real terms, rose only slightly over the 1996–2001 period, but since 2001, the median sales price of owner-occupied housing has risen 70 percent—from $170,000 in 2001 (in 2005 dollars) to just under $290,000 in 2005.[27] This median price is above that of neighboring Charles and St. Mary's Counties. There is a distinct difference in prices in the northern and southern parts of Calvert County, however. In 2001, for example, the median sales price for single-family homes in Dunkirk, the northernmost town center, was $299,500 (in current year dollars), while the median price in Lusby, a town 28 miles farther south (and thus farther from Washington, DC, and Annapolis) was $220,000.[28]

[27] These figures are from the Maryland State Department of Assessments and Taxation, which uses a fiscal year of July 1– June 30.

[28] These figures are from Maryland PropertyView data and are actual sales prices for single-family dwellings sold in the year 2001 in those two town centers.

Figure 3.1. Median Sales Price of Owner-Occupied Housing, Calvert County, MD, 1996–2005



Source: Maryland State Department of Assessments and Taxation.

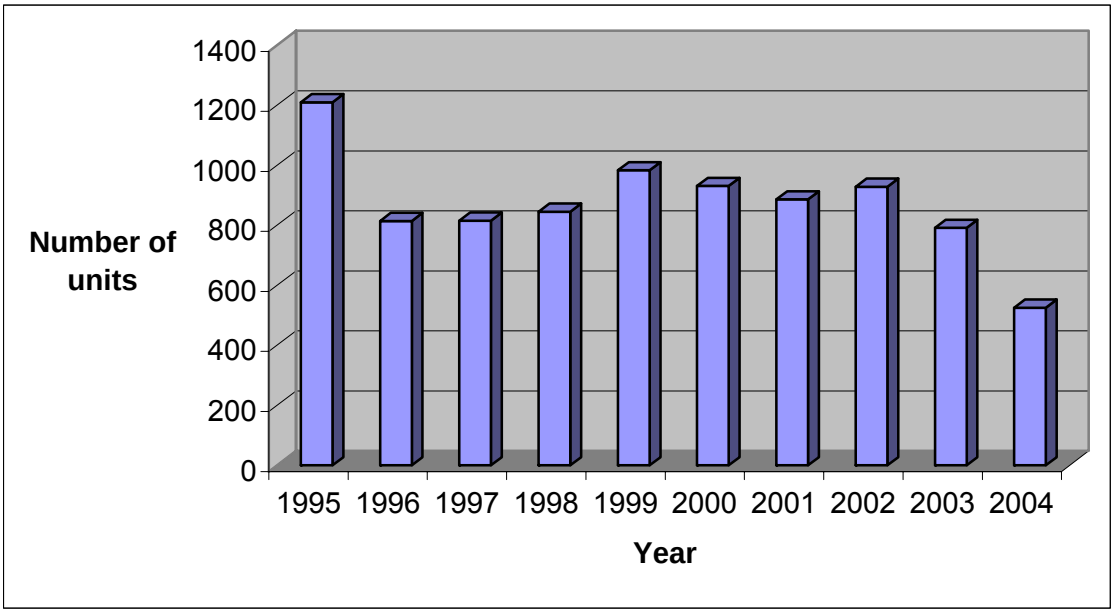
As we will see in the discussion of the Calvert County TDR program, it is possible that the program has contributed to rising house prices there, particularly in recent years. In TDR receiving areas, new houses are higher priced because of the cost of the TDRs; this, in turn, leads to a general increase in the price of all new houses. In addition, Calvert has had significant down-zoning of all areas of the county since 1999. Since down-zoning restricts the number of houses that can be built on a specific amount of acreage, it is likely to further contribute to rising prices. Moreover, concomitant with the down-zoning, the county increased incentives for using TDRs; more TDR use leads to higher prices. These changes could be a partial explanation for the higher prices in Calvert County relative to neighboring Charles and St. Mary's Counties.[29]

Construction of new houses has declined slightly in recent years in Calvert County. Figure 3.2 shows the annual number of new housing units authorized for construction each year between 1995 and 2004. Over the entire 10-year period, a total of 8,728 new units were built; this

[29] Calvert County's Planning Director Greg Bowen believes that the county's policies have not increased house prices, in part because there is a single housing market covering all southern Maryland counties. If houses in Calvert County are more expensive than in neighboring counties, homebuyers will shop in the neighboring counties, thus dampening price rises in Calvert. However, the down-zoning and TDR policies may well have led to a general increase in house prices in the region. In addition, the extent to which there is a single market is an empirical question.

figure is less than the number of units built in Charles or St. Mary's Counties. Also, of the three counties, only Calvert County has seen a decline in building in recent years. This may be due in part to the county's adoption of an Adequate Public Facilities (APF) ordinance in 1988. The APF ordinance requires that school and road capacities be reviewed before development projects are approved. The capacities must satisfy specifically defined public facility capacity standards; if the standards are not met, development is curtailed or delayed until school or road capacity is added. The APF moratorium was applied in Calvert County in 1989 and again in 2000. It halted development in parts of the county during the 1990s and the entire county was closed to any new development in November 2001 (McConnell, Kopits, and Walls 2006). Although parts of the county reopened for development, the APF again became binding in most of the county in 2006 (Bowen 2006). The declining number of new housing units also could be due to the down-zonings mentioned above and elaborated on more below. Down-zoning means that fewer houses can be built on a given amount of acreage; since Calvert down-zoned all areas of the county, that factor could explain the drop-off in building.

Figure 3.2. New Housing Units Authorized for Construction, Calvert County, MD, 1995–2004



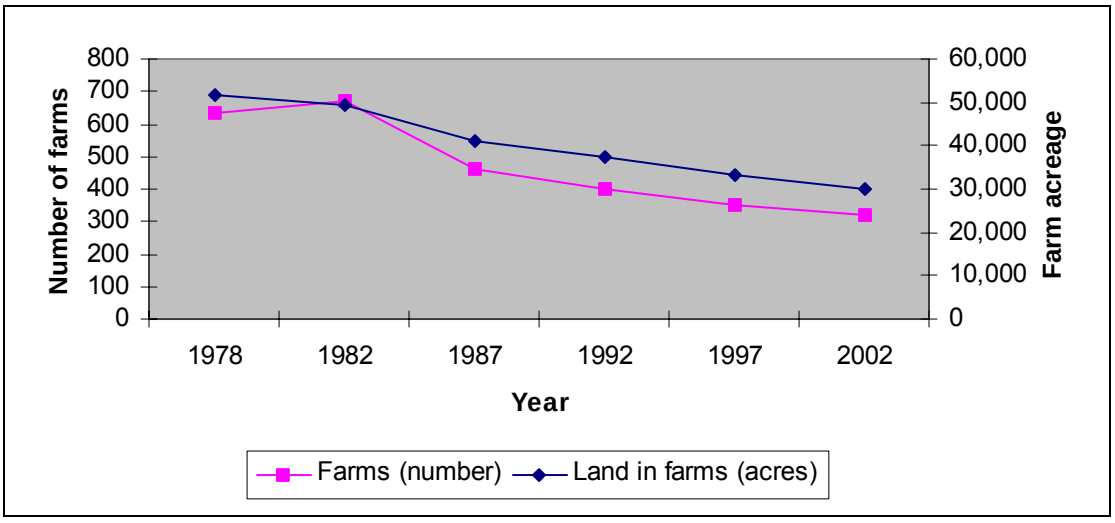
Source: Maryland Department of Planning.

The next section discusses the local farm economy in Calvert County. The housing construction statistics will be revisited later in the chapter when we look at geographic patterns of development in the county.

Farming[30]

Just over 30,000 acres—approximately 22 percent of county land—was in agriculture in 2002, a 42 percent decline from 1978 and 20 percent decline over the 10-year period from 1992. Figure 3.3 shows farm acreage and the number of farms in Calvert County from 1978 through 2002. Both the number of farms and total acreage have dropped over time. There were 634 farms in the county in 1978 compared with 321 in 2002. In fact, over the 1990s, Calvert County lost farmland at a higher rate than any other county in Maryland except Howard, Somerset, and Harford Counties (Maryland Department of Planning 2003). Approximately 6.5 percent of unprotected agricultural land in Calvert County was developed into residential parcels of 20 acres or less.[31] As described below, however, Calvert County has more land under protective easements than most other counties in Maryland. Average farm size actually has risen slightly over the last 25 years—it was 81 acres in 1978 and 94 acres in 2002, a 16 percent increase. Still, farms in Calvert County are small compared with the Maryland state average of 170 acres.

Figure 3.3. Farms and Farm Acreage in Calvert County, MD, 1978–2002



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

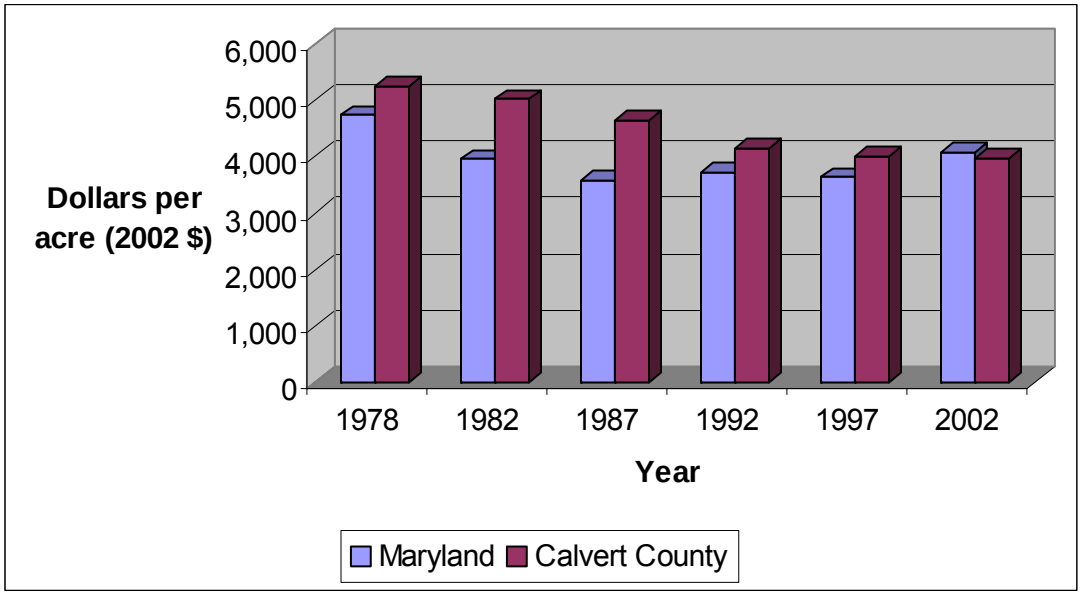
[30] The agricultural statistics in this section are from the U.S. Department of Agriculture's Census of Agriculture (http://www.nass.usda.gov/census/census02/profiles/md).

[31] As seen in Figure 3.2, the annual number of new housing units was steady or rising during the late 1990s but declined between 2002 and 2004. We do not have farmland acreage after 2002, as the Census of Agriculture is published only every five years. It is possible that farmland acreage in Calvert County has held steady since 2002; it is also possible that new housing units have declined but acreage developed has risen.

Following a similar trend in other counties, cropland acreage in Calvert County has not declined as much as total farm acreage. While farm acreage fell 42 percent between 1978 and 2002, cropland acreage fell 31 percent over the same time period. Harvested cropland fell by even less: 20 percent. In 1978, Calvert County had 16,903 acres in harvested cropland; in 2002, it had 13,546 acres. This means that a greater share of agricultural land in the county is harvested cropland than it used to be—45 percent in 2002 compared with 32 percent in 1978—and presumably less land is devoted to pastureland and woodland. This is consistent with many of the other counties in our study, including Calvert's neighbors, Charles and St. Mary's Counties.

Figure 3.4 shows the inflation-adjusted average value of agricultural land and buildings in Calvert County and in the state as a whole for the years 1978–2002. Interestingly, until 2002, the average value in Calvert was above the state average. But farmland values in Calvert County declined steadily between 1978 and 2002, while the state values rebounded somewhat in the early 1990s. The $3,980 average value per acre in Calvert County in 2002 was 24 percent below the 1978 value (in constant dollar terms) in the county. That figure is just slightly below the state average of $4,084. With rising house prices in recent years and declining farmland values, it is not surprising to see conversion of land to development in Calvert County.

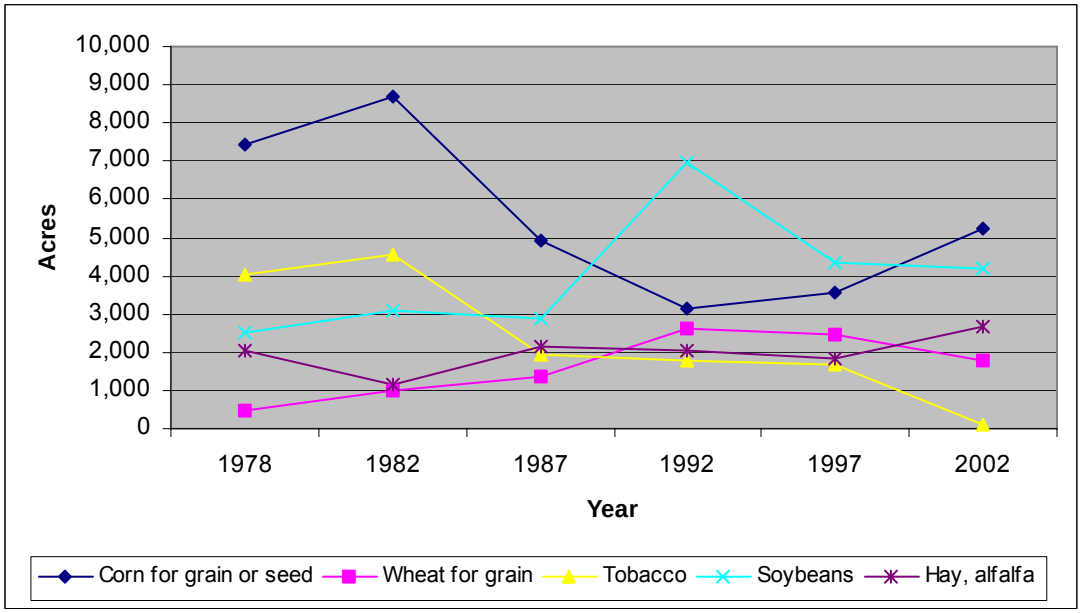
Figure 3.4. Estimated Market Value of Agricultural Land and Buildings, Calvert County, MD, 1978–2002 (inflation-adjusted $ per acre)



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

As in the rest of southern Maryland, tobacco has declined in importance in Calvert County since the state tobacco buy-out. As recently as 1997, $3.3 million was earned in tobacco sales, but by 2002, that figure had fallen to one-tenth that amount, even without an adjustment for inflation. Figure 3.5 shows the acreage devoted to selected crops in Calvert County over time. It is obvious from the graph that tobacco acreage has declined sharply. Corn acreage also declined during the 1980s but rebounded somewhat in the 1990s. Soybeans have risen in importance. Not shown on the graph is acreage in vegetables harvested for sale. While acreage devoted to these crops is small relative to other crops, it rose significantly between 1978 and 1997. Only 79 acres in Calvert County were in vegetable production in 1978; by 1997, that figure had risen to 476 acres. Acreage fell after 1997, however, with 262 acres in vegetable production in 2002. Interestingly, almost twice as much money was earned by farmers selling vegetables in 2002 than was earned on tobacco—$601,000 versus $325,000.[32]

Figure 3.5. Acreage in Selected Crops, Calvert County, MD, 1978–2002

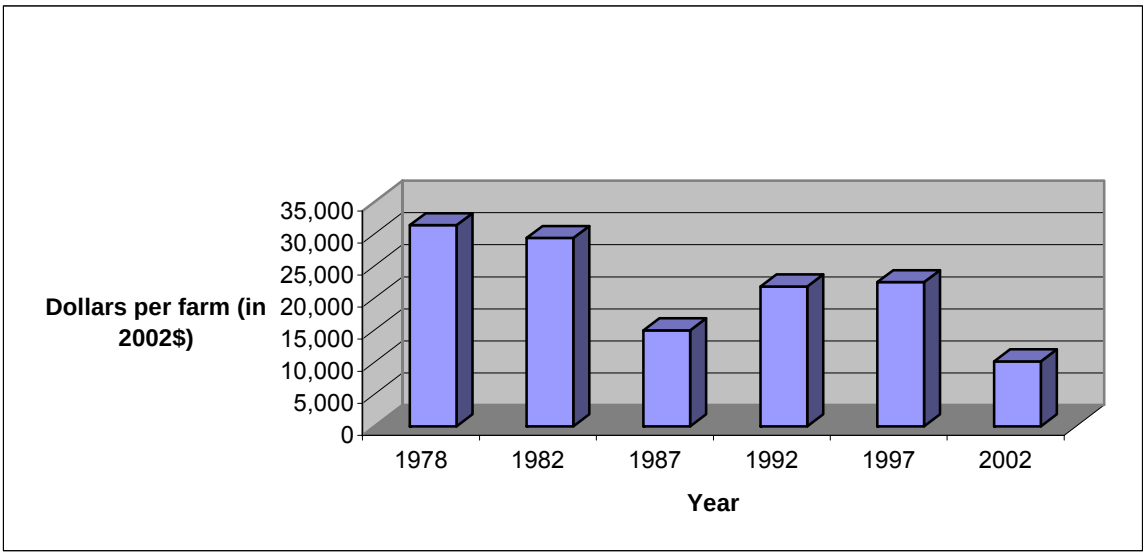


Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

[32] Unlike Montgomery County, nurseries are not a significant part of the agricultural economy in Calvert County. However, Director of Planning and Zoning Gregory Bowen claims there is a nascent interest in wineries. In addition, raising cattle is increasing, and the county has an interest in promoting eco- and agro-tourism ventures (Bowen 2006).

The market value of agricultural products in Calvert County has declined over time. Obviously, with less land in farming, total revenues from farm products are likely to have declined, but even on a per-farm basis, revenues have dropped. Figure 3.6 shows the market value of all agricultural products sold for the years 1978 through 2002 on an average per-farm basis and in constant, inflation-adjusted dollars. Average per-farm revenues have dropped from a high of $31,349 in 1978 (in 2002 dollars) to a low of just slightly more than $10,000 in 2002. As can be seen from the graph, revenues rebounded in the 1990s from a sharp drop in the 1980s, but then fell significantly between 1997 and 2002. The drop in tobacco sales undoubtedly contributed to the decline in farm revenues in Calvert County between 1997 and 2002. The decline also was due, in part, to the closing of the Archer Daniels Midland grain export pier in Baltimore in mid-2001. At the time, the facility was the last remaining grain export elevator in Baltimore and a key component of Maryland's (and some surrounding states') agricultural economy. A recent task force study concluded that after the pier closed, soybeans lost from 35 to 70 cents per bushel based on additional transportation costs to the next nearest market. The greatest impact has been in central, northeast, and southern Maryland counties—including Calvert—where producers are a long distance away from the next viable market (Maryland Department of Agriculture 2003).

Figure 3.6. Average Market Value of Agricultural Products Sold Per Farm, Calvert County, MD, 1978–2002 (in inflation-adjusted dollars)



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

Despite the very low value of farming in Calvert (with an average farm earning only $10,000 in revenues in 2002, agriculture appears to be barely viable there), the county is working hard to preserve its rural character in the face of persistent development pressures. Although the county seems to have fewer government programs to help maintain the economic viability of agriculture in comparison with some other Maryland counties, it places a great deal of emphasis on land preservation.[33] The 2004 Comprehensive Plan emphasizes the county's commitment to directing new growth away from prime farmland areas and states that the county will "continue to support the goal of permanently preserving 40,000 acres of prime farm and forestland through County, State, and federal land preservation programs" (Calvert County 2004). Approximately 22 percent of the county's land area is in agriculture, and as of August 2005, approximately 23,473 acres, or 77 percent, of this land was in a permanent easement status (Calvert County 2006; Calvert County 2004).[34] The next section discusses Calvert County's TDR program, which has contributed significantly to the preservation of farmland in the county, as well as zoning and other land-use issues in the county.

II. Zoning, TDRs, and Land Use in Calvert County

Zoning Categories and Density Limits

In 1967, Calvert County adopted its first Comprehensive Plan in which all rural land was zoned to a maximum density of one dwelling unit per three acres. In 1975, the county updated the plan to reflect a "slow growth" goal and changed the maximum density to one dwelling unit per five acres. Even with the 1:5 limit, however, there continued to be substantial population growth and conversion of land from agricultural uses to housing developments throughout the county. In response to these pressures, the county adopted a TDR program in 1978 in an attempt to protect prime farmlands from development. There was no initial down-zoning when the program was adopted; rather, the county chose to rely on the incentives provided through TDRs to preserve land.

Table 3.1 summarizes the residential density limits imposed by zoning regulations in Calvert County from the time that the TDR program was adopted in 1978 to the present. The program targeted the TDR receiving regions to include Town Centers, Residential zones, and

[33] The county government has supported the development of the Calvert County Market, a marketplace for locally grown crops.

[34] Additional acreage in forestry also is protected.

some rural areas known as Rural Community Districts (RCDs); these areas are allowed higher density development with the use of TDRs. An unusual feature of the Calvert County program is that land in the RCDs could be used as receiving or sending areas for TDRs. The remaining rural land was identified as prime farmland and became known as the Designated Agricultural Area (DAA), later changed to Farm Community Districts (FCDs) and Resource Preservation Districts (RPDs) when some additional areas were added in 1992.[35] Parcels in these prime farmland areas originally only could be used as TDR sending areas. From 1978 until a county-wide down-zoning in 1999, as can be seen from the table, the baseline zoning in all rural areas was one dwelling unit per five acres.

In 1999, due to rapid growth in the region, the entire county was down-zoned by 50 percent to reduce overall development. Density permitted with TDRs, however, remained the same as before the down-zoning. Thus, the pre-1999 maximum density levels in all areas could still be attained but only with the purchase of more TDRs. Thus, FCD/RPD areas were down-zoned to 1:10 maximum density but were allowed to be TDR receiving areas and to be built to the 1:5 pre-1999 zoning limit with the use of TDRs. Residential areas were down-zoned to 1 dwelling unit (du)/2 ac, but with the purchase of TDRs could be developed back to 1 du/ac. RCD areas were down-zoned to 1 du/10 ac, the same as FCD/RPD, but with TDRs could go to 1 du/2 ac.

In 2003, yet another 50 percent down-zoning took effect. FCD/RPD areas were changed from 1 du/10 ac baseline density to 1 du/20 ac. TDRs could be used to increase density in those areas but only to 1 du/10 ac. RCDs were also down-zoned to 1 du/20 ac; with TDRs, parcels in those zones could be developed to 1 du/4 ac density limits. Residential areas were down-zoned to 1 du/4 ac baseline and 1 du/2 ac with TDRs. As stated in the table, land within one mile of a Town Center still could be developed more densely. The 2003 zoning ordinance, therefore, set more restrictive limits across the board, both with and without TDRs. The county passed a new zoning ordinance in May 2006 but made no changes to the density limits established in the 2003 ordinance.

A little more than 40 percent of the county land area lies in the RCDs, another 40 percent is in the FCDs/RPDs, and about 16 percent lies in the Residential and Town Center zones.

[35] In the most recent rezoning, in May 2006, these areas were changed to the Farm and Forestry District (FFD).

Table 3.1. Baseline Density Limits and Density Allowed with TDRs in Calvert County, MD

	Rural		*Residential*		*Town Centers*[*]
	FCD/RPD	*Rural Community Districts*	*R-1*	*R-2*[**]	
1978-1998					
Base density	1 du/5 ac	1 du/5 ac	1 du/ac	14 du/ac	1 du/ac
Density w/TDRs	--	1 du/2.5 ac	4 du/ac	14 du/ac	14 du/ac
1999-2003					
Base density	1 du/10 ac	1 du/10 ac	1 du/2 ac	--	1 du/ac
Density w/TDRs	1 du/5 ac	1 du/2 ac[***]	1 du/ac[***]	--	14 du/ac
2003-present[****]					
Base density	1 du/20 ac	1 du/20 ac	1 du/4 ac	--	
Density w/TDRs	1 du/10 ac	1 du/4 ac[***]	1 du/2 ac[***]	--	

[*] Town Center density limits vary across the different Town Centers in the county; the limits listed in the table are representative.
[**] All residential areas have the same zoning after 1999.
[***] Density in RCD can go as high as 1 du/ac within 1 mile of a Town Center, with TDRs; density in Residential zones can go as high as 4 du/ac within 1 mile of a Town Center, with TDRs.
[****] A new zoning ordinance took effect in May 2006 but the density limits, both with and without TDRs, did not change.

Notes: The Town Center zoning classification came into effect in 1983. FCD is Farm Community District and RPD is Resource Preservation District. The FCD/RPD designations came into effect in 1992; Designated Agricultural Areas, or DAAs, were TDR sending areas before this time and the 1 du/5 ac limits applied there. In the May 2006 Comprehensive Zoning Ordinance, the county combined the FCD/RPD areas into a single designation, Farm and Forest District (FFD).

TDR Program

Calvert County's TDR program began in 1978. The first TDR was sold in 1981. Any property in the rural areas in Calvert County shown to be large enough to undertake farming activities (minimum 50 acres) and to be in active agricultural or forestry use is eligible to offer development rights for sale.[36] The property owner must first submit an application to the county to form an Agricultural Preservation District (APD). By establishing an APD, the property owner agrees to keep the land in agricultural or forest use for at least five years, over which time the owner is exempt from county property taxes. After this time, the owner may remove

[36] Properties can show that they are active in farming or forestry by registering a farm or forest management plan at the time they apply to be an APD. The 50-acre minimum is not required if the farm is located next to an already preserved farm.

the property from APD status. While in APD status, however, the landowner is eligible to certify and sell TDRs from the property at any time.

Approximately one development right is granted for each APD acre.[37] The land is not in permanent easement status as an APD but only after the first TDR is sold. Interestingly, once the first TDR is sold, the entire property is under an easement. Thus, unlike Montgomery County, where some residual development rights are retained until all TDRs are sold, no development can take place on a property in Calvert County once a single TDR is sold from that property. In a sense, this feature of the program may counterbalance the fact that the county did not down-zone sending lands at the outset of the program. In any case, it has helped the county to avoid the problem of a "super TDR" as exists in Montgomery County.

Receiving areas in Calvert County initially were negotiated on a case-by-case basis, as in Montgomery County. However, according to Planning Director Gregory Bowen, the county quickly discovered that this system did not work well at all; most cases were disputed. As a result, the county quickly changed the program to broadly designate receiving areas in several regions of the county. These include the rural RCDs and the smaller Residential and Town Center areas. The additional density allowed with TDRs in each of these regions is shown in Table 3.1. The density bonus—defined as the ratio of the additional density allowed with TDRs over the baseline density—is greater in the Residential and Town Center areas, but, as seen below, most of the demand has been in the RCDs. With the down-zonings in 1999 and 2003, the density bonuses increased. In the RCD zones, the density bonus increased from 150 percent to 400 percent in 1999, and in R-1, the bonus increased from 300 to 700 percent. This reflects the fact that developers could get back to the density levels in place before the down-zoning but had to purchase TDRs to do so. Developers are required to use five TDRs to build an additional dwelling unit in a receiving area. This feature of the program has remained the same over the years.

In the early years of the program, TDR buyers and sellers in Calvert County could obtain information only through the County Department of Planning and Zoning. Sellers were often not aware of the prices and details of other transactions. Eventually, the county government became more involved in the market in several ways. First, it provided information for market participants through a quarterly newsletter with details about transactions, prices,

[37] Some adjustments are made for residences currently located on the property, for grandfathered lots, and for environmentally sensitive areas.

and preserved properties. Second, the county government began to participate directly in the TDR market by buying and retiring TDRs. The "Purchase and Retire" (PAR) program began in 1993, when the government wanted to increase the amount of preserved land in the county. Under this program, the county announces at the beginning of the year the price at which it will purchase development rights, thus providing further information to the private TDR market. In 2001, the county began a "Leverage and Retire" (LAR) program in which landowners who sell their development rights to the county receive tax-free interest payments over a 15-year period and are paid the principal at the end of the 15 years.[38] The Calvert County program probably is best thought of as a combined TDR/PDR program; in earlier work, we have argued that this is probably a large reason for its success in terms of number of development rights sold and acres of land preserved (Kopits, McConnell, and Walls 2003).

Program Results

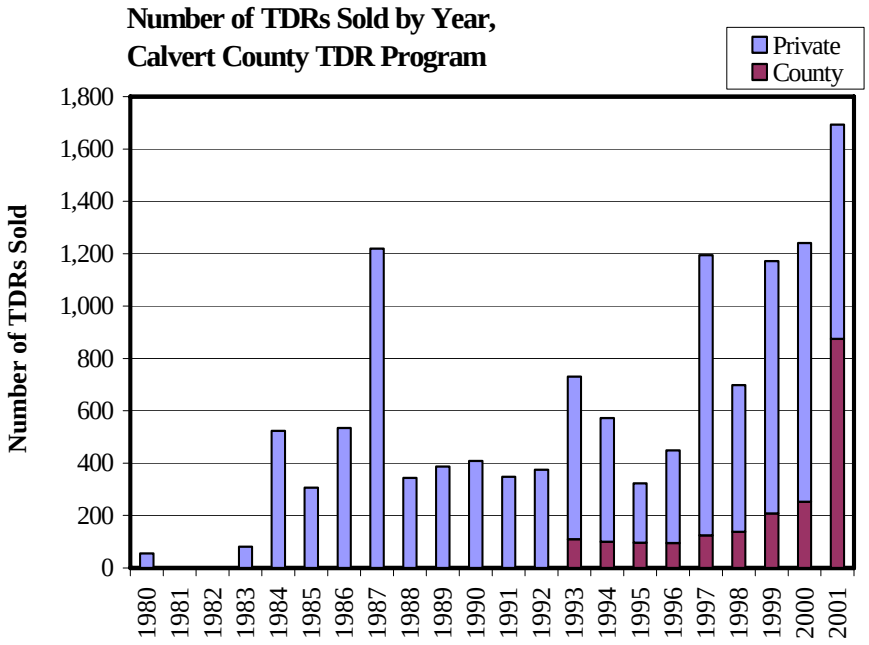
Calvert County has a very successful TDR program in terms of acres of land preserved. According to Calvert County (2006), 11,652 acres had been preserved by August 2005 through the sale of TDRs, making the Calvert TDR program one of the most successful of all TDR programs in the United States. When combined with the county's purchase of development rights programs (PAR and LAR), and the state MALPF, Rural Legacy, and MET programs, a total of 23,473 acres of farm and forest lands are in a permanent easement status in Calvert County. This puts the county more than halfway toward its goal of 40,000 acres of preserved land. It also means that 17 percent of the county's total land area is protected from development.

Figure 3.7, from a detailed study of the Calvert County program by McConnell, Kopits, and Walls (2006), shows the number of TDRs sold since the program's inception, including both sales to private buyers and sales to the county government through the PAR and LAR programs. There were few sales in the early years of the program and then large fluctuations in sales through the latter part of the 1980s.[39]

[38] See American Farmland Trust (1999) for more on "installment purchase agreements" like the LAR program.

[39] Annual TDR sales and acres preserved in each year are not the same. This is because when a property enters the TDR program and sells even one TDR, the entire property is permanently preserved. The remaining TDRs may then be sold over time as the owner chooses.

Figure 3.7. TDR Sales in Calvert County, MD, 1980–2001

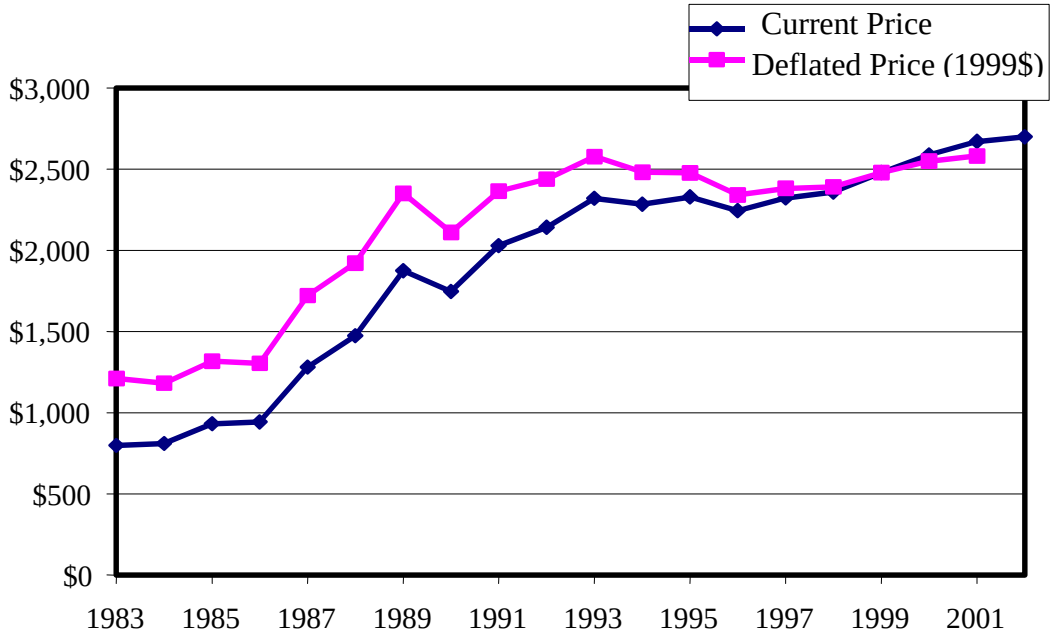


Source: McConnell, Kopits, and Walls, 2006.

Figure 3.8 shows the trend in the average TDR sales price, in inflation-adjusted terms, for all transactions from 1983 to 2001. From 1983 to 2001, the average real price rose by 6.3 percent per year, but most of the increase occurred in the first decade of the program. Between 1983 and 1993, the average real price more than doubled, rising from $1,211 (in 1999 dollars) to $2,578. Between 1993 and 2001, however, real prices remained relatively constant. The average real TDR price in 2001 was $2,582, virtually the same as it was in 1993. Since the McConnell, Kopits, and Walls (2006) study was completed, TDR prices have again risen. Bowen (2006) reports that in May 2006, TDR prices in private sales were ranging between $6,500 and $7,500.[40] The down-zonings in 1999 and 2003, which increased demand for TDRs, are probably responsible, at least in part, for the rise in prices.

[40] Bowen reported that the county is offering $9,000 through its PAR program.

Figure 3.8. Average Annual TDR Prices, Calvert County, MD, TDR Program, 1983–2001



Source: McConnell, Kopits, and Walls, 2006.

The variance in prices has decreased over time in Calvert County, which is a sign that the TDR market is operating more efficiently than in the early years. In 1999, for example, the minimum and maximum TDR prices were $2,200 and $2,800, respectively, and 50 percent of all transactions in that year occurred at prices between $2,400 and $2,600. In 1990, the range was much greater: 50 percent of all transactions occurred at prices between $1,209 and $2,780 (in 1999 dollars). The increased price stability occurred at the same time that the county government became a direct participant in the TDR market. The county purchase price has remained relatively constant over time, rising by small amounts at periodic intervals from $2,350 per TDR in 1993 to $2,700 in 2002.[41] The information provided to the market by the announced county purchases probably helped to maintain a pattern of gradually rising prices over time and relative price stability. This provides more certainty to both buyers and sellers about market prices and, therefore, more willingness to participate.

[41] Occasionally, for certain sales, the price will vary slightly from the Board of County Commissioners' stated price. Also, prices paid in the LAR program, which started in 2001, sometimes have a 10 percent bonus as an additional inducement for landowners to enroll; in five sales in 2001, for example, prices ranged from $2730 to $2990.

As discussed above, although the county has broad areas targeted for preservation and development, Calvert County's program allows flexibility to landowners in most of the rural areas. This feature of the Calvert County program has received criticism from some quarters. Some observers argue that receiving areas should be limited to established residential areas and Town Centers in an effort to channel development to areas with existing infrastructure. Moreover, farm advocates have worried about fragmentation of land in rural areas because some landowners will develop and some will stay in agriculture.

Since market prices for land reflect potential returns to both uses, the market in Calvert County is allowed to sort out which individual parcels should be developed and which should be preserved. Thus, it is interesting to look at the spatial patterns of land development and preservation that take place in this setting. Using GIS software, McConnell, Kopits, and Walls (2006) located all APDs, preserved properties, and subdivisions recorded between 1980 and 2001. In Figure 3.9, we show the properties overlaid on a zoning map. The green area shows permanently preserved acreage and light green is land that is in APD status but has not yet sold TDRs.[42] Areas shaded red are subdivisions that used TDRs for additional development. These outcomes are overlaid on the zoning: yellow and orange areas are Town Centers and Residential zones, respectively; purple is Commercial/Industrial zones; white is the RCDs; and the hashed areas outlined in blue are the FCDs/RPDs.

There are several observations we draw from Figure 3.9. First, most properties that have entered the APD program lie within the FCD and RPD regions—the areas targeted for preservation. Although some green areas are within the RCDs, 79 percent of all preserved acreage (medium green) and 73 percent of remaining APD acreage (light green) lie in FCD and RPD zones. Second, up to 1999, the receiving areas could be in Residential zones, Town Centers, and RCDs, but the map shows that TDRs were used almost exclusively in the RCDs. This is not, however, because residential areas are completely built out. McConnell, Walls, and Kopits (2006) show that development occurs across the board, including the Residential and Town Center zones. But existing zoning limits of one unit per acre (pre-1999) appear to satisfy the demand for density in those areas.[43] Third, as we would expect, most development has occurred

[42] As in Figure 2, yellow and orange are Town Centers and Residential zones (R-1/R-2), respectively, and purple are Commercial/Industrial zones. Areas shown in dark green are lands that have been preserved under state, federal, and private conservation programs, as well as county and state parkland.

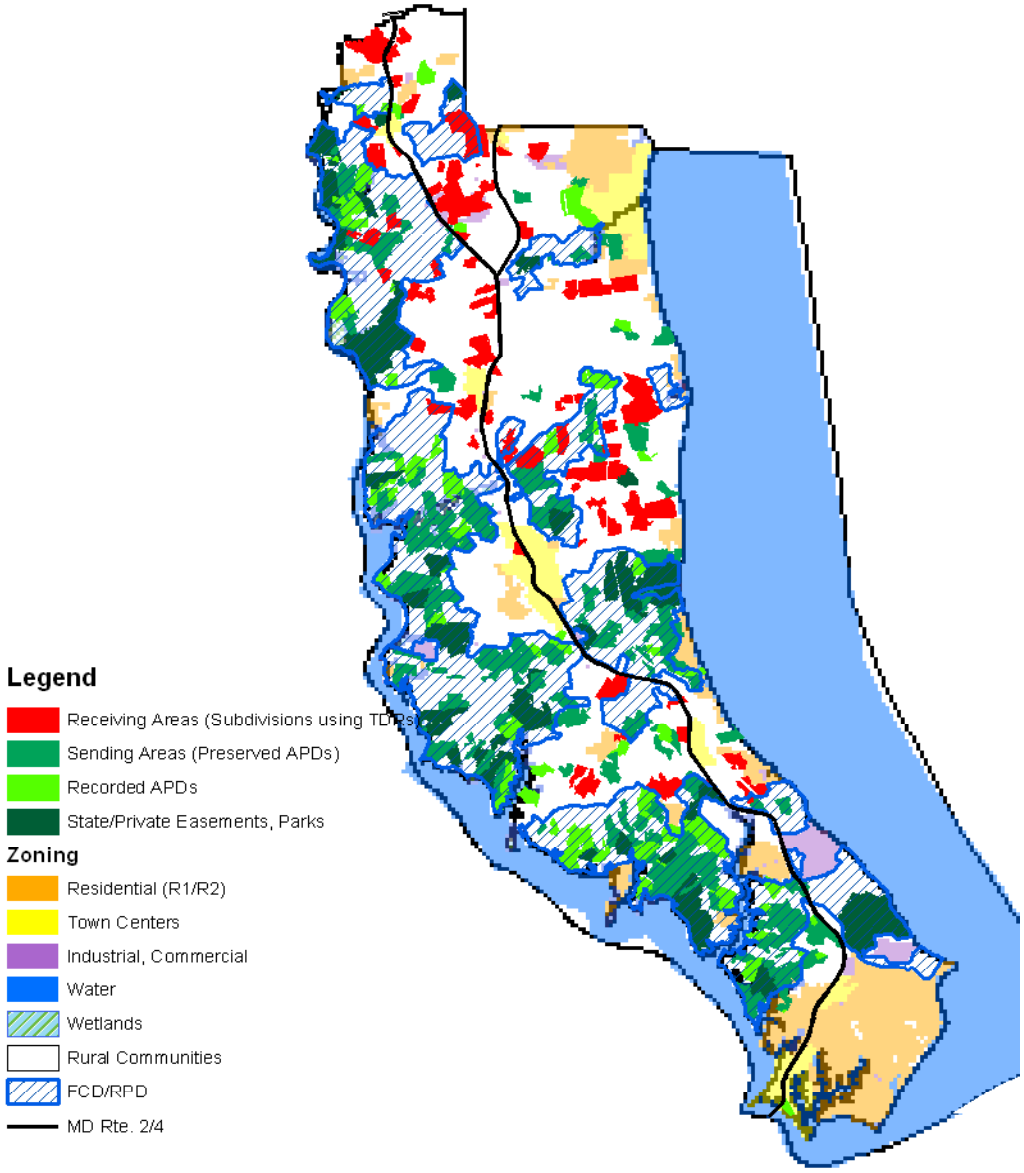
[43] When the county was down-zoned in 1999, the baseline zoning in residential areas became one house on two acres, and demand for TDRs did increase.

in the northern area of the county, and this region has seen the most use of TDRs. Most preserved acreage lies in the central and southern parts of the county; in fact, the earliest farms to enter the program were those in the more southern region.[44] All of these outcomes are expected given the relative differences in land values. Finally, it is important to note that the TDR program has not prohibited development in the FCD and RPD areas. Although not shown on the map, some subdivisions have gone into the FCD/RPD areas. Until 1999, the density limits there allowed one house per five acres and some farms were converted to subdivisions. As we will explain below, development of these regions has slowed dramatically in recent years.

We can look at Figure 3.9 and get some sense of whether rural lands are fragmented because of the TDR program, though we cannot address that question quantitatively with the map. There are many areas of the county covered in green—that is, where substantial continuous acreage is preserved from development. However, the program also has resulted in some development occurring in prime farmland regions and even adjacent to preserved areas. As stated above, much of the development has occurred in the RCDs. But it is difficult to pass judgment on the outcomes of the program without a counterfactual that tells us what development patterns would have been in the absence of a TDR program or with a TDR program that limited receiving areas to Residential and Town Center zones. The county's stated goal is 40,000 acres of preserved land and it has targeted prime farmland in the RPDs and FCDs; in terms of these goals, it is doing a good job. The TDR program has not channeled development exclusively to Residential zones, but it is difficult to know what land-use tools could have accomplished this objective in Calvert County or other counties. A great deal of development was going into the RCD in the northern region of the county prior to the introduction of TDRs, and that development has continued. With TDRs, the development that has occurred in Calvert County has been at a higher density, on average, than without the TDR program, and more land has been preserved in agricultural uses.

[44] Levinsohn (1997) points out that this is a potential flaw in TDR programs: if this land would have remained undeveloped even without the TDR program, then the development rights used from those properties have led to more development than otherwise would have occurred.

Figure 3.9. Sending and Receiving Areas, Calvert County, MD, TDR Program, 1980–2001



It is also interesting to observe what has occurred in Calvert County in the past few years. Before the 1999 down-zoning, only 8 percent of new subdivisions in the Residential and Town Center zones used TDRs; between 1999 and 2002, 57 percent used TDRs. TDR use for development has increased greatly across the board with the 1999 and 2003 down-zonings. According to Calvert County Director of Planning and Zoning Greg Bowen, these down-zonings and the changes in the relative density bonuses in the different areas have reduced building in the FCDs/RPDs. In 2005, only one percent of all new lots recorded were in the FCDs/RPDs, an area of 57,000 acres or roughly 40 percent of the county land area (Bowen 2006). The down-zonings and program changes also probably were responsible for keeping TDR prices high and, likewise, house prices.

III. Conclusion

Calvert County's TDR program is an interesting one that has evolved over time. The program clearly is more successful than most—the TDR market is robust, with a substantial number of development rights bought and sold each year, and a significant amount of farmland acreage has been preserved. Although there are many other aspects of TDR programs that one must look at to determine success or failure, it is certainly a prerequisite that the market be well-functioning. If no TDRs are bought and sold, the program cannot work. In our view, there are several reasons why Calvert County's market has worked well.

- The fact that receiving areas are broadly designated and use of TDRs is "by right" in the county—no special approval by the Board of County Commissioners is required—tends to ward off complaints from existing residents over additional density.
- Like it or not, the fact that the RCDs are a receiving area bolstered demand for TDRs. Many TDR programs around the country have willing sellers who cannot find buyers for their development rights; this is not the case in Calvert County.
- The county has played an active role in providing information about the program and in participating directly in the market to purchase and retire development rights. Our earlier analysis of individual TDR sales data showed clearly that prices stabilized when the county began to participate in the market. Stable prices are critical to a well-functioning program.
- The down-zonings and changes in density bonuses that allowed developers to get back to pre-down-zoning density limits by purchasing TDRs were very successful in

bolstering demand. Also, because the down-zonings were across the board, the county avoided creating winners and losers.

As explained above, a significant amount of farm and forest acreage has been preserved from development in Calvert County. One key reason, in addition to the healthy TDR market that we just described, is a unique program design feature: when the first TDR is sold from a property, the entire acreage of the property is placed under a conservation easement. Calvert County is sometimes criticized for not having initially down-zoned its agricultural land (though they have down-zoned quite dramatically in recent years), but this feature of the program has led to significantly higher levels of preserved acreage than would otherwise be the case. This also means that Calvert County is avoiding the problem currently facing Montgomery County that the remaining development rights on many properties are highly valuable and thus difficult to retire.

Calvert County's Planning Director Greg Bowen sees another virtue of the TDR program there: the county can use TDRs as leverage to obtain other land-use and development objectives. For example, developers may be permitted density beyond zoning limits without the use of TDRs if they are building affordable or senior housing. Thus, dropping the TDR requirement is used as an incentive to obtain specific kinds of housing that the county deems desirable. Because landowners and developers in the county are so accustomed to TDRs and the market functions so well there, this ancillary benefit from TDRs can be realized in Calvert County; this may not be the case in many locations.

As noted above, the greatest criticism of the Calvert County program usually is directed at the fact that TDRs can be used in rural receiving areas. Our view is that this aspect of the program probably is a big reason why TDRs are widely used in Calvert County and nearly 12,000 acres of farmland have been preserved. An analysis of development in the county over the past 35 years indicates that it is unlikely that the program would have worked as well if receiving areas had been limited to Town Centers and Residential zones. When the county set up its TDR program, it felt that down-zoning the rural areas was infeasible—the same situation that St. Mary's County considers itself in today—and essentially made a trade-off: "sacrifice" some rural areas to permanently preserve land in other areas. Without the counterfactual, it is difficult to evaluate the land-use outcomes in the county. If receiving areas had been limited to Town Centers and Residential zones, it is quite possible that there would have been very little demand for TDRs and that development would have continued at baseline density limits in all of the rural areas. In fact, we believe that this would have been the outcome.

Interestingly, in 2006 the tide started to turn in Calvert County. Because of the recent down-zonings, TDRs are being used more in the Residential and Town Center areas and development of the FCD/RPD areas has declined sharply. It will be fascinating to observe the patterns of land preservation and development in the county in the coming years.

Chapter 4: Charles County

I. Overview of the County

Charles County is in central Maryland, 30 miles south of the Washington, DC, metropolitan area and bordering on the Potomac River. It has a land area of 294,000 acres and had a population of about 138,000 in 2005. The county has experienced population growth of about 60 percent over the past few decades, slower than only three other counties in Maryland: Calvert, Frederick, and Howard. Like many counties in the state, it has felt the pressures of rapid growth and the intense competition for land use that growth creates.

Charles County is often grouped with Calvert and St. Mary's Counties as part of the southern Maryland region on the west side of the Chesapeake Bay. Both Calvert and St. Mary's are also part of this analysis of TDRs, and they share many similarities with Charles County. Charles County had median household income of $65,995 in 2003, which slightly lower than the median income Calvert County and a bit higher than St. Mary's County. Charles also is much larger in area than either Calvert or St. Mary's Counties; in fact, it is one of the largest counties in the state. The northern area of the county is within relatively easy commuting distance of metropolitan Washington, DC. However, a large area to the south and west has large forested areas and is relatively undeveloped and more remote from the metropolitan area.

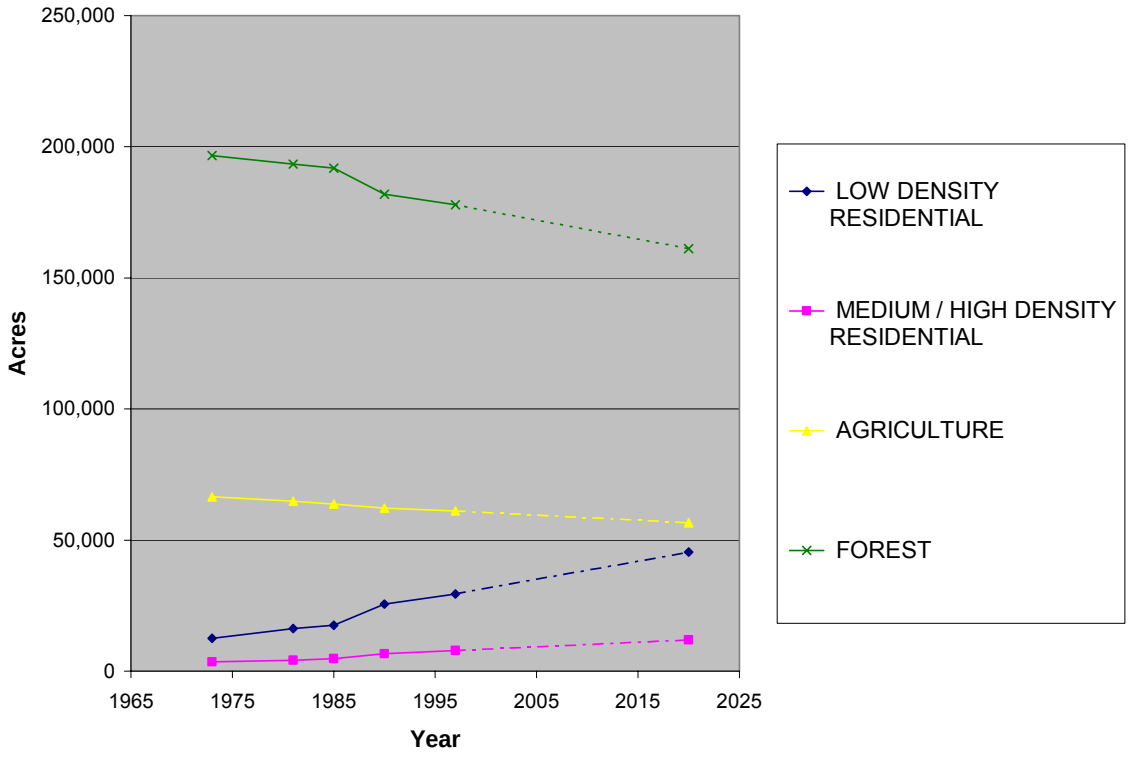
The agricultural sectors of the three southern counties are similar in many ways. They all had agricultural economies that were heavily dependent on the tobacco industry, and their local economies will be affected by the tobacco buy-out which began in 2000 and will continue for ten years.[45]

Charles County has established a goal of preserving about 64,000 acres in agriculture, natural resource and forest uses and would like to direct development toward a Development District that is primarily in the northern and eastern parts of the county. The TDR program was intended to be a major contributor to these goals. But to date the program has been a disappointment, with only about 2,000 acres preserved.

[45] The buy-out will continue with annual payments to farmers not to produce until 2010.

Figure 4.1 shows the satellite data collected by the state of Maryland that indicates broad trends in land uses by county. It is clear that there is forest cover over a large part of the Charles County landscape. One study finds that the county is 60 percent wooded, making it among the most forested counties in the state (Irland 2004). Land in agriculture has fallen slightly over time, as land area for residential uses has increased. Land area in low-density residential (which the state defines as 3.5 houses to the acre or less) has been rising the fastest over time. However, forest cover and agricultural areas are forecast to continue to cover more than two-thirds of the land area well into the mid part of this century. The county would like to ensure that a share of this land is permanently protected and would like to direct the development that does occur into areas that can support development.

Figure 4.1. Land-Use Trends in Charles County, MD, with Forecast to 2025



Source: Maryland Department of Planning; Land Use Land Cover in Maryland.

Evidence on the Amount, Type, and Location of Development

This section summarizes the amount of development approved in the county using data provided by the planning department on each subdivision, its size and number of lots, and location and zoning designation. The data available cover subdivisions approved for development between 1992 and 2005. They vary in size between 1 lot and 1,673 lots and between 5 acres and 1,287 acres.[46]

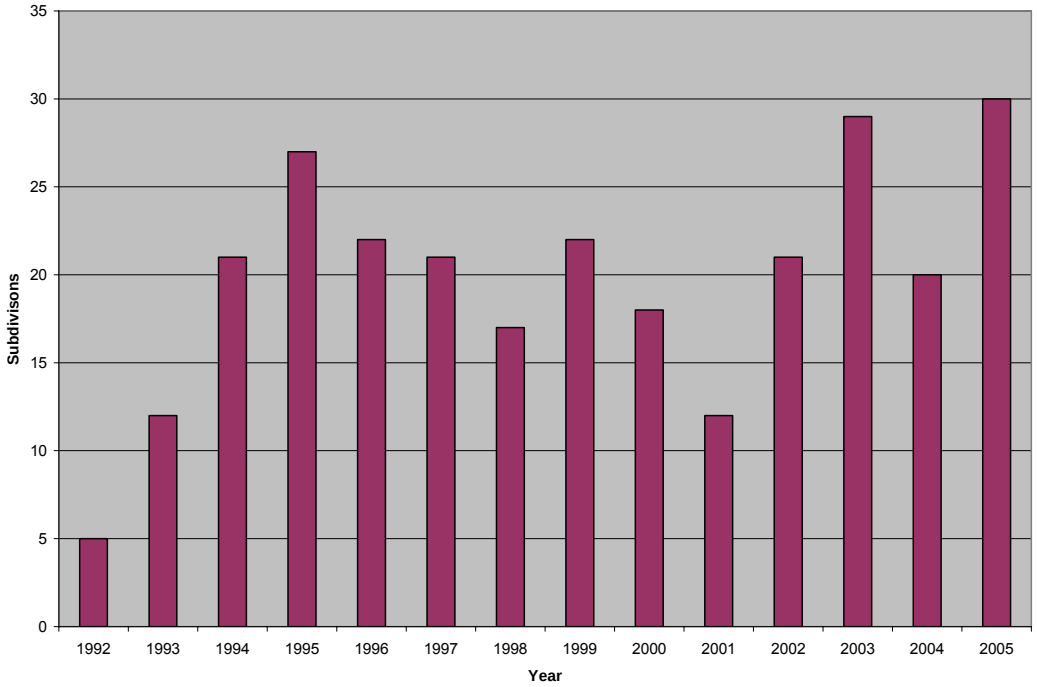
Figures 4.2 and 4.3 show the number of subdivisions and the number of total lots approved in those subdivisions in each year. The number of subdivisions was down slightly (except in 1999) in the late 1990s period, but trended upward in recent years. However, the pattern on the total number of lots is very different. The number of lots is driven by the size of the subdivision. Total lots approved were highest in 1994 due to a number of large subdivisions approved that year, including a planned unit development[47] with about 1,600 units. There tended to be smaller subdivisions through the late 1990s, with only a small number of very small subdivisions approved in 1998. There have been more large subdivisions in recent years. As Figure 4.3 shows, more than 4,000 lots have been approved since 2003. It is important to note that these figures show the subdivisions or the lots in the year the subdivision was approved, not the year the building occurred. Often, the actual building takes place over several years after approval.

The goal of the county's development plan is to direct much of the growth toward what it has identified as the Development District. This encompasses most of the area around the major urban areas of the northern county—Waldorf and LaPlata—that are zoned for residential use. How much of the development over the last 12 years has gone in these areas? Figure 4.4 shows that most of the lots approved have been in the Development District and that a relatively larger share has gone into the Development District over time.

[46] The file provided by the county includes all subdivisions that submitted a preliminary plan to the county. The data on each subdivision includes lots approved in the preliminary plan but does not indicate when lots were actually built.

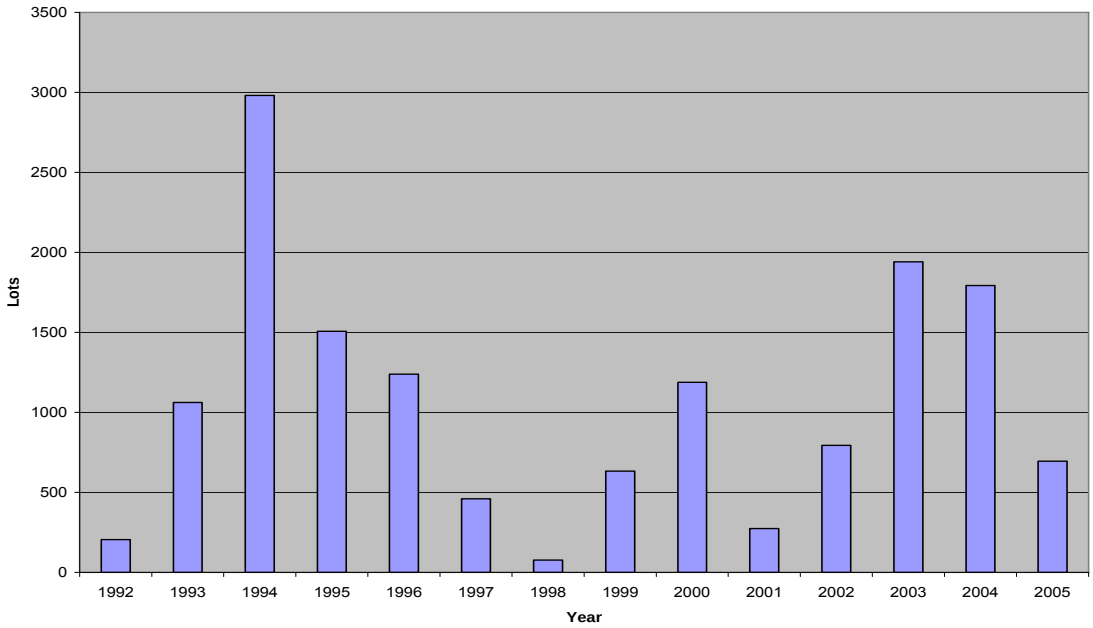
[47] A planned unit development is a large development that includes both residential and commercial properties and has a variety of residential densities.

Figure 4.2. Number of Approved Subdivisions, Charles County, MD, 1992–2005



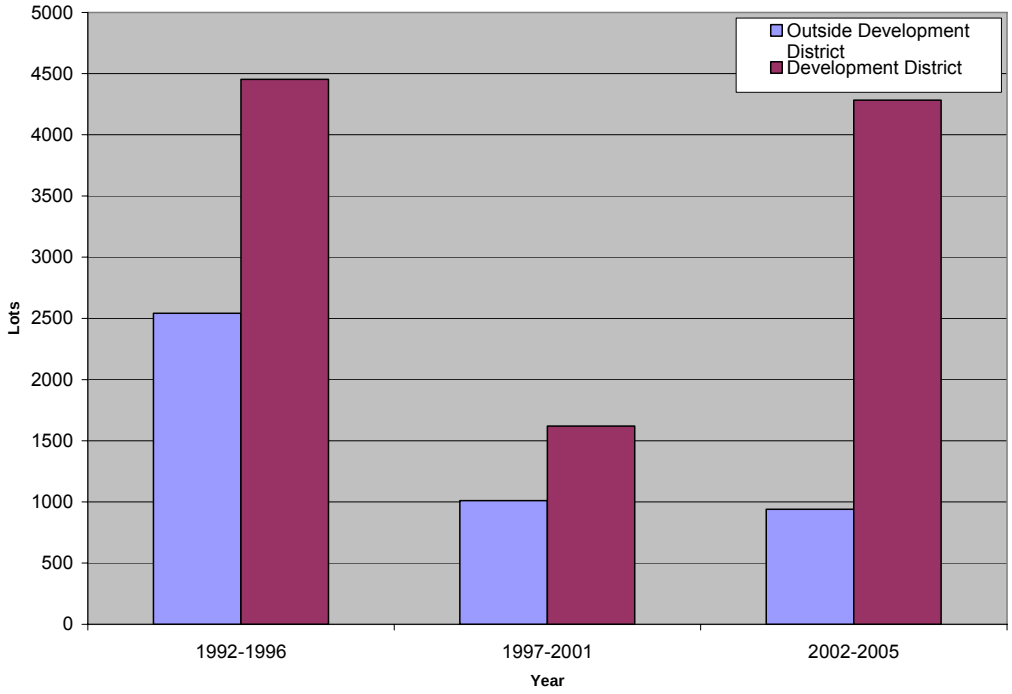
Source: Based on subdivision data from Charles County Department of Planning

Figure 4.3. Number of Lots in Approved Subdivisions, Charles County, MD, 1992–2005



Source: Based on subdivision data from Charles County Department of Planning

Figure 4.4. Lots Approved in Subdivisions, Inside and Outside of the Development District, Charles County, MD, 1992–2005



Source: Based on subdivision data from Charles County Department of Planning

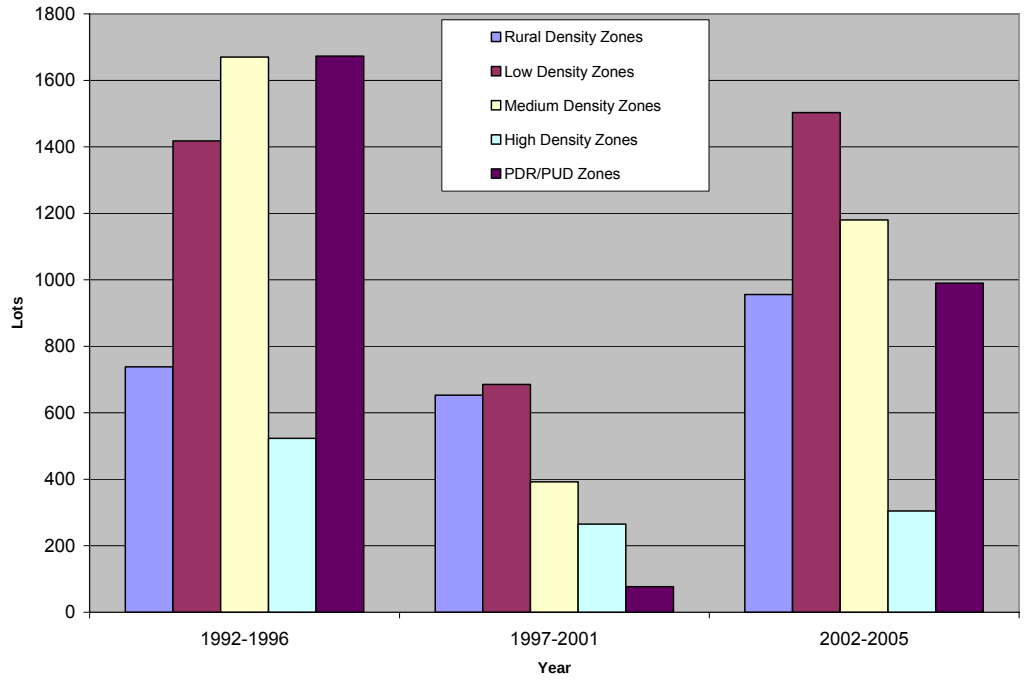
We explore this issue in more detail by looking at the number of units in different zoning areas in the rural area and within different zoning regions of the Development District. Figure 4.5 shows the number of approved lots in the rural areas (in the agricultural conservation areas and the rural conservation areas) and in four different types of residentially zoned areas. The four are low-density residential (one house per acre), medium-density residential (three houses per acre), high-density residential (five houses per acre), and planned unit developments (PUDs) (mixed use with some residential of different densities and commercial uses).

The number of lots approved has been greatest in the low-density and medium-density categories, with very few high-density units built. However, Figure 4.6 shows that the number of subdivisions has been the highest for the rural and agricultural areas, where there are a lot of very small (one to five unit) developments. What is most interesting is Figure 4.7, which shows that the acreage taken for development in the rural and agricultural areas is quite high. Even though there are more low-density lots, more land is taken up by

the rural developments. What emerges is that while much of the housing is being built in the development district, there still is a substantial amount of small subdivision approval in the rural areas, with large lots and the associated land conversion. The Rural Commission in Charles County found that in 2000, about 37 percent of the county's housing stock was in the rural areas of the county (Report of the Charles County Rural Commission 2003).

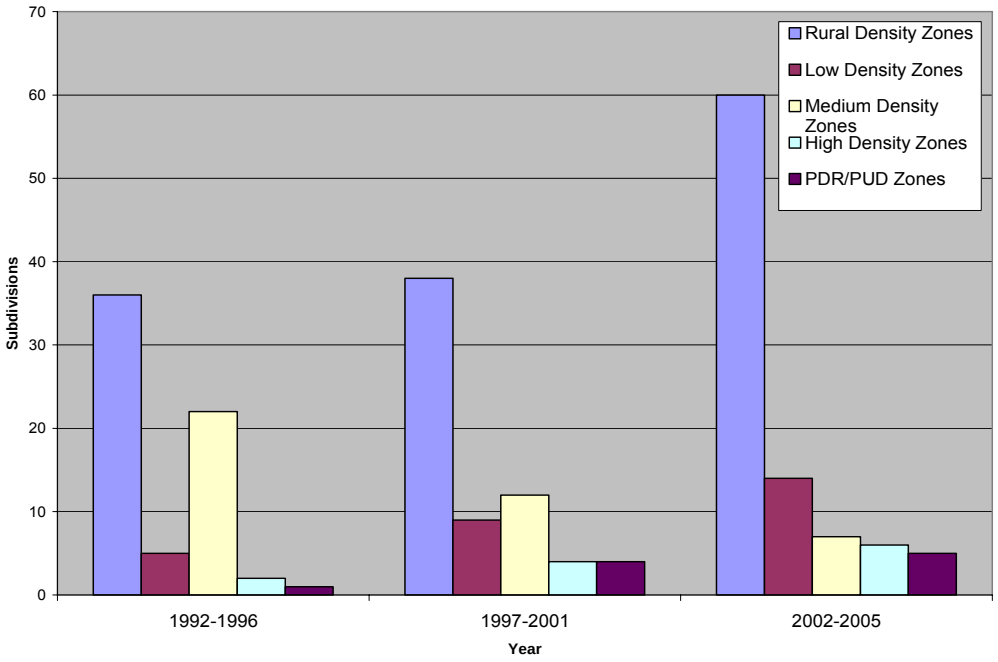
Average lot size can be calculated a number of different ways. In Figure 4.8 we show the total number of lots divided by total acres in subdivision developments in each year, or average lots per acre across the whole county. The number of lots per acre is trending down over time, but we there is substantial variation depending on the type and timing of the large subdivisions.

Figure 4.5. Number of Lots Approved by Zoning Category and Time Period, Charles County, MD



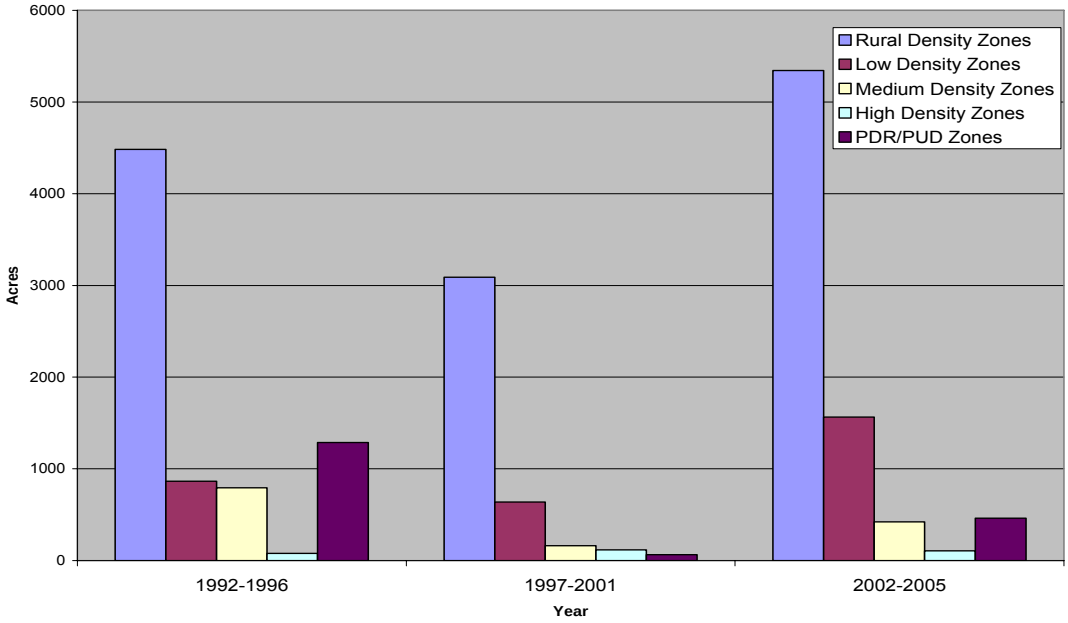
Source: Based on subdivision data from Charles County Department of Planning

Figure 4.6. Number of Subdivisions, by Zoning Category and Time Period, Charles County, MD



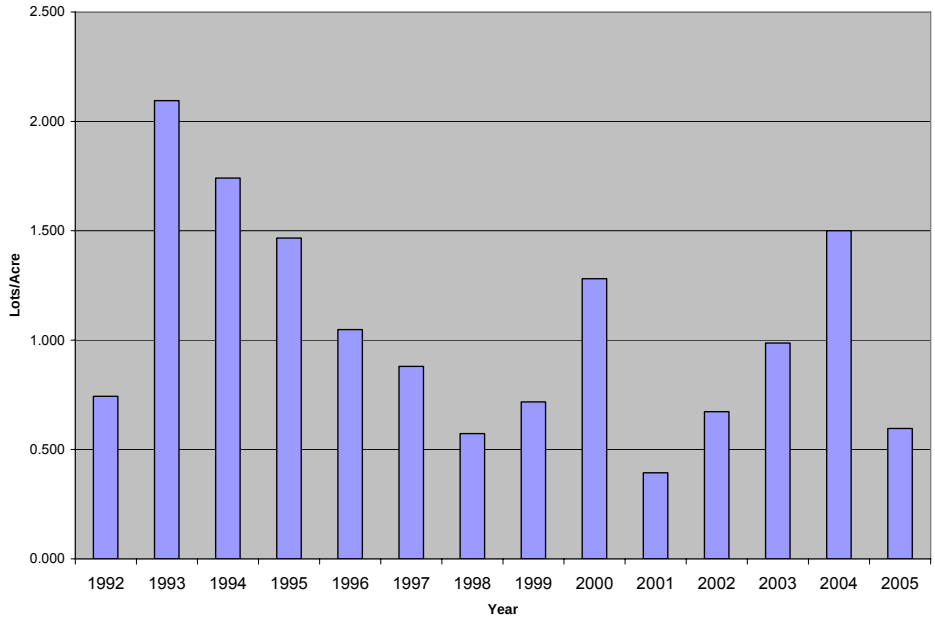
Source: Based on subdivision data from Charles County Department of Planning

Figure 4.7. Total Acreage of Subdivisions Approved for Development, by Zoning Category and Time Period, Charles County, MD



Source: Based on subdivision data from Charles County Department of Planning

Figure 4.8. Lots Per Acre Averaged across All Subdivisions, Charles County, MD, by Year, 1992–2005

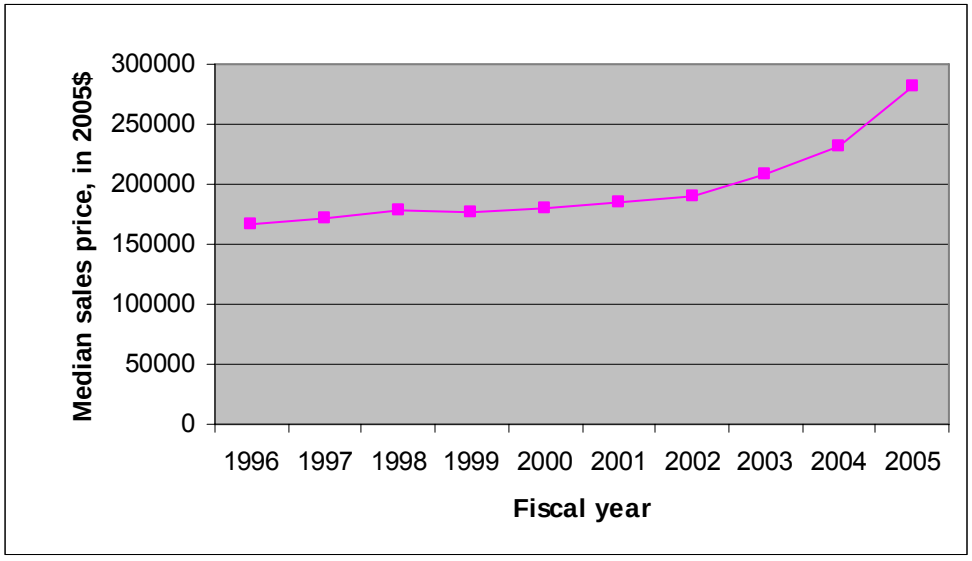


Source: Based on subdivision data from Charles County Department of Planning

Housing Prices

Figure 4.0 shows the trends in housing prices in the County since 1996, in constant dollars (accounting for the general economy wide changes in prices over this period). Housing prices in Charles County are relatively high compared to the average for the state, and like many of the counties in the state, they have been rising rapidly over the last few years. The median price of a single-family owner-occupied house in 2005 was $282,000, just slightly lower than house prices in Calvert County and a bit higher than those in St. Mary's County to the south (there the median house price is $250,000). The price of housing in Charles County as been increasing rapidly, at about 13 percent a year, for the past five years.

Figure 4.9. Median Sales Price of Owner-Occupied Housing, Charles County, MD, 1996–2005



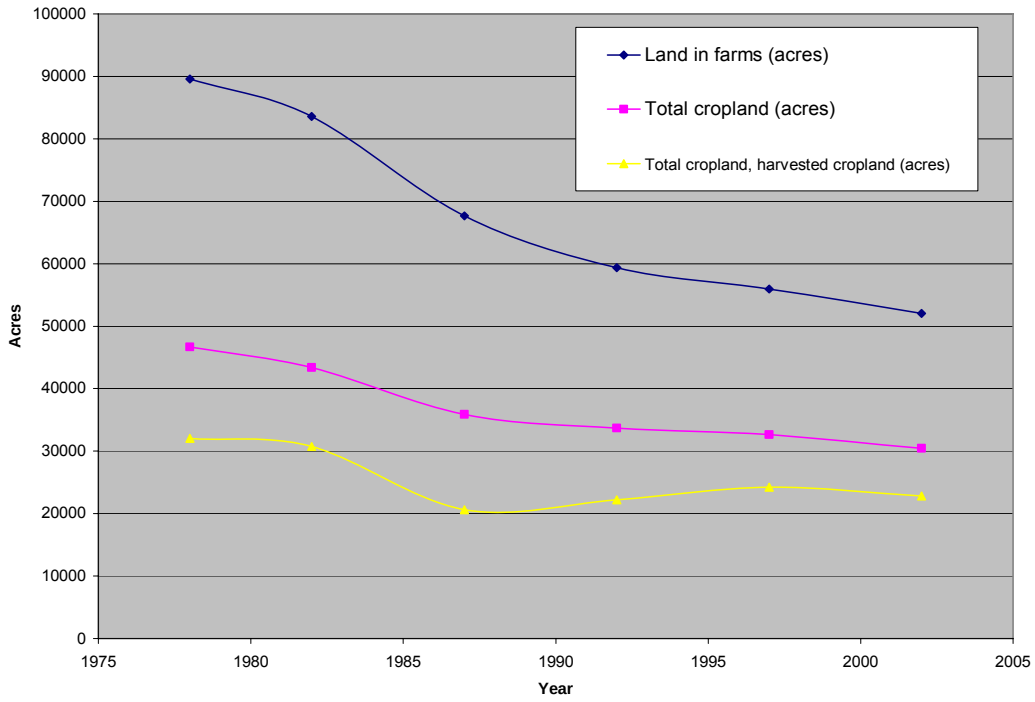
Source: Maryland State Department of Assessments and Taxation.

Agricultural Sector

Like many other counties in Maryland, Charles County has seen a decline in both the number of farms and the amount of land in farming. As figure 4.10 shows, land in farming has declined from more than 90,000 acres to about 50,000 acres. The decline has been both in acres in cropland and acres in animal farming and pastureland, although the amount of harvested cropland has remained relatively stable since the late 1980s.

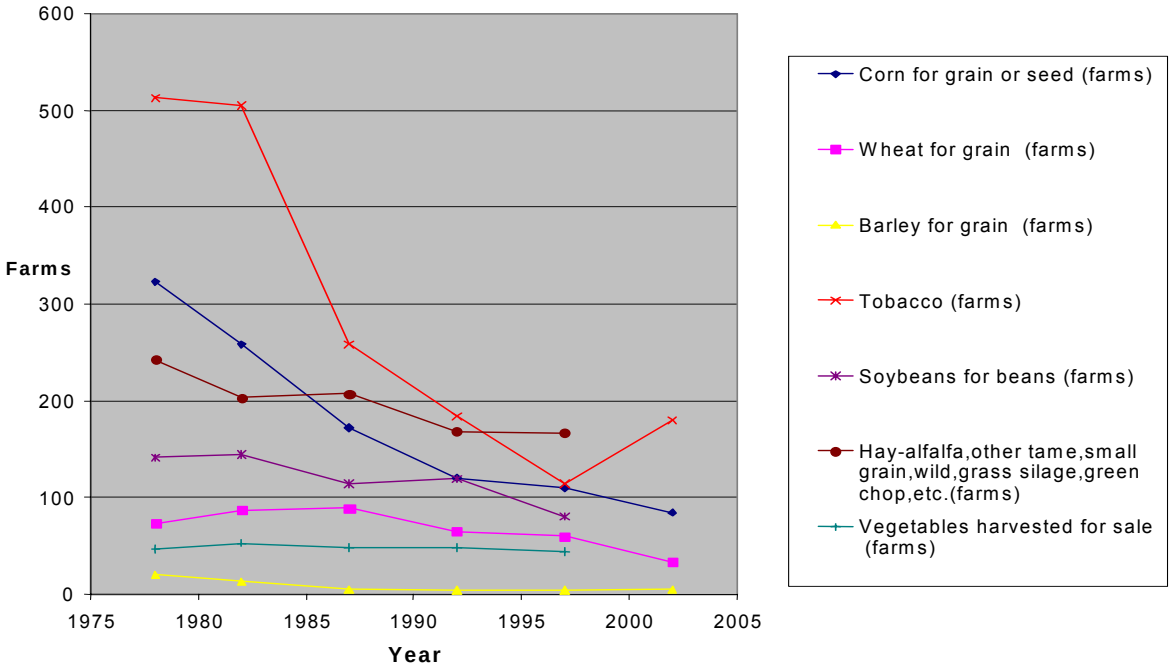
Figure 4.11 shows changes in the types of crops. Charles County, like others in southern Maryland, has been strongly affected by the decline of the tobacco industry and the tobacco buy-out. In 2000, Maryland began the state-funded buy-out of all of its tobacco suppliers. Tobacco producers who cease production will get an annuity over a 10-year period. Tobacco farmers are in the middle of this buyout now and that allows many of them to stay in operation despite low returns to many crops. There is no crop that appears to be ready to take the place of tobacco, although there is some evidence that farmers are turning more to greenhouse and nursery products (Report of the Charles County Rural Commission 2002). However, it is clear from Figure 4.11 that production of traditional crops, such as corn and soybean, has declined dramatically in recent years, and the long-term prospects for the agricultural sector in the county are still in question.

Figure 4.10. Land in Farms and Land in Cropland, Charles County, MD, 1975–2002



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

Figure 4.11. Number of Farms by Agricultural Product, Charles County, MD, 1975–2002

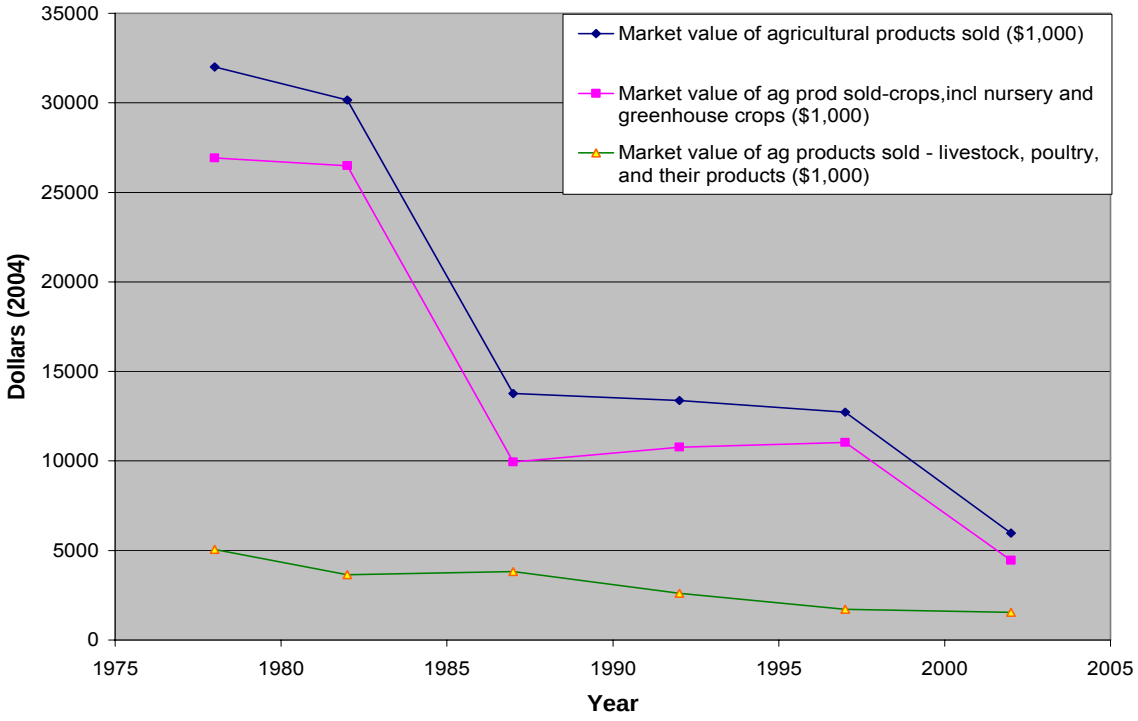


Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

One area of the rural sector that appears to be more robust is the forest industry. A large share of the land area of the county is in forests—in 1999, forest cover in Charles County was as much as 197,000 acres.

Average per farm net income from agricultural sales in the county has been falling. In 2002, it was about $200 per year per farm (U.S. Department of Agriculture, Statistics Service 2002). Figure 4.12 shows the decline in the real market value of agricultural products sold over the past 30 years. The biggest declines came in the mid 1980s and again in the late 1990s with the tobacco buy-out.

Figure 4.12. Market Value of Agricultural Products Sold in Charles County, MD, 1975–2002 ($2004)



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005.

II. TDR Program

The TDR program was established in Charles County in 1992 and began operation in 1993. The primary goal of the program is to preserve working rural lands. The 1997 Comprehensive Plan for the county states the goals for the rural areas: "The overall vision for community character in the Rural Areas is to preserve character in an economically sustainable

manner. This means preserving agricultural, forested, marsh and waterfront landscape, protecting important views, scenic vistas and references to county history and culture, and maintaining and enhancing rural villages."

The county goal, established by the county's Agricultural Land Preservation Board, is to eventually preserve 64,000 acres of rural lands out of a total acreage in the county of about 294,000 acres. The TDR program was established as the primary way to do this. The preserved land could be in both productive farmland and in managed forested land. The TDR program started in 1993, but there were no sales of TDRs until 1995 and no use of TDRs in the development district until 1999. The TDR program allows sending areas with agricultural and rural zoning, which is the majority of the county, to sell development rights to areas zoned for residential uses, the Development District.

Sending areas. The county has elected to require that the sending properties qualify under the state's MALPF program before they are eligible to sell TDRs. MALPF requires that a property be enrolled as an Agricultural Preservation District (APD), for which the requirements are relatively strict. Properties generally must be 50 acres or larger and have high quality agricultural soils.[48]

A property owner who is enrolled in MALPF can then apply to have TDRs certified by the county. Each qualifying parcel of land can certify one TDR for three acres of eligible land. This was based on the fact that the zoning in the agricultural and rural conservation districts was a maximum of one house on three acres. Once a single TDR is sold from the property, the entire property is restricted to be in agricultural use and is not eligible for development through a covenant with the county (this is similar to the Calvert County program; see Chapter 2). A landowner may sell only some of the TDRs from the property at any one time and hold on to others for sale at a later date. But in any case, the entire property is preserved in farming uses by a covenant with the county. As the TDRs are used to increase density elsewhere over time, they are conveyed to the Charles County Commissioners and retired.

Charles County has an escape clause for landowners who sell TDRs from their property. There is a provision that allows landowners to buy back the TDRs on their property at a later date. They can buy TDRs at whatever the going price is from another property to replace the TDRs that have been sold from their own property. Hence, an equivalent amount of land is

[48] Many of the properties that qualify for MALPF are forested.

being preserved elsewhere, so there is no net loss of preserved land. There has been only one case of this to date.

The county had intense discussions about whether there should be any down-zoning of regions, both when the TDR program was initiated and in later deliberations. The decision was made not to down-zone when the TDR program was originally passed, but in 2000, a Rural Commission was appointed to look at ways to make the TDR program more effective. It recommended down-zoning. At the time, there was consideration of down-zoning the large, far-western part of the county to a maximum density of 1 house on 20 acres. This proposal proved too controversial and was defeated. In 2004, one area of the county near the Development District, just south of Waldorf, was down-zoned from the Rural Conservation zoning of 1 house on 3 acres to 1 house on 10 acres. This area is designated as a deferred development area and eventually will be opened up to higher density development when the infrastructure is in place. The down-zoning was to discourage development in an area that will eventually be part of the Development District, and the hope is that it will provide significant demand for TDRs.

Receiving areas. TDRs only can be used in the Development District of the county, which is comprised of the residentially zoned areas. Table 4.1 shows the zoning rules, including the density allowed with TDRs in zones where they are allowed. Each TDR allows the developer to build one additional unit. The zoning rules are given as the maximum number of housing units per acre.

In 1999, the County Commissioners changed the TDR ordinance to require the use of TDRs any time an area or a parcel's zoning is increased to allow higher density. This was done because there have been a number of cases where developers have been able to increase the allowable density on a property without using TDRs. To the extent this occurs, it is increasingly seen as a lost opportunity to increase the demand for TDRs. The Deferred Rural Conservation area described above eventually will be eligible for development and will be up-zoned from its current 1-in-10-acre zoning. One possibility that is being discussed seriously is that TDRs would be required to build units at higher density than the current 1 in 10 acres. This clearly would create additional demand for TDRs.

Table 4.1 Zoning Rules for Charles County – maximum units per acre allowed

Base Zones		Base Density	With Afford. Housing Density Bonus	With Max TDRs	With Max TDR's and Afford. Housing Density Bonus
Agricultural Conservation	**AC**				
Conventional		0.33	0.40		
Cluster		0.20	0.27		
Rural Conservation	**RC**				
Conventional		0.33	0.40		
Cluster		0.33	0.40		
Rural Conservation Deferred Rural Residential	**RC(D) RR**	0.10			
Conventional		1.00	1.22		
Cluster		1.00	1.22		
Village Residential	**RV**				
Conventional		1.80	2.20		
Cluster		1.80	2.20		
w/central water or sewer		3.00	3.40		
Low Density Suburban Residential	**RL**				
Conventional		1.00	1.22		
Cluster		1.00	1.22	3.00	3.22
TOD Zone		1.75	1.97	3.50	3.72
Medium Density Suburban Residential	**RM**				
Conventional		3.00	3.66		
Cluster		3.00	3.66	4.00	4.66
Planned development - PRD Zone		3.00	3.66	6.00	6.66
Planned Development - MX and PMH zones		3.00	3.66	10.00	10.66
High Density Residential	**RH**				
Conventional		5.00	6.10		
Cluster		5.00	6.10	6.00	7.10
Application of a planned development - PRD Zone		5.00	6.10	12.00	13.10
Application of a planned Development - MX and PMH zones		5.00	6.10	19.00	20.10
PMH Zone		5.00	6.10	10.00	11.10
TOD Zone		15.00	16.10	27.50	28.60

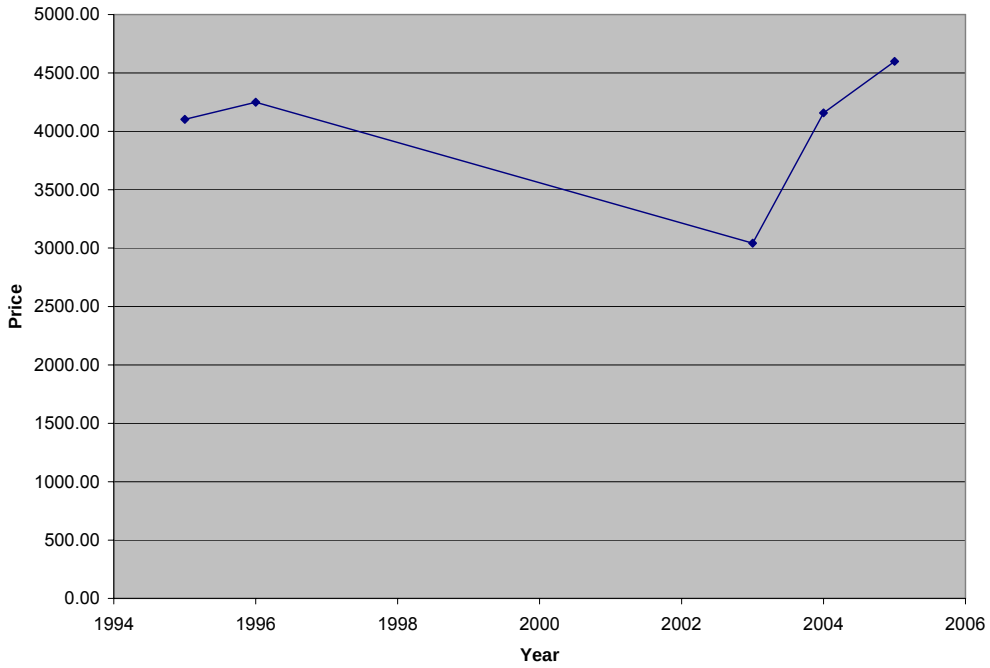
The demand for TDRs can be affected by the presence of the Maryland Adequate Public Facilities Ordinance (APFO), which prevents additional development in areas where there is not available public infrastructure. There have been APFO rules in effect in the northern part of the county in the last few years due to limits on school capacity, but there has been no moratorium on building. Instead, the county handles the problem by giving developers allocations for additional building based on available seats in schools, while new schools are being built. This approach will slow down development, but it will not stop all development in regions where there is tight infrastructure capacity. On the one hand, this may have reduced the demand for TDRs over what it would have been. On the other, less building in a tight housing market will drive prices up further, increasing the price developers are willing to pay for TDRs. Developers must pay a school impact fee on each housing unit built. The school impact fee in the county recently has been increased from $4,000 to $9,000 per unit.

*The TDR Market***.** The TDR market in Charles County is made of individual transactions between landowners in the sending areas and developers or others who wish to purchase TDRs. The county keeps a list of farmers who have gone through the process of qualifying for the MALPF program and of then certifying TDRs. These farmers or landowners are the only ones eligible to sell. Developers are informed about their ability to use TDRs in receiving areas by county officials. They are provided with the list of eligible landowners if they want to try to purchase TDRs. The county is not involved in the negotiation or sale of TDRs but does keep a record of the transactions, the price of the traded TDRs, and information about the TDRs retired (used in development). However, those records are not public, so there is only anecdotal information available to potential buyers and sellers about prices paid for previous transactions.

To date, only 690 TDRs have been certified and retired (used for development in receiving areas). There have been more than 20 transactions between parties and most prices have been between $3,800 and $4,500 (see Figure 4.13), but in 2006 prices jumped as high as $20,000. [49]

[49]From conversation with Charles Rice, Agricultural Land Use Planner, Charles County government.

Figure 4.13. TDR Prices over Time, Charles County, MD, 1995–2005



Source: Based on TDR price data from Charles County Department of Planning

III. Evaluation of the TDR Program

Performance of the TDR program

As described above, the goal of the TDR program in Charles County is to preserve 64,000 acres of working rural land. However, more than 10 years after the program began, there have only been 690 TDRs sold and therefore only about 2,028 acres protected. There have been more sales in recent years than in the beginning of the program, but there is far from a robust market in TDRs.

A substantial amount of acreage has been preserved in the county, but this has occurred under state programs such as MALPF and Rural Legacy. State programs have preserved 37,551 acres in total to date. The TDR program is the only county program; there is no county PDR program in which county funds are used to purchase easements directly to preserve land from future development.

A TDR and a PDR program often can be used in concert to achieve goals that neither one can accomplish alone. For example, there may be parcels that the county would like to preserve

because of strategic location or environmental factors, but they will not become part of the TDR program because TDR prices are too low or the MALPF program because the soils are not high enough quality. These could be purchased by a county PDR program. Or, the county could participate in the TDR market and retire TDRs directly, as is done in Calvert County. This allows for the county to accelerate land preservation goals through the TDR program and provides information about and stability to TDR prices. It also preserves additional land with less development elsewhere in the county but does require sources of revenues to accomplish the purchase and retirement of the TDRs.

Under the TDR program, a property must be eligible for both MALPF and TDR. Landowners will tend to go with the program that gives them the highest value. The MALPF program tends to recruit the higher valued agricultural properties in Charles County because TDR prices are quite low, and MALPF will pay a percentage of the market value of the property (usually about 75 percent). Of the properties that certify for TDRs, most will get a higher value under the MALPF program and sell easements there. The only properties that end up selling under the TDR program are those with high-quality soils (required to be eligible for MALPF) and low value in development. These tend to be properties in the far western part of the county that have little development potential.

There is some indication that there are not sufficient properties that have certified TDRs or that the asking prices for TDRs are too high, because some developers have found it less expensive to buy land, certify it under the MALPF and TDR programs, and then sell the easements in the TDR market to themselves for development.

In fact, the economics of the land market up until now have been that property owners tend not to want to certify to sell TDRs. Landowners who want to preserve their land in farming and have land with high-quality soil, will be likely to use the MALPF program to get the best deal on selling an easement. And there is some evidence about the price landowners may get if they sell their land for development. There will, of course, be a range of prices depending on the location, size, and characteristics of the parcel. Near the urban areas and in the east of the county, land prices even for three-acre parcels in the rural and agricultural conservation areas are quite high. One report finds prices in these areas to be as high as $185,000 per lot (three acres) in development (ACDS and REM 2005). Other evidence from the county suggests that land prices are about $10,000 per acre in those portions of the rural areas with reasonable development potential (Charles Rice, Charles County government). But these are much higher than the current price of about $8,000–$10,000 for a TDR easement (three acres of land) plus the

value of the land in farming. The latter also will vary a great deal across parcels, but for many farms it is quite low today.[50] In summary, because the TDR program is tied so closely to the MALPF program and TDR prices have been so low, there are very few landowners who can or want to offer their properties to the program. However, this is starting to change now with the recent increase in TDR prices of $15,000– $20,000 per TDR.

However, the original intent of the TDR program was to preserve high-quality agricultural land using MALPF standards for the acreage to be preserved. This includes many forested areas, but marshlands and other sensitive areas do not quality under MALPF and therefore cannot be considered for the TDR program. There may be potential for increasing the pool of sending areas through a broadening of the program and still maintain the intent of the program's preservation goals. The Charles County Rural Commission suggests broadening the sending areas and allowing TDRs to be used to increase density above currently allowed levels in these rural conservation areas (Report of the Rural Commission 2003). This sounds like a promising approach to improving the performance of the TDR market. We now turn to the demand side of the TDR market.

The Demand for TDRs

As discussed, there have been few sales of TDRs to developers for increasing density in the Development District. What sales have occurred have been almost exclusively in the low-density residential areas. They have increased the density somewhat over what it was under baseline zoning, but even in these areas the full density bonus allowed with TDRs was not used. Table 4.2 shows the allowable density for each project under the baseline density rules and the density allowed with TDRs for the project. It then shows the density the project actually used. There were only two subdivisions that used TDRs in the medium-density zoning areas and none that used TDRs in the high-density areas.

The density levels with TDRs are those chosen by developers. The use of TDRs at the level specified in the zoning table, Table 4.1 above, and shown in the fifth column of Table 4.2 below is the "by-right" density according to county planners. Developers do not have to negotiate over density with TDRs, but they have the right to build at specified density.[51] But, as

[50] Net farm income sales of agricultural products were about $200 a year in Charles County in 2002 (National Agricultural Statistics Service 2002).

[51] There could be environmental constraints or state regulations, however, such as forest conservation, that could limit density.

the sixth column in Table 4.2 and the last bar in Figure 4.14 shows, developers do not build at densities allowed with TDRs. They build at densities lower than allowed. As Figure 14 shows, developers do build at higher than baseline zoning with TDRs, but they tend not to go to the allowable limit.

Table 4.2. Subdivisions with TDRs in Approved Plans, Charles County, MD

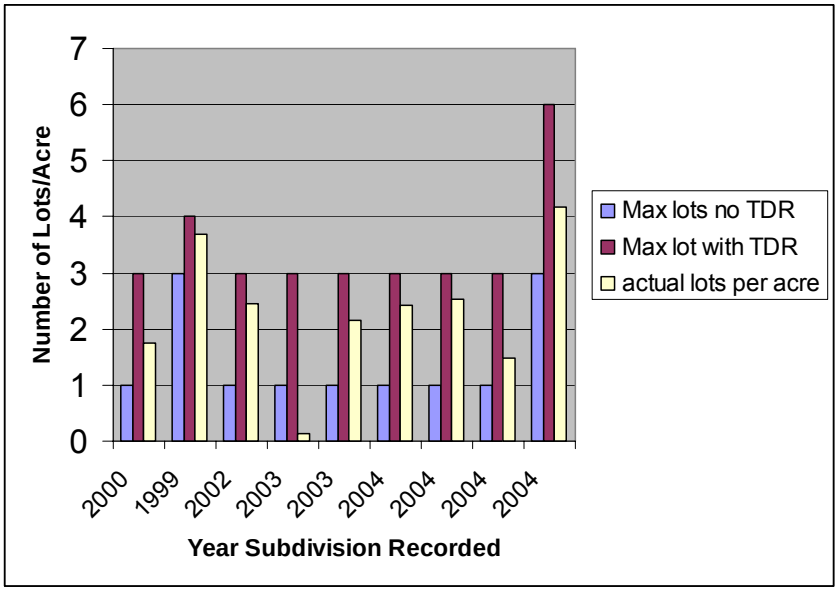
Subdivision project using TDRs	Number of TDRs used in development	Year of approval	Baseline density allowed units/acre[1]	Density allowed with TDRs units/acre	Housing density built with TDRs units/acre	Official density bonus with TDRs	Actual density bonus used
1	179	1999	1 RL	3	1.75	200%	75%
2	8	2000	3 RM	4	3.68	33%	23%
3	152	2002	1 RL	3	2.44	200%	144%
4	10	2003	1 RL	3	0.13[2]	200%	-87%
5	32	2003	1 RL	3	2.14	200%	114%
6	79	2004	1 RL	3	2.43	200%	143%
7	82	2004	1 RL	3	2.52	200%	152%
8	24	2004	1 RL	3	1.49	200%	49%
9	124	2004	3 RM	6	4.17	100%	39%

[1]RL is low-density residential, RM is medium-density residential.

[2]This subdivision had large acreage, much of which could not be used for building; it is a special case.

Source: Spreadsheet from Charles County Government; combined with information from agendas and meetings of the Charles County Planning Commission.

Figure 4.14. Potential and Actual TDR Lots, Subdivisions Using TDRs, Charles County



Source: See Table 4.2 above.

Why is there is so little demand for TDRs? We find some of the same reasons we discussed in other counties in this study. First, there are other ways that developers can get higher density. Many of the subdivisions that did not use TDRs had higher density than the allowable density. For example, 13 of 36, or about 36 percent, of subdivisions in the low-density residential category have more lots than allowed by zoning (zoning is a maximum of one house on an acre in RL zones). In some of the planned development zones, density increases are allowed through a point system if developers add some types of recreational land or recreational improvements. There are occasionally other reasons why developers can get additional density.[52]

In addition, there is evidence that the current zoning rules without TDRs provide density at levels sufficient for much of the market demand. Again, from Table 4.2, of those subdivisions that did not use TDRs and have not exceeded density limits due to the reasons given above, none of the high-density developments are within 20 percent of the allowable limit on density, and about 62 percent of low-density subdivisions are at less than 20 percent of the limit on density. This may be due either to market preferences for lower density than what is allowed or to existing residents' ability to block or reduce density in some areas. Whatever the reason, there will be no demand for TDRs if the existing density is at a level that is acceptable to most home buyers and developers.

Is there the potential for higher demand for TDRs in the future under the current system? The housing market continues to be strong in Charles County, and with housing pressures the demand for density appears to increase as well. One policy that is very interesting in Charles County is the down-zoning of a relatively large area of the Rural Conservation area adjacent to the Development District south of Waldorf. This area, as described above, was down-zoned to 1 house on 10 acres and designated Rural Conservation Area Deferred. Eventually, this area will have infrastructure and will be included in the Development District. The intention is that all up-zoning in this area will be achieved only through the use of TDRs. This has the potential to create a large demand for TDRs in the future. This area will serve as an interesting experiment to determine if a policy that down-zones certain areas and then allows developers to eventually buy back to higher density in those areas can make a TDR program more robust and effective. However, it will be important to preserve a well-functioning market as this new demand is introduced. We now turn to the functioning of the TDR market.

[52] Based on conversations with staff at the Department of Planning for Charles County.

The TDR Market

In a well-functioning TDR market, there would be a single price for TDRs at any point in time, and, as discussed in other chapters, prices should gradually rise over time, as do the values of other assets. If a single price does not prevail and there is not good information about prices and potential buyers and sellers in the market, potential entrants may be reluctant to participate and markets will be "thin." Uncertainty about the "right" price at any point in time and about future prices will prevent buyers and sellers from participating. Well-functioning markets tend to have available good information about past transactions and prices for participants. There is often a clearinghouse where the bids and offers of buyers and sellers establish a single trading price.

Charles County does not offer a clearinghouse for the TDR market nor is there a third party that is performing this function. The county does provide a list of farmers who might want to sell developments rights, but each transaction must be negotiated and often the price for each is different. Prices have tended to vary with the location of the property, with lower prices paid if the property is more distant from the urbanized areas. The program is more like a density-transfer program than a well-functioning TDR market. It is true that there are so few trades currently that it is hard to envision any type of robust market. However, with the potential for more trades in the future, there is clearly a greater role for the county as a provider of information or even a clearinghouse for the transactions. The TDR market is a created market, and to function efficiently it must be managed by the county to perform its function.

It also is important that if there are to be new receiving areas introduced in the future, such as the Deferred Rural Conservation area described above, that the additional demand be phased-in over time or that new areas be down-zoned and then brought into the Development District. It there is large additional demand for TDRs for a period and then a decline in that demand, prices will fluctuate. Fluctuating prices will tend to keep potential participants out of the market.

IV. Conclusion

The agricultural sector of Charles County has been hit hard by the decline of the tobacco industry and it is not clear yet what agricultural industries have the potential to be profitable in the future. The forestry sector with associated forestry products is strong and may offer promise for future profitability. Thus, the value of land in agriculture has changed in recent years, and

its prospects are uncertain. This may affect the willingness of farmers to preserve their properties in preservation programs, such as the TDR program.

In examining subdivision activity in the county, we find that most of the current development in terms of housing units approved is going into the Development District in the northern part of the county. Nonetheless, there are many small developments going into the Rural Conservation and Agricultural Conservation areas, and the majority of land converted for development is in these areas.

We find that TDRs purchased in the program to date have been used almost exclusively in the low-density residential areas. They have increased the density somewhat over what it was under the baseline zoning, but they did not use the full density bonus.

However, there have been relatively few TDR sales. Only slightly more than 2,000 acres were preserved under the program by the end of 2005. We found that there are a number of reasons for this. On the demand side, there appears to be other ways besides the purchase of TDRs for developers who do want to include additional density to do so. But most subdivisions are put in at densities lower than the than the allowable density; therefore, there is no demand for additional density with TDRs. On the supply side, many farmers want to hold onto their land, with the potential for selling it in the future. Land prices for three-acre lots in the rural areas are relatively high, with one estimate for each three acres of land on the eastern side of the county in the Rural Conservation area selling for $185,000. In addition, since they have to qualify for the state MALPF program to certify TDRs to sell, farmers often find a better deal in selling easements through the state rather than entering the TDR market.

There is an interesting experiment going on with the down-zoning of a relatively large area of the county near the Development District. That area may be up-zoned to allow higher density in the future but only with the use of TDRs. This is likely to be a strong new driver for TDR demand. However, that demand will need to be smoothed over time either by being phased in or by the down-zoning of additional areas in the future.

It is likely that some major change in land-use policy, such as across-the-board down-zoning and then expansion of the TDR sending and receiving areas, will be necessary to increase TDR demand . The Charles County Rural Commission recommends down-zoning the Development District and the broad areas that should be preserved, such as the far western region. It would not be a good policy only to down-zone the Development District (and allow developers to buy back) and to not down-zone the surrounding areas as well. This would tend

to make the cost of building at existing densities higher in the Development District and might result in more building outside the development area. Across-the-board reductions in zoning and then differing rights for buying back with TDRs is likely to be more effective and perceived as more fair.

It will become important for the county to be more involved in the TDR market as the market becomes more active. The functions of providing information and acting as a clearinghouse will be particularly important. The county also may want to consider purchasing TDRs in the TDR market and retiring them, both to stabilize the market and signal the willingness of the county to support land preservation and to help limit the overall amount of development, if that fits with county goals.

Chapter 5: St. Mary's County

I. St. Mary's County Fundamentals

Geography, Population, and the Economy[53]

St. Mary's County is in southern Maryland bordered by several bodies of water—the Chesapeake Bay to the east, the Wicomico River to the west, the Potomac River to the south, and the Patuxent River to the northeast. It has more than 400 miles of shoreline; more than 18 percent of the county's approximately 231,000 acres of land area is within 1,000 feet of tidal waters or within the Critical Area defined under Maryland's Chesapeake Bay Critical Area Law. St. Mary's County ranks fourth among Maryland counties in Critical Area acreage.

St. Mary's County had a population of 94,921 in 2004, giving it an average population density of approximately 260 people per square mile. Population growth has been relatively high in recent years, with a 15 percent increase over the 1990–2004 period. The largest population center in the county is Lexington Park, which has a population of just over 11,000; Leonardtown, the county seat, is the town with the second-highest population, at approximately 2,000.

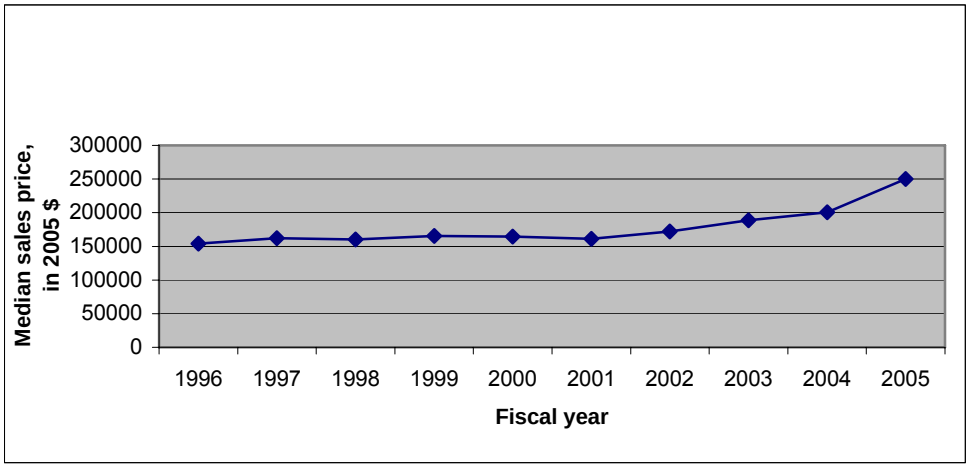
Although St. Mary's County has much in common with its southern Maryland neighbors, Charles and Calvert Counties, it differs from them to the extent that its citizens are DC-area commuters. In 2000, 27.3 percent of the St. Mary's workforce commuted to jobs outside the county and only 7.6 percent commuted to jobs outside the state of Maryland, mostly to Washington, DC (St. Mary's County Government 2003). In Calvert and Charles Counties, the percentage commuting to jobs beyond county lines was 43 percent and 42 percent, respectively. The Patuxent River Naval Air Station is a major employer in St. Mary's County and anchors what has been a relatively strong county economy in recent years. Nearly 73 percent of the jobs in the county are direct Naval Air Station jobs, and a significant percentage of additional jobs are related to the facility. The unemployment rate for the county was only 3.3 percent in 2004,

[53] Information in this section is from the Maryland State Department of Assessments and Taxation (see http://www.dat.state.md.us/sdatweb/stats/index.html); the epodunk web site on local government statistics (see http://www.epodunk.com/cgi-bin/localList.php?local=21&locTGroup=Counties&direction=down&sec=0; Maryland State Data Center of the Maryland Department of Planning (http://www.mdp.state.md.us/msdc/); and St. Mary's County 2003 Comprehensive Plan (see St. Mary's County 2003).

and job growth over the 1998–2003 period was a robust 15.5 percent. In fact, job growth outpaced population growth, which was slightly more than 9 percent, over this period. Among the three southern Maryland counties, St. Mary's was home to 30 percent of the region's 2003 population and just less than 40 percent of the jobs.

Median household income in St. Mary's was $59,700 in 2003, approximately equal to the U.S. average but below that of neighboring Calvert and Charles Counties. House prices also are slightly below those in neighboring Charles and Calvert Counties and below the state average for Maryland as well. The median sales price of owner-occupied housing in St. Mary's County in fiscal 2005 was $250,000, compared with $282,000 in Charles County, $289,000 in Calvert County, and $266,000 for the state as a whole.[54] Median sales prices over the 1996–2005 fiscal year period, in inflation-adjusted 2005 dollars, are shown in Figure 5.1. Housing prices were relatively constant during the late 1990s but increased significantly in the early 2000s. Between 2001 and 2005, the median sales price, in inflation-adjusted dollars, increased an average of 14 percent per year. Calvert County prices increased by the same average amount and Charles County prices by just less than 14 percent. Hence, house prices in St. Mary's County, as in most of the Washington, DC, region and elsewhere in the United States, were robust during the early part of the decade.

Figure 5.1. Median Sales Price of Improved, Owner-Occupied Housing, St. Mary's County, MD, 1996–2005

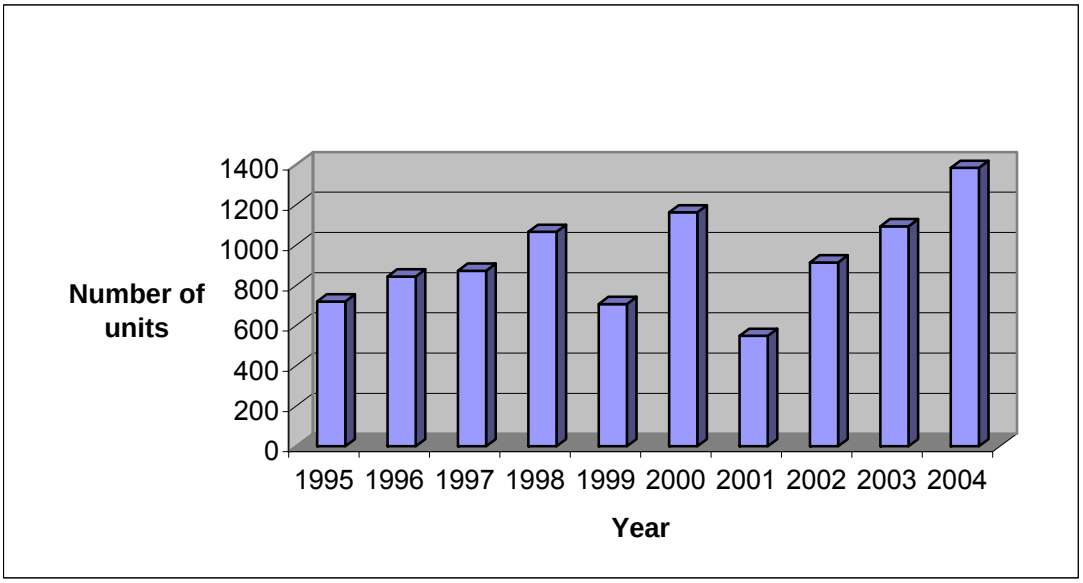


Source: Maryland State Department of Assessments and Taxation.

[54] These figures are from the Maryland State Department of Assessments and Taxation, which uses a fiscal year of July 1– June 30.

Construction of new houses in the county has been strong in recent years. Figure 5.2 shows the annual number of new housing units authorized for construction each year between 1995 and 2004. Over the entire 10-year period, a total of 9,313 new units were built. With a housing stock of approximately 38,300 units as of the end of 2004, this means that about 24 percent of the existing stock was built in the past 10 years. The number of new units authorized for construction in 2004—1,384—was the highest number on record.[55] In short, St. Mary's County is a growing county with increasing development and population growth and a reasonably robust local economy. As illustrated in the next section on farming, the value of agricultural land and buildings in St. Mary's County has declined in recent years. This suggests that there is pressure on local farmers to sell land for development.

Figure 5.2. New Housing Units Authorized for Construction, St. Mary's County, MD, 1995–2004



Source: Maryland Department of Planning.

Farming.[56] Just over 68,000 acres—approximately 30 percent of county land—was in agriculture in 2002 in St. Mary's, a 35 percent decline from 1978 and a 12 percent decline from

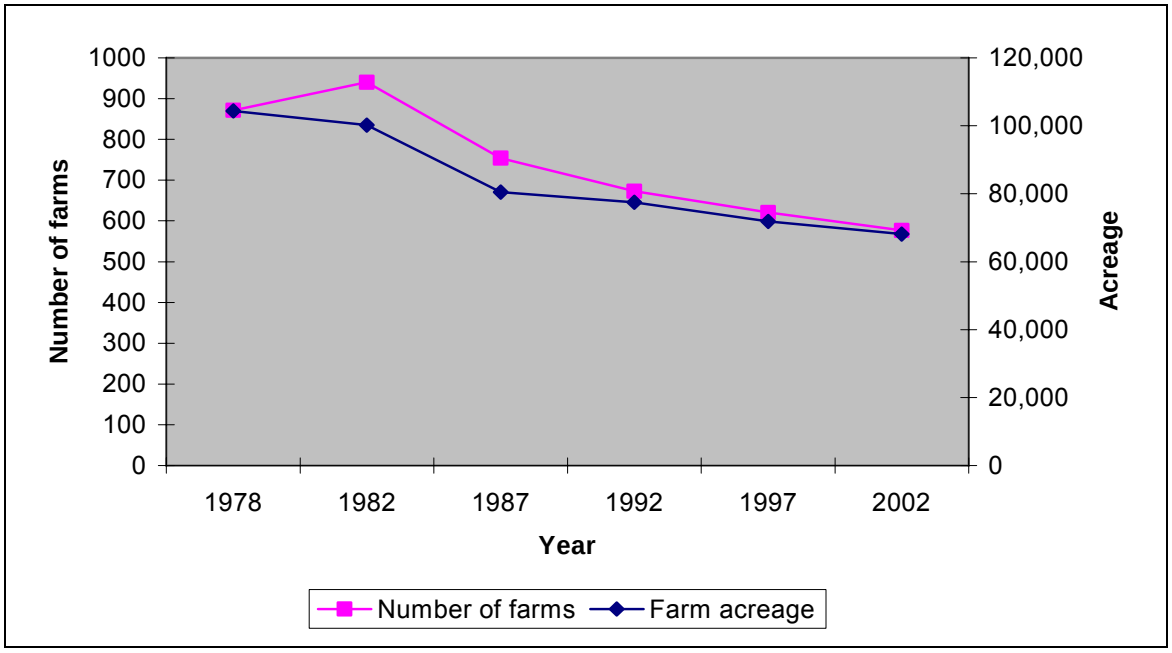
[55] New construction figures are from Maryland Department of Planning. The new construction numbers for 2003 and 2004 were added to the housing stock figure for 2002 from www.fedstats.gov/gf/states/24/24037.html to obtain a 2004 housing stock estimate. These figures are on a calendar year basis not a fiscal year basis.

[56] The agricultural statistics in this section are from the USDA's Census of Agriculture (http://www.nass.usda.gov/census/census02/profiles/md).

1992. Figure 5.3 shows farm acreage and the number of farms in St. Mary's County from 1978 through 2002. Both the number of farms and total farm acreage have dropped over time. There were 871 farms in the county in 1978 compared with 577 in 2002. Average farm size has remained relatively constant—it was 120 acres in 1978 and 118 in 2002. Thus, farms in St. Mary's County are relatively small compared with the Maryland state average of 170 acres, but they have remained about the same size for at least the last 25 years.

Interestingly, cropland acreage has not declined nearly as much as total farm acreage; it fell 20 percent between 1978 and 2002. Harvested cropland fell by even less: 13.9 percent. In 1978, St. Mary's County had 39,645 acres in harvested cropland; in 2002, it had 34,134 acres. This means that a greater share of agricultural land in the county is harvested cropland than it used to be, and presumably less land is devoted to pastureland and woodland. In 1978, 38 percent of the county's farmland was devoted to harvested crops; by 2002, this figure had risen to 50 percent. Similar changes have been observed in other Maryland counties.

Figure 5.3. Number of Farms and Farm Acreage, St. Mary's County, MD, 1978–2002

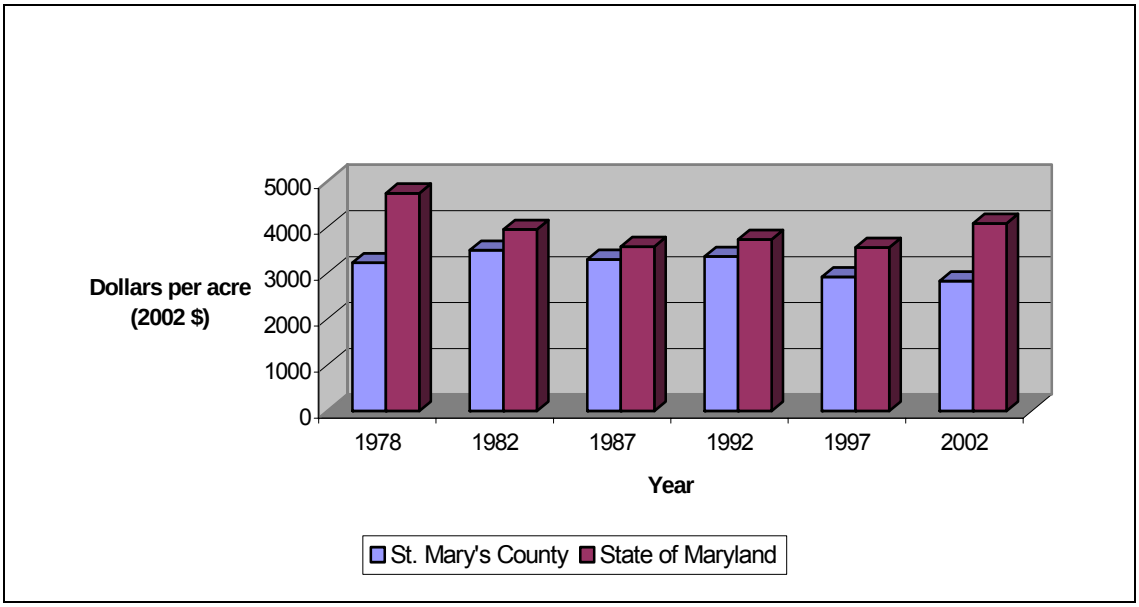


Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

The value of land in farming has declined over time in St. Mary's County and has consistently been below the value for the state as a whole. Figure 5.4 shows the inflation-adjusted average value per acre of farmland and buildings in St. Mary's County and the state. The $2,831 average value per acre in St. Mary's County in 2002 was 12 percent below the 1978

value (in constant dollar terms) in the county and 19 percent below the 1982 value, the highest over the past 25 years. In 2002, farmland values in St. Mary's County, on a per-acre basis, were 31 percent below the state average for the year.

Figure 5.4. Estimated Market Value of Agricultural Lands and Buildings, St. Mary's County, MD, 1978–2002 (inflation-adjusted dollars per acre)



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

Grains are the major crop in St. Mary's County. Since many St. Mary's farmers took the tobacco buy-out from the state, tobacco—historically, the most important crop in the county—has declined sharply in importance. As recently as 1997, approximately $9 million was earned from tobacco sales by St. Mary's farmers; by 2002, that figure had dropped to $1.7 million.[57] Of all counties, St. Mary's lost the most acreage in the tobacco buy-out: 15,335 acres out of a total of 45,301 acres.[58] Figure 5.5 shows acreage in corn, wheat, soybeans, hay/alfalfa, and tobacco. Corn and tobacco acreage have declined sharply, while soybeans and wheat acreage have risen. Acreage in hay and alfalfa remained relatively constant over the period.

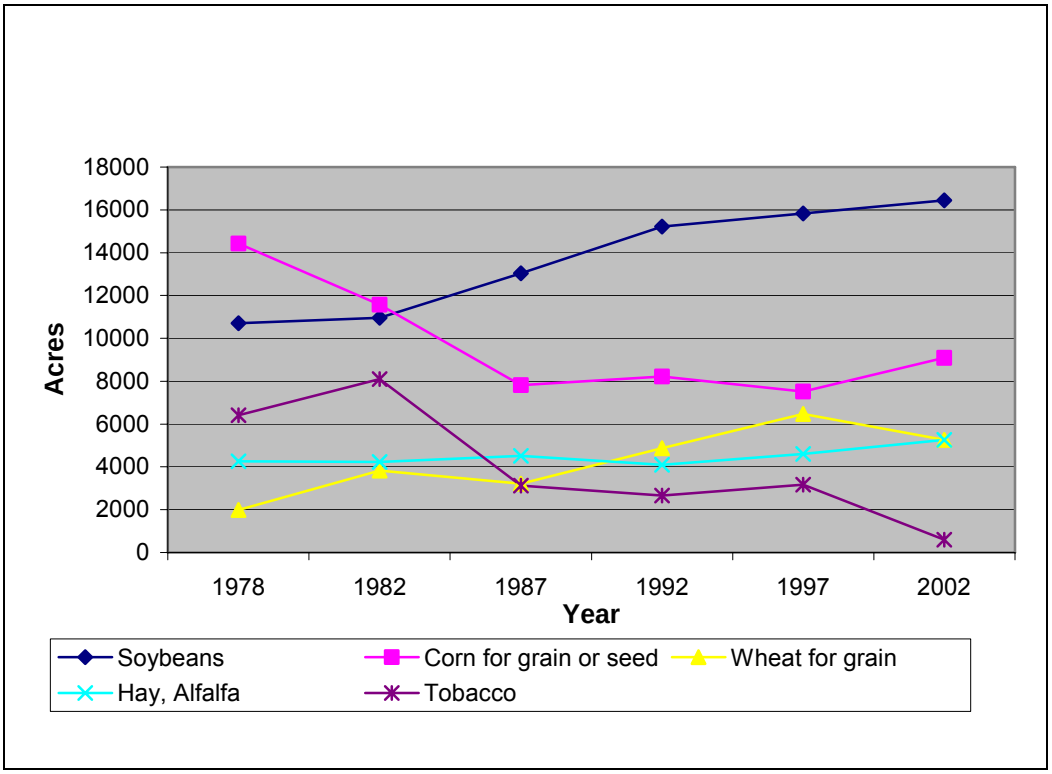
Not shown on the graph is acreage in vegetables harvested for sale. While acreage devoted to these crops is small relative to other crops, it has been rising consistently over time. Only 91 acres were in vegetable production in 1978; by 2002, that figure had risen to 539 acres.

[57] Although many farmers in the county took the buy-out, most farmers in the Amish and Mennonite community continue to farm and sell tobacco.

[58] These figures are as of 8/11/04 and are from St. Mary's County (2005).

Total revenues from the sale of vegetables in 2002, at $1.6 million, were approximately equal to revenues from tobacco sales. The highest revenues were attributed to the grains commodity group at $3.5 million.[59]

Figure 5.5. Acreage in Selected Crops, St. Mary's County, MD, 1978–2002



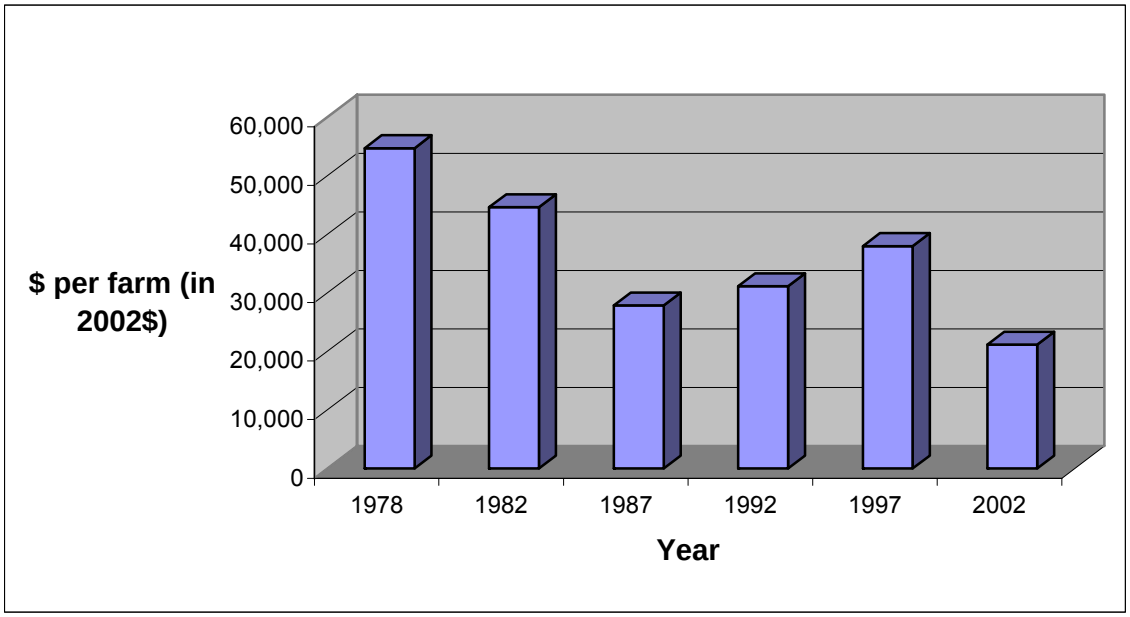
Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

The market value of agricultural products in St. Mary's County has declined over time. Obviously with less land in farming, revenues from farm products would decline, but even on a per-farm basis, revenues have dropped. Figure 5.6 shows the market value of all agricultural products sold for the years 1978 through 2002 on an average per-farm basis in constant, inflation-adjusted dollars. Average per-farm revenues dropped from a high of $54,700 in 1978 (in 2002 dollars) to a low of $21,137 in 2002. A large portion of the decline occurred between 1997 and 2002, when the per-farm value of farm products sold plummeted by 44 percent. This decline likely largely was due to the closing of the Archer Daniels Midland grain export pier in Baltimore in mid-2001. The facility was the last remaining grain export elevator in Baltimore and was a key component of Maryland's (and some surrounding states') agricultural economy.

[59] This group includes grains, oilseeds, dry beans, and dry peas.

A recent task force study concludes that after the pier closed, soybeans lost from 35 to 70 cents per bushel based on additional transportation costs to the next nearest market. The greatest impact was in central, northeast, and southern Maryland counties—including St. Mary's County—where producers are a long distance from the next viable market (Maryland Department of Agriculture 2003). The combination of declining soybean prices while acreage in soybeans rose did not bode well for St. Mary's farmers in the early 2000s. It remains to be seen how farmers will adjust to these circumstances.

Figure 5.6. Average Market Value of Agricultural Products Sold, St. Mary's County, MD, 1978–2002 (in inflation-adjusted dollars)



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2002.

Livestock accounts for a relatively small portion of the value of agricultural products sold by St. Mary's farmers: in 2002, 74 percent of the $12.2 million in total sales in the county was from crop sales and 26 percent was from livestock sales. In comparison with other farms in Maryland, the value of production from St. Mary's farms appears to be well below average. Statewide average per-farm revenues were $106,026 in 2002, more than five times per-farm revenues in St. Mary's County.

Despite the relatively low value of farming in St. Mary's, the county considers farming a vital part of its economy and is working hard to preserve the rural character of its communities. With 30 percent of the county land in agriculture, there is clearly a base from which to work

toward sustaining a viable farm economy. Furthermore, the county is attempting to retain this land in agriculture through a variety of land-preservation programs. As of 2005, 13,667 acres of farmland—20 percent of total farmland acreage and approximately 6 percent of the total county land area—had been permanently preserved from development through county land trusts, the MET, Rural Legacy, and the MALPF program (Dehart 2005).[60] MALPF easements account for approximately half of this acreage or approximately 7,000 acres (St. Mary's County 2005). As explained more fully below, the county's TDR program has not been active until recently; thus, almost no preserved acreage is attributed to the sale of TDRs. This is expected to change in coming years with changes that the county is making to the program.

II. Zoning, TDRs, and Land Use in St. Mary's County

Zoning Categories and Density Limits

St. Mary's County has one rural zoning classification, the Rural Preservation District (RPD), and several residential and mixed-use zones. The RPD zone covers approximately 178,000 acres—77 percent of the county's land area. It was established "to foster agricultural, forestry, mineral resource extraction, and aquaculture uses and protect the land base necessary to support these activities" (St. Mary's County Department of Parks and Recreation 2005). The residential and mixed-use areas comprise the Growth Areas for the county—the areas where the county would like to see residential and commercial development concentrated. These Growth Areas include the development districts of Lexington Park and Leonardtown, the town centers of Charlotte Hall, New Market, Mechanicsville, Hollywood, and Piney Point, and seven village centers. These areas are the designated Priority Funding Areas (PFAs) in the county.[61]

Table 5.1 shows the residential density limits set by zoning in the county with and without TDRs. In comparison with some other counties with TDR programs, St. Mary's rural zoning is not very restrictive. Land in the RPD is subject to 1 du/5 acre zoning limits. By contrast, Montgomery County has 1 du/25 acre baseline zoning in its Agricultural Preserve; Calvert County has 1 du/20 acre baseline zoning in its Farm and Forest District; and Charles

[60] The 20 percent figure is obtained by dividing the 2005 preserved land figure by the 2002 farmland acreage figure from the Census for Agriculture; thus, it is an approximation for 2005.

[61] The 1997 Priority Funding Areas Act allows the state to give priority to designated PFAs for funding infrastructure, such as roads, water, and sewer, and for economic development grants. All municipalities are PFAs and counties can designate other areas that have existing infrastructure as PFAs.

County has 1 du/10 acre zoning in its Rural Conservation Deferred zones.[62] The 1:5 zoning in St. Mary's County is more restrictive than it used to be, however; up until a rezoning in 2002, the density limit was only 1 du/3 acres in the RPD.

Table 5.1. Zoning Density Limits and TDR Density Bonus in St. Mary's County, MD[1]

	Density limit under baseline zoning	Increase in dwelling units per acre with TDRs[2]	Bonus units per acre for achieving max density with TDRs	Maximum density[3]
II. Residential				
Residential Low-Density	1 du/acre	2	2	5 du/acre
Residential High-Density	10 du/acre	5	none	15 du/acre
Residential Neighborhood Conservation District	1 du/acre	1	none	2 du/acre
III. Mixed Use				
Residential Mixed Use	1 du/acre	2	2	5 du/acre
Village Center Mixed Use	1 du/acre	2	2	5 du/acre
Town Center Mixed Use	1 du/acre	5	2	5 du/acre
Downtown Core Mixed Use	5 du/acre	2	none	10 du/acre
Corridor Mixed Use	1 du/acre	2	2	5 du/acre
IV. Rural				
Rural Preservation District	1 du/5 acres	0.13	none	1 du/3 acres

[1] Rules based on 2002 Comprehensive Zoning Ordinance and Amendments through 2004.

[2] One TDR is needed for each additional dwelling unit, except in the RPD where two TDRs are required for each additional unit.

[3] In some areas, additional density can also be attained with affordable housing units and particular design enhancements.

Similar to Calvert County, St. Mary's County has an overlap in TDR sending and receiving areas—landowners in the RPD have the option of selling development rights and preserving their land or they can purchase development rights from other RPD properties and

[62] Calvert County's density limits have gotten more restrictive in recent years. As recently as 1998, the rural zones were all 1 du/5 acres; a 1999 county-wide down-zoning reduced baseline density to 1 du/10 acres and another down-zoning in 2003 reduced it further to 1 du/20 acres.

develop their properties more intensively than baseline zoning allows. This was another change that took place with the 2002 rezoning. Up until that time, TDRs could only be used in the Growth Areas, but as compensation for the down-zoning of the RPD to 1 du/5 acres from 1 du/3 acres, the county decided to allow TDRs to be used in the RPD to get back to the previous 1 du/3 ac limit. As can be seen in Table 5.1, the Residential, Town center, and Village center areas allow a range of densities, from relatively low-density development of 1 du/acre up to very high densities of 15 du/acre with use of TDRs in the Residential High-Density zone. The TDR program is designed to try and encourage TDR use in the Growth Areas; the density bonus granted with TDRs is higher in these areas than in the RPD: fewer TDRs are required to build an additional unit (only one TDR compared to two in the RPD) and an additional bonus is granted in some areas for achieving maximum density with TDRs (see column four of the table). Nonetheless, as explained below, TDR use has been minimal in the county and a great deal of development has taken place in the RPD zone.

TDR Program

St. Mary's TDR program began in 1990. It came about when the 1988 Comprehensive Plan recommended a down-zoning from 1 du/acre to 1 du/20 acres; TDRs were suggested as a way to get landowners to accept such a drastic reduction in property values. The county commissioners ultimately would not accept the lower rural density, but they adopted the TDR program in the 1990 revisions to the county zoning ordinance. The primary goal of the program is to preserve farmland, and there is no restriction on size, location, or type of farm. The RPD is the only sending area, however, so only properties in the RPD can sell TDRs. Each parcel of land in the RPD gets one TDR for each undeveloped lot of record or one TDR per three acres of eligible land. This means the owner of an undeveloped, two-acre lot in the RPD has a single TDR to sell; if a landowner has 100 acres, all undeveloped, he has 33 TDRs to sell (as long as all acres are eligible). Eligible acreage is determined by taking total acreage and making deductions for sensitive areas that for reasons of soils, topography, and so forth are not considered developable.

The process by which development rights are transferred is as follows. A landowner first requests certification from the planning director, who then determines and certifies the number of TDRs available to sell based on eligible acreage. To "lift" TDRs from the property, the landowner then records an "Original Instrument of Transfer" in the county land records. When this is done, restrictions are placed on development of the property and the tax value of the property may be adjusted to reflect these restrictions. The TDRs are transferred to another

party when an "Intermediate Instrument of Transfer" is recorded in the land records; this instrument shows a serialized number for each TDR lifted and transferred. Finally, the TDRs are used to increase density on a receiving site only when a "Final Instrument or Deed of Transfer" is recorded. It is at this time that a permanent easement is placed on the sending property.[63]

When a landowner sells a TDR, the landowner preserves only that single lot or only the acreage that could have been developed if the TDR wasn't sold (i.e., three acres). So using the 100-acre farm as an example, if only half of its 33 TDRs are sold, then only half of the farm, 50 acres, is preserved from development. This differs sharply from Calvert County's program in which the entire acreage is under easement once the first TDR is sold but is similar to the Montgomery County program. The difference between St. Mary's County and Montgomery County is that Montgomery County's density limits are quite restrictive, while St. Mary's are not. Using the 100-acre farm with 50 acres preserved as an example, in Montgomery County only two dwelling units would be permitted on the remaining acreage, while in St. Mary's, ten dwelling units would be allowed because of the 1 du/5 acre density limits.[64]

Although the primary goal of the TDR program in St. Mary's County is farmland preservation, county planning officials also would like to use the TDR program to halt development of small parcels in the RPD that are unsuitable for development. In most cases, these are lots or parcels that can not meet current standards for septic systems installation or that are encumbered by sensitive areas (steep slopes, highly erodible soils, stream buffers, wetlands and their buffers, or floodplains) that make the property unbuildable without a variance and without mitigation of the environmental impacts caused by development (Veith 2005). The county allows and encourages such property owners to sell TDRs and preserve their lands from development.

As indicated in Table 5.1, TDRs may be used to increase density in the RPD as well as in all residential and mixed-use areas. Since adoption of the Comprehensive Zoning Ordinance (CZO) in 2002, they also may be used to increase the floor area of commercial buildings in all areas where such buildings can be located. The St. Mary's program is one of the few that allows TDR use for commercial development. As stated above and in a footnote to Table 5.1, one TDR

[63] Although development is restricted at the time that the TDRs are first lifted from the sending property, it is not until the Final Instrument or Deed of Transfer is recorded that the easement is placed on the property. Until this happens, it is possible for the TDRs to be returned to the sending property and development under the baseline zoning to take place after that occurs.

[64] St. Mary's requires clustering of all subdivisions in the RPD, however.

is needed to build an additional dwelling unit in any of the residential or mixed-use areas, and two TDRs are needed to build an additional unit in the RPD. For commercial buildings, which are subject to maximum floor area ratios established by the zoning code, one TDR provides 2,000 additional square feet of floor area. Base floor area ratios range from 0.05 in the RPD to 0.40 in the Corridor Mixed Use zones and 0.60 in the Downtown Core Mixed Use areas.[65] With TDRs, the limits range from 0.15 up to 0.60. For example, commercial buildings in the Town Center Mixed Use zones can increase floor area ratios from 0.40 to 0.60 with TDRs. TDR use is "by right" in St. Mary's County; this means that there is no "compatibility of use" requirement or other requirement such as a Board of County Commissioners hearing that is necessary before the density increase is allowed. If a developer has the required number of TDRs to build the additional dwelling units or added square footage, the developer will be allowed to do so.

Program Results

According to Department of Land Use and Growth Management calculations made in the spring of 2005, only nine TDRs were sold in St. Mary's County between 1990, when the program began, and 2002. The department further estimated that between 2002, when the CZO was passed, and April 2005, 146 additional TDRs were lifted and transferred to receiving properties. This means that a total of 465 acres had been preserved through the TDR program as of April 2005. The department further estimated that an additional 445 TDRs were lifted after the 2002 rezoning and before April 2005, but as of that date they had not been transferred to receiving properties. Based on projects in the works at that time, the department estimated that a further 2,703 acres of land would be preserved by the TDRs needed for those projects.[66] This would bring the total land preserved to 3,168 acres.

Further information on land preserved via the TDR program is available in the county's Land Preservation, Parks, and Recreation Plan, published in December 2005. In that document, it was reported that TDRs had preserved 1,313 acres (St. Mary's County 2005).[67]

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[65] Zoning codes in most communities include limits on the floor area of commercial buildings. The floor area ratio is expressed as a percentage of the lot size. Thus, a limit of 0.40 means that the floor area of a building can be no more than 40 percent of the size of the lot.

[66] At that time, there were 21 development projects pending in the county that would require the use of TDRs to meet their density goals: 10 projects in the Growth Areas and 11 in the RPD.

[67] This same document reports that other land preservation programs in St. Mary's County, including the MALPF program, Rural Legacy, and donated easements held by various land trusts, have preserved 11,867 acres (St. Mary's County 2005).

Finally, Director of the Department of Land Use and Growth Management Denis Canavan estimates that as of August 2006, approximately 1,000 acres of land had been preserved (Canavan 2006). The variability in these figures highlights the need for better recordkeeping in the county, particularly as the TDR program moves forward.

The county has a stated goal in its Comprehensive Plan of preserving 60,000 acres of agricultural land. This goal is quite ambitious and Department of Land Use and Growth staff readily admits that the county is not on target to meet it (Canavan, Sasscher, and Veith 2005). As stated above, approximately 14,000 acres of farmland have been preserved through all programs, though a significant amount of additional open space has been protected via subdivision clustering in the RPD. It is a requirement in St. Mary's County that subdivisions be clustered onto 50 percent of the parcel acreage. In fact, with build-out in the RPD and no use of TDRs, it has been estimated that 53,500 acres of open space would be preserved (Canavan, Sasscher, and Veith 2005). With build-out at a density of 1 du/3 acres and use of TDRs, an estimated 84,700 acres would be preserved: 62,400 acres from TDRs and 22,300 acres of open space.

Thus far, one commercial project in St. Mary's County has used TDRs. In December 2005, the Board of County Commissioners approved the use of 93 TDRs to build a 92,226-square-foot addition to a Wal-Mart store in St. Mary's County (St. Mary's County Board of County Commissioners 2005). It was estimated that the TDRs used in the project preserved 255 acres of RPD land. To our knowledge, this is the only commercial use of TDRs.

The lack of TDR activity prior to the 2002 CZO can be attributed primarily to the ability of developers in St. Mary's County to obtain desired density through means other than TDRs. The most common means of doing this was by creating a PUD. A PUD is basically a rezoning of the particular properties planned for development to allow site-specific zoning standards that are different from those established in the zoning ordinance. PUDs were enabled in the county in 1967, and the densities for residential and mixed use PUDs in St. Mary's County have ranged from 0.615 dus/acre to 5.0 dus/acre. There are 19 PUDs in the county, with the majority of these—15 of the 19—located in the Lexington Park and Hollywood areas near the Patuxent River Naval Air Station. Rural PUDs have not been allowed since the adoption of the Z90-11 Zoning Ordinance in 1990. In 2002, all but two of the previously approved rural PUD rezonings were rescinded with the adoption of the CZO, primarily because no development had proceeded to date due to a lack of sewer access and the presence of soils that would not allow on-site septic system development.

Interestingly, the relatively dense development in the PUDs suggests that there might have been a healthy demand for TDRs had the PUD option not been available. In other words, developers indicated through their actions that reasonably dense subdivisions in the Growth Areas were profitable investments and that a demand for such housing existed in the county. This is borne out by the dramatic increase in TDR sales since 2002. With elimination of the PUD option in the 2002 CZO, as well as elimination of the density bonus for connection to water and sewer systems, developers turned to TDRs to get additional density.[68] The PUD and water/sewer density bonuses prior to 2002 presented a missed opportunity for TDRs in St. Mary's County.

However, the 2002 CZO did not eliminate all non-TDR options for increasing density. If a developer adopts any "design enhancements," such as energy-efficiency practices, green building design, adoption of stormwater management practices, or pitched roof design, the developer can obtain a 0.25 du/acre increase over baseline zoning in the residential low-density areas, as well as in all of the mixed-use areas. Density increases also are allowed when a development includes "affordable housing": an additional 1 unit per acre in Residential Low-Density, Residential High-Density, and all the mixed-use areas. Finally, in Residential Low-Density and Mixed-Use areas, a provision encourages denser development by allowing an additional 2 du/acre to be built by right if overall density in the proposed development meets or exceeds 3.5 du/acre.

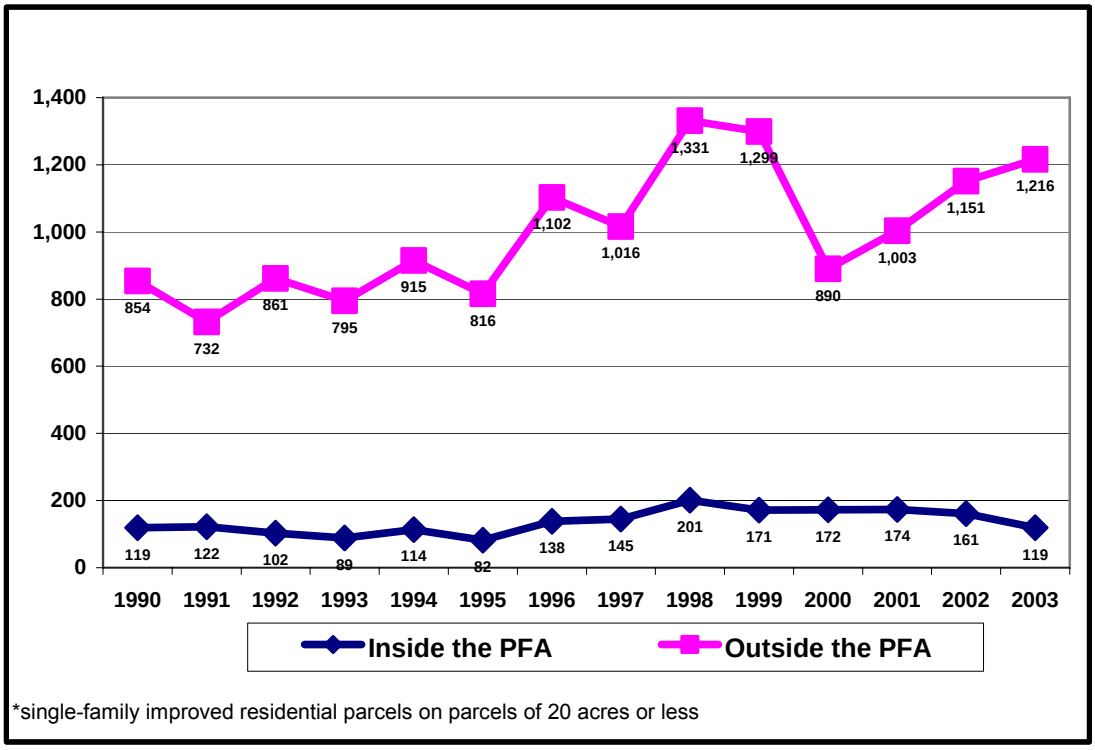
Between 1992 and 2002, 56 percent of all new dwelling units built were located in the RPD and 44 percent in the Growth Areas. Information on the percentage of total acreage developed is unavailable, but an approximate calculation can be made based on the density limits set in the zoning ordinance. Assuming development occurs to the density limits and using the 1 du/5 acre limit for the RPD and the 1 du/acre limit for Residential Low-Density areas (a conservative assumption, as many of the Growth Areas allow more dense development than 1 du/acre), we estimate that approximately 86 percent of the acreage developed over the 1992–2002 period was in the RPD and 14 percent in the Growth Areas. This highlights the sharp discrepancy between number of dwelling units and acreage in High-Density Residential areas

[68] It had been the case that if a developer of a new subdivision agreed to connect to existing water and sewer systems, the developer could get a density bonus of one or two units per acre (depending on the zone). A development that used TDRs and connected to water and sewer could achieve two or three additional dus/acre. In the High-Density Residential Zone (10 du base and 15 du maximum, see Table 5.1), both water/sewer connection and the use of TDRs were required to exceed the baseline density.

versus the more rural RPD developments. While a significant number of units have gone into the Growth Areas, the RPD dominates in terms of acreage developed.

Further information on development patterns is available from the Maryland Department of Planning. The department has tracked the annual number of parcels and acreage developed for single-family dwellings inside and outside PFAs for each county in the state since 1990. While the number of parcels outside PFAs is somewhat greater than the number inside, the acreage outside PFAs far exceeds acreage inside, further confirming our calculations above. Figure 5.7 shows acreage developed in St. Mary's County between 1990 and 2003. Acreage developed outside PFAs ranges from five to more than ten times the acreage developed inside PFAs.

Figure 5.7. Improved Residential Acres in St. Mary's County, MD, Inside and Outside PFAs, by Year Built, 1990–2003*



Source: Maryland Department of Planning, Planning Data Services, December 2005; from Md Property View data.

III. Proposed Changes to the TDR Program

In 2005, the county began studying the TDR program with a view to make changes that would increase activity in the program and preserve more farmland. The local Chamber of Commerce developed a proposal, which the Department of Land Use and Growth Management further revised. In February 2006, the department presented a draft revision to the zoning ordinance for public review and comment. The proposal was discussed at the April 2006 meeting of the Planning Commission and is still under consideration. Canavan (2006) reports that as of August 2006, review of the proposal had been postponed until early 2007.[69]

Under the new plan, sending areas would receive one TDR for every five acres of land; no deductions would be taken for acreage in environmentally sensitive areas, as in the current program.[70] RPD lands still could be either sending or receiving areas; however, all development that takes place in the RPD, beyond the first dwelling unit on a property, would be required to use TDRs. Rural Legacy areas would be limited to 1 du/5 acres, even with TDRs. Instead of requiring two TDRs for each additional dwelling unit beyond baseline density limits in the RPD, the new law would have the number of TDRs required vary with density; as density increases from 1 du/5 acres to a maximum of 1 du/3 acres, the number of TDRs needed increases according to the schedule in Table 5.2.

Table 5.2. Proposed Density Limits and TDR Requirements in the Rural Preservation District in St. Mary's County, MD

Density Limit	Number of TDRs required*
1 du/5 acres	1 TDR per du
>1 du/5 acres & ≤ 1 du/4 acres	2 TDRs per du
>1 du/4 acres & ≤ 1 du/3 acres	3 TDRs per du

*1 dwelling unit allowed on a property without TDRs.

[69] The text of the proposed ordinance and accompanying documents are available from St. Mary's County Department of Land Use and Growth Management (2006).

[70] One TDR is deducted for each existing dwelling unit on the property.

The new law would drop most density increases through means other than TDRs. Affordable housing still would provide a density bonus, but design enhancements in the current code, such as roof pitch and energy efficiency, would be dropped. It is expected that, like dropping the PUD and water/sewer provisions in 2002, this would provide a further boost to the TDR program.

Finally, the county is proposing a "fee in lieu" program: a developer would be able to pay a fee in lieu of purchasing TDRs in order to increase density in the RPD to the maximum of 1 du/3 acres. The revenues collected in the program would be used to support a county PDR program.

The most controversial component of the revisions, and the one providing the most drastic change from the current program, is the requirement that any building in the RPD beyond the first unit would require purchase of TDRs. The baseline density limit of 1 du/5 acres is effectively null and void in this situation. A landowner could build one house on the property, but TDRs would need to be purchased beyond that initial dwelling. The fee-in-lieu program also has generated a bit of controversy, with some observers wondering if developers will turn to that option rather than purchasing TDRs (see St. Mary's County Planning Commission 2006).

The objective of the proposed changes is to spur the use of TDRs and thus preserve more acreage. While the 2002 zoning changes jump-started the program to some extent, many TDRs thus far have come from small lots and not large farms (Canavan, Sasscer, and Veith 2005). The county is trying to find a way to preserve significant blocks of farmland acreage.

IV. Conclusion

The lack of sales activity in the first dozen years of the St. Mary's County TDR program—only nine TDRs were sold between 1990 and 2002—suggests that serious problems existed in the program's design. The most serious flaw was the granting of density increases through means other than TDRs; developers almost always turned to those cheaper and easier alternatives. The alternatives that were particularly appealing were PUDs and density bonuses for connections to water and sewer. Interestingly, the fact that development took place at densities higher than the baseline limits set by the zoning ordinance and in the Growth Areas

outside the RPD[71] indicates that there might have been some demand for TDRs had the other options for density increases not been available.

The 2002 CZO eliminated the PUD and water/sewer options, and, as a result, TDR sales have increased somewhat since. Between 2002 and April 2005, an additional 146 TDRs were lifted and sold to developers and 445 TDRs were lifted but had not been used for development as of April 2005. Canavan (2006) estimates that as of August 2006, approximately 1,000 acres of land have been protected through the sale of TDRs. While this is well below the acreage preserved through other land-preservation programs employed in the county—the MALPF program has preserved approximately 7,000 acres and nearly 6,000 acres have been preserved through other programs such as Rural Legacy and the MET—the increase in recent years suggest some promise for the future of the TDR program in St. Mary's County.

The changes to the program that the county currently is considering are designed to further spur TDR sales and shift development away from the RPD and toward the Growth Areas. Like the Calvert County program, the St. Mary's TDR program allows TDRs to be used in the RPD to increase density. The changes under consideration would require TDR use for any building in the RPD beyond the first dwelling unit on the parcel and would require a greater number of TDRs for projects with higher density, up to the limit of 1 du/3 acres with TDRs.

St. Mary's County has set an ambitious goal of 60,000 acres of preserved land. With just less than 14,000 acres currently preserved, it is falling well short of this goal. The TDR program has contributed very little to the effort to date, but we feel that the 2002 changes and the current proposed revisions, along with increased experience with the program by farmers and developers, will lead to more program activity and more preserved farmland.

While the county would like to encourage development in the Growth Areas and not in the RPD, it may be that, like Calvert County, allowing TDR use in the rural areas will jump-start the TDR program and lead to a healthy supply and demand for development rights. A healthy TDR market is a sign that land is being preserved. It may be the case that eventually St. Mary's County will be able to down-zone both sending and receiving areas to encourage more use of TDRs in the more developed receiving areas, while reducing the density of development in the RPD. However, experience with the TDR program probably is needed before this can take place.

[71] As of 1990, PUDs could not be used in the rural areas (see discussion above).

Chapter 6: Other Maryland TDR and Density-Transfer Programs

There are currently 11 counties in Maryland with TDR or density-transfer programs in operation, with an additional county, Cecil County, scheduled to begin its program in January 2007. None of the other programs are as active as the Montgomery County or Calvert County program. Most are plagued with some of the problems discussed for Charles and St. Mary's Counties. In this chapter, we briefly discuss programs that operate in Talbot, Queen Anne's, and Howard Counties. Talbot and Queen Anne's Counties are on the eastern side of the Chesapeake Bay and are rural counties with small, incorporated municipalities. In contrast, Howard County is in the Washington–Baltimore urban corridor and includes the large suburban town of Columbia. The policies we examine also are different across the three counties. Talbot County has a TDR program, and one part of that program, known as the "joint subdivision" provision, operates like a density-transfer program. Queen Anne's County has a TDR program with two components: one that works to preserve open space in the Critical Area and one that targets farmland. Queen Anne's County also has a density transfer program, called the Noncontiguous Development Program. Finally, Howard County has a well-known density transfer program.

I. Talbot County

Talbot County Fundamentals: The Economy, Housing, and Farming[72]

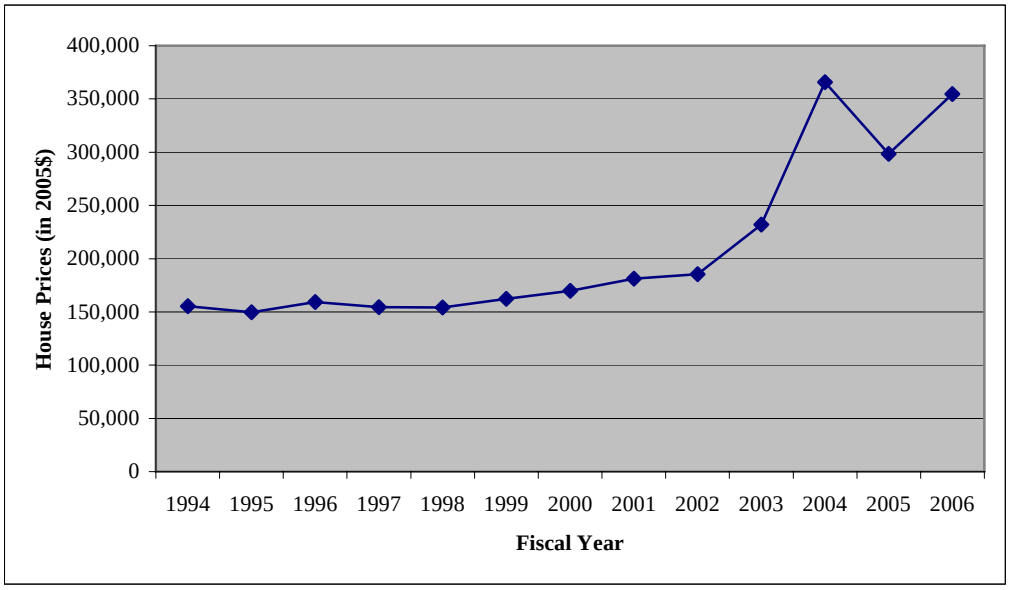
Talbot County lies on the upper Eastern Shore of Maryland and includes the towns of Easton, Oxford, St. Michaels, Wye Mills, and Tilghman Island. The land area of Talbot County is 172,227 acres, and the county has 702 miles of waterfront, which it claims is the most of any county in the continental United States. Approximately 38 percent of its land, or 65,000 acres, lie in the Chesapeake Bay Critical Area. Talbot County's 2003 population was 34,562, making it the least populated county in our study. It is relatively wealthy; in 2003, personal per capita income was $44,321, which ranked it third among Maryland counties, after only Montgomery and Howard Counties. This is somewhat surprising, given that it is far removed from any

[72] Most of the information in this section is available on the Talbot County government web site, http://www.talbotcountymd.gov/, and the Maryland State Data Center of the Maryland Department of Planning (http://www.mdp.state.md.us/msdc/). Some statistics were obtained from the Maryland Department of Natural Resources, http://www.dnr.state.md.us/greenways/counties/queenannes.html; agricultural statistics are from the USDA's Census of Agriculture (see http://www.nass.usda.gov/census/census02/profiles/md).

metropolitan area. Average per capita income for the state of Maryland in that year was only $37,446, significantly below the figure for Talbot County.[73]

House prices are relatively high in Talbot County. Since the early 2000s, prices have increased significantly, and in fiscal year 2006, the median sales price of a house in Talbot County was $318,000 (in inflation-adjusted 2005 dollars). Since 2003, in fact, only three counties in Maryland had higher median prices: Montgomery, Howard, and Queen Anne's Counties. Before that year, Talbot County prices were closer to those in other counties. Figure 6.1 shows sales prices of owner-occupied housing in Talbot County from 1994 to 2006 (on a fiscal year basis) in inflation-adjusted dollars. The graph makes it clear that a sharp increase occurred in the early part of the current decade.

Figure 6.1. Median Sales Price of Owner-Occupied Housing in Talbot County, MD, 1994–2006



Source: Maryland State Department of Assessments and Taxation.

[73] Talbot County's median household income, however, is lower than the state median. The estimate for 2005 from the Maryland Department of Planning (using U.S. Census figures) is $50,100; the state average is $64,300. This discrepancy between household income and personal per capita income seems to be because average household size is much smaller in Talbot County; in fact, it is the smallest in the state (see http://www.dnr.state.md.us/education/growfromhere/LESSON3/hhsize.htm). Talbot County has a high percentage of its population over age 65—22 percent, which is twice the figure for the state of Maryland as a whole (see U.S. Census Bureau 2006).

This increase is due, in part, to the strong real estate market in the entire region. In the other chapters in this report, we saw that house prices rose in all of the counties in our study. Still, the Talbot County increase is quite a bit higher than the others. Between fiscal years 2001 and 2006, the median sales price in Talbot County, in inflation-adjusted dollars, rose 96 percent. Prices also rose because Talbot County became a desirable location for vacation and second homes. Also, as explained in Dehart (2006), an influx of new residents from the western side of the bay moved to the county in recent years. This also would contribute to the house price increase.

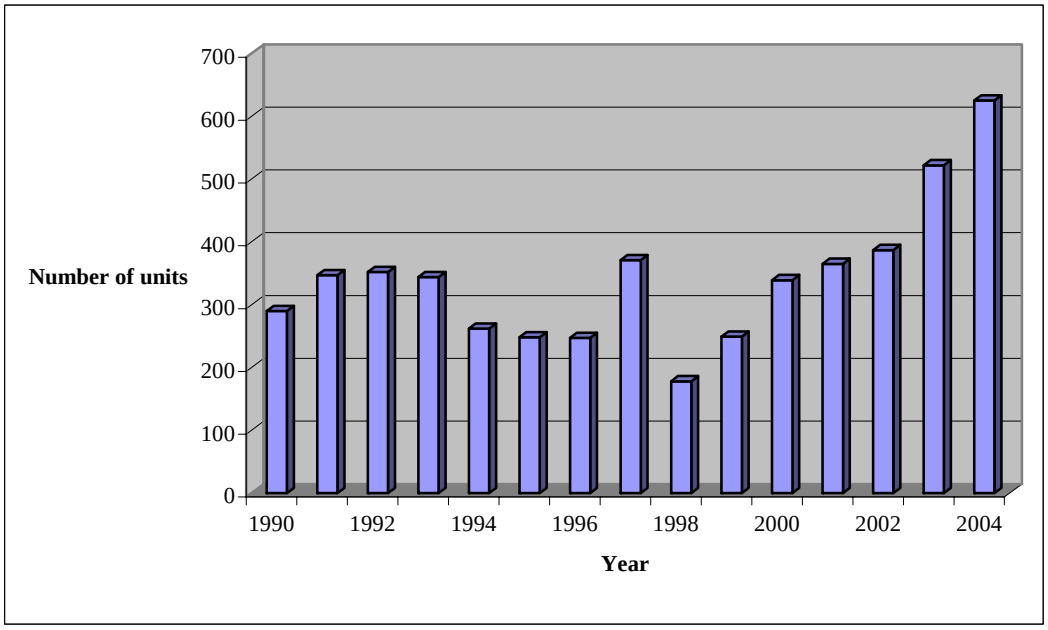
Figure 6.2 shows the extent of building in Talbot County over the 1990–2004 time period. The graph shows annual new housing units authorized for construction in each year. Building in Talbot County remained relatively steady over most of this time period but has risen sharply in recent years. In 2004, 625 new housing units were authorized for construction; more than half of these were in the town of Easton. While this figure is still well below the figures for the counties on the other side of the bay—namely, Calvert, Charles, and St. Mary's Counties—it marks a significant increase from previous levels.

Despite the population growth and rising house prices in recent years, Talbot County remains a relatively rural county with a strong agriculture base. Sixty-two percent of the county's land area, or almost 106,000 acres, is designated as farmland. In 2002, there were 288 farms in the county, giving an average farm size of 367 acres, well above the Maryland state average of 170 acres. Most of this land is harvested cropland, with roughly 86 percent of farmland acreage in production of grains. Talbot County ranks second among Maryland counties in wheat production and fourth in corn and soybeans. In terms of agricultural value, broilers and poultry are the most important contributor. In 2002, 35 poultry farms produced more than $21 million in value.

Talbot County's farms and farm products have relatively high value. The average value of farmland and farm buildings in Talbot County in 2002 was $4,203 per acre, slightly above the state average and well above the average for the southern Maryland counties of Calvert, Charles, and St. Mary's. On a per-farm basis, the values are high compared to other counties in Maryland; this is because farms are relatively large in Talbot. The market value of all agricultural products sold in 2002 from Talbot County farms was more than $33 million; the figure was $116,149 on a per-farm basis. This figure dwarfs the comparable figures for the southern Maryland counties and Montgomery County; Montgomery, the highest of that group,

is just over $72,000 per farm. It is below the figure for Queen Anne's County, however, and for several other Eastern Shore counties.

Figure 6.2. New Housing Units Authorized for Construction in Talbot County, MD, 1990–2004



Source: Maryland Department of Planning.

Because Talbot County does not have the growth pressures of the counties located closer to the metropolitan area and because its farms produce relatively high-value products, farmland is not under as much threat of development as in some other Maryland counties. Nonetheless, the house price and building data shown above indicate that the county is experiencing some growth and has become a desirable place to visit and live. In the next section, we briefly discuss the county's efforts to preserve its agricultural heritage, including the TDR program.

Zoning, TDRs, and Land Use in Talbot County

Talbot County promotes several efforts to preserve farmland, and as of 2004, had more than 28,000 acres protected from development through various programs, including MALPF,

the MET, and the county's TDR program.[74] This means that as of 2004, over one-quarter of the land in agriculture in the county was protected from development through some kind of development restriction or easement. The acres protected through the TDR program, however, have been few. Dehart (2006) reports that 790 acres have been protected through the sale of TDRs, which is less than three percent of the total preserved to date.

Talbot County's TDR program began with a focus on Critical Areas in 1989 and was broadened to agricultural lands in 1991. The county currently is undergoing a rezoning and will modify the TDR program to some extent. We focus our attention on the existing zoning and TDR rules in order to analyze why so few acres have been preserved in the program. We end with a brief discussion of the planned changes; Dehart (2006) includes more discussion of the proposed Talbot County program.

Table 6.1 shows the residential zoning for four zoning categories in Talbot County. Subdivisions in the Rural Agricultural Conservation (RAC) district may double density over the baseline with the use of TDRs. Density in a clustered subdivision in this zone is 1 du/10 acres; with TDRs the density limit increases to 1 du/5 acres. The subdivisions must be clustered, leaving a percentage of the total acreage in open space. The open-space requirement varies with the size of the subdivision, beginning at 25 percent for subdivisions with acreage between 6 and 20 acres, rising to 50 percent for subdivisions of between 20 and 30 acres, and ultimately capping at 75 percent for subdivisions of 160 acres or more.[75]

TDRs must come from a sending property in the RAC district within the same county election district; thus, the program is a rural-to-rural transfer program. The sending property must place a "reservation of development rights" on 10 acres for every one development right that is transferred to a receiving property. This reservation of development rights is granted to the county. It restricts residential and commercial building on the land but not the building of agricultural structures. An interesting and unusual provision in the ordinance is that landowners who sell their development rights have the option of transferring them back onto their property at a later date. Landowners may buy back TDRs and use them on the original sending site or petition the County Council to remove the restrictions if the land is rezoned. Dehart (2006) quotes tax lawyers as stated that the reservation of development rights

[74] For a map of existing land uses see: http://www.talbotcountymd.gov/uploads/File/P&Z/maps/Map%202-1%20Existing%20Land%20Use.jpg.

[75] The minimum parcel size is 6.1 acres.

agreements do not prevent sending properties from being assessed at unrestricted, fair-market values for estate tax purposes.

Table 6.1. Zoning and TDR Regulations in Talbot County, MD

Zoning Category	Density Limit
Rural Agricultural Conservation District (RAC)	
Rural subdivision	1 du/20 ac + 3 additional dus
Cluster subdivision	1 du/10 ac + 3 additional dus
Cluster subdivision with TDRs	1 du/5 ac + 3 additional dus
Rural Conservation District (RC)	1 du/20 ac 1 du/5 ac with joint subdiv.
Rural Residential District (RR)	1 du/5 ac
Village Center (VC)	1 du/ac, w/o sewer 4 du/ac, w/sewer
Town Residential District (TR)	1 du/ac, w/o sewer 4 dus/ac, w/sewer

Another use of TDRs is through the joint subdivision provisions governing properties in the Rural Conservation (RC) district. As seen in Table 6.1, the density in these areas can go as high as 1 du/5 acres from a baseline of 1 du/20 acres through the "joint subdivision" provision in the ordinance. This provision is essentially a density-transfer program within the rural areas, such as the programs in Howard, Harford, and Queen Anne's Counties. A joint subdivision application must include plans for sending and receiving areas, both within the same election district. At least 20 acres of property in the sending area must be protected from development for every development right transferred to the designated receiving area; each development right can be used to build one dwelling unit. The sending area must be located "within plant and wildlife habitat areas, drainage basin of anadromous fish propagation waters, natural park sites, or recreation open space sites" (Sec. 190-58 of Talbot County Zoning Code) in the RC district. A further requirement of approval by the planning department is that the development proposed for the receiving areas must protect any shoreline from erosion.

Dehart (2006) reports that only 790 acres have been protected through TDRs in Talbot County since 1989 and these acres came through only three TDR transactions; a total of 49 TDRs were sold in these transactions. From the time the program was started in 1991 through 2004, only 580 acres were protected; an additional 210 acres were protected in 2005 via a transfer of development rights to the town of Wye Mills.

The limited activity in Talbot County seems to be attributable to several factors. First, the types of soils and high water table in the county restrict the use of individual septic systems to properties with adequate acreage. In most cases, this means that at least two acres are necessary for each dwelling unit. In many cases, clustering without TDRs will lead to developments on two-acre lots. A simple example illustrates the situation.

Consider a 100-acre property in the RAC or RC zone:

- At baseline zoning, the property would be permitted 8 dwelling units—1 du/20 acres + 3 dus.
- If the development is clustered on to 30 acres, density can increase to 1 du/10 acres (+ 3 dus). This would lead to 13 dwelling units, and the average lot size in the development would be 2.3 acres, leaving 70 acres of open space.
- Finally, if the development used TDRs and clustered onto 30 acres, density could increase to 1 du/5 acres (+3 dus). This would lead to 23 units, and the average lot size would be 1.3 acres; again, there would be 70 acres of open space. This lot size would not be feasible with individual septic systems.

In this 100-acre parcel example, clustering alone leads to average lot sizes as small as 2.3 acres, which in many locations may be all that is allowed with individual septic systems.

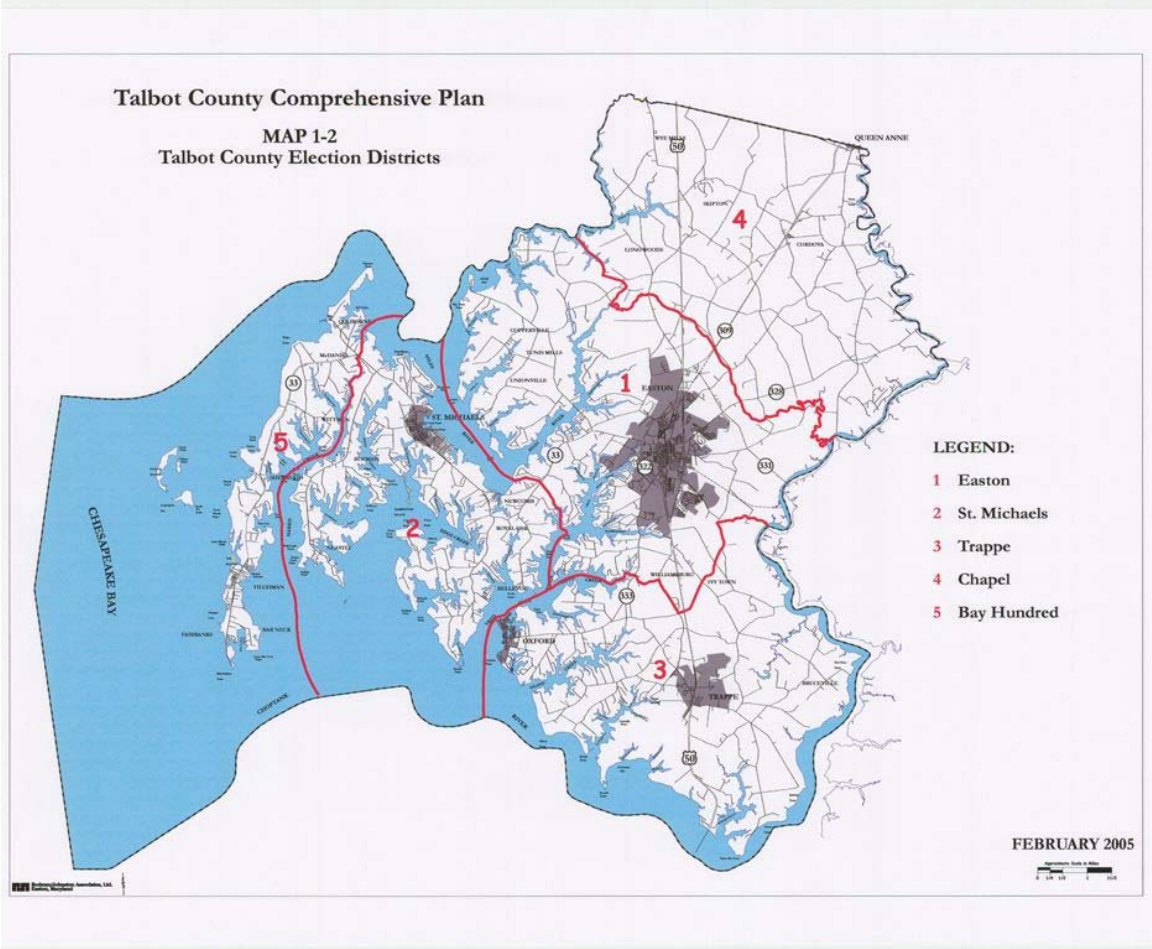
Shared septic systems make smaller lots feasible, and the county goes so far as to suggest the use of such systems in their zoning code but such systems currently are costly; developers do not feel that the costs are justified at this time in Talbot County (Dehart 2006).

This brings us to the second reason for the lack of activity in the Talbot TDR program. As compared with Queen Anne's County, Talbot County has not yet seen as much pressure for development. The development that has taken place has been in and near municipalities and in most cases, water and sewer connections have been used. Some municipalities have annexed land where developments have gone in. Thus far, there has been little incentive for the

municipalities to require TDRs as part of annexation. Land that has been preserved in the county mostly has been the result of MALPF and other easement programs rather than TDRs.

A final reason why TDRs have not been used very much in Talbot County may be due to the administrative hurdles imposed by the joint subdivision requirements. These requirements, which are similar to the Howard County density-transfer program and Queen Anne's NCD program, both of which are discussed below, require a joint submission for sending and receiving parcels to transfer density in the RC zone. In addition, both properties must lie in the same election district. Although Figure 6.3 shows that some of the election districts are large, this requirement still could impose a significant burden. Dehart (2006) concludes that the joint subdivision requirements are a principal reason for the low TDR sales in Talbot County. However, given the high level of activity in the Queen Anne's NCD program, we feel that the other factors highlighted above may be relatively more important.

Figure 6.3. Map of Talbot County, MD, Election Districts



In May 2006, draft revisions to the zoning ordinance were proposed in Talbot County. The revisions substantially limit the density allowed in new subdivisions and make clustering mandatory everywhere. Zoning designations would be changed if the revisions are adopted. The RAC zoning district would be dropped in favor of four new districts: the Agricultural Conservation (AC) district, the Countryside Preservation (CP) district, the Western Rural Conservation (WRC) district, and the Town Conservation (TC) district. The unclustered rural subdivisions allowed in the RAC would no longer be allowed in these areas. Furthermore, the higher densities permitted with clustering in the RAC would only be permitted with TDRs. Table 6.2 below shows the new density limits, with and without TDRs (Dehart 2006).

Table 6.2. Proposed New Zoning and TDR Regulations in Talbot County, MD, May 2006

Zoning Category	Density Limit
Agricultural Conservation District (AC)	1 du/20 ac + 3 dus 1 du/5 ac + 3 dus (with TDRs)
Countryside Preservation District (CP)	1 du/20 ac + 3 dus 1 du/10 ac + 3 dus (with TDRs)
Western Rural Conservation District (WRC)	1 du/20 ac + 3 dus 1 du/10 ac + 2 dus (with TDRs) if parcel< 40 ac 1 du/10 ac + 1 du (with TDRs) if parcel>40 ac and <100 ac
Note: Clustering required in all subdivisions, with developed clustered on between 25% and 50% of the property.	

The most acreage lies in the AC district, which includes much of the land currently in the RAC. The CP districts primarily form greenbelts around the towns, and the WRC areas lie in the western part of the county with significant shoreline and Critical Area acreage.

The fact that extra density can no longer be obtained simply by clustering but must come with a TDR purchase may give a boost to the TDR program. Our example above highlights the possibilities. However, if little development was going into these rural areas before, it seems unlikely that this change will have a large impact. In fact, requiring TDRs will increase the price of building at the clustering density limit and may lead to more developments at the baseline limit or not at all. The proposed changes also reduce the maximum density in

some areas. For example, in the WRC, the maximum density with TDRs is only 1 du/10 ac, down from 1 du/5 ac in the current regulations; this also would tend to limit TDR demand.

Although the county is attempting to promote the idea have interjurisdictional transfers—transfer of development from rural county areas to municipalities—Dehart (2006) reports that there is insufficient cooperation between the municipalities and the county for this to work. One problem in the existing program is that many new developments have gone in on land annexed by the municipalities, allowing higher density to be attained without a TDR requirement. The idea of requiring TDR use on annexed properties has been discussed in Talbot County (Environmental Finance Center 2005) and is part of the focus of the work on TDRs on the Eastern Shore by Dehart (2006).

II. Queen Anne's County

Queen Anne's County Fundamentals: The Economy, Housing, and Farming[76]

As the first county on the eastern side of the Chesapeake Bay Bridge, Queen Anne's County is the gateway to Maryland's Eastern Shore. It has eight incorporated towns and a significant amount of development on Kent Island, the area immediately after the Bay Bridge. The population of the county in 2000 was 40,563 and is projected to reach 47,600 by 2010. Most of the growth is occurring along the Route 50/301 corridor between Kent Island and Grasonville. At just under 6,000 residents, Stevensville, an unincorporated town on Kent Island, is the largest town in the county; Centreville is the largest incorporated town, with just under 2,000 residents, and is also the county seat. The county has a land area of 238,300 acres and more than 450 miles of waterfront along the Chesapeake Bay, Eastern Bay, the Chester River, and other tributaries.

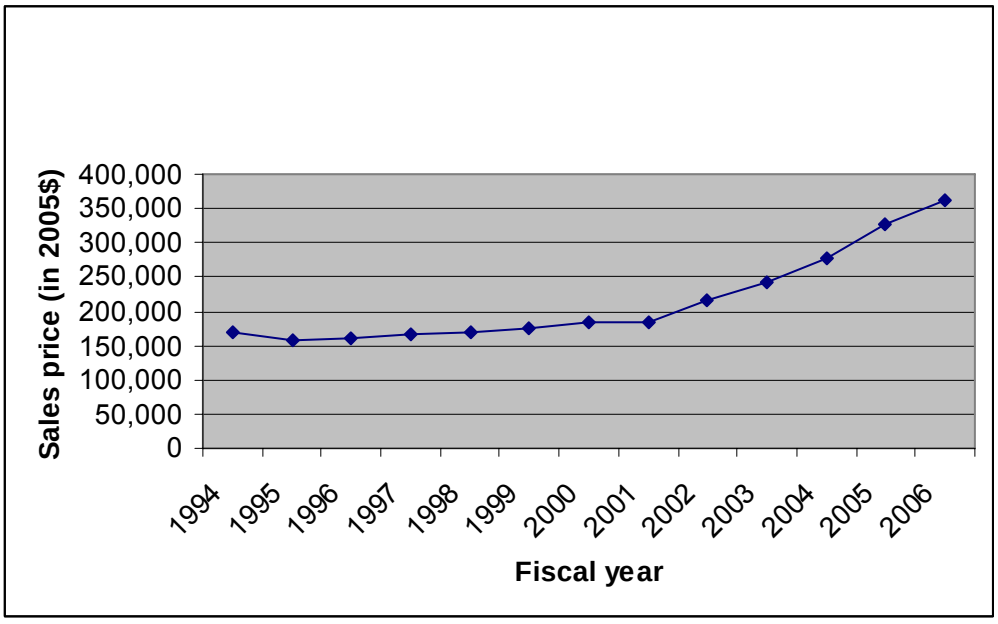
Estimated median household income for 2005 in Queen Anne's County was $71,750, the seventh highest in the state.[77] As in Talbot County, house prices in Queen Anne's County are

[76] Most of the information in this section is available on the Queen Anne's County government web site, http://www.qac.org/; Wikipedia, http://en.wikipedia.org/wiki/Queen_Anne's_County,_Maryland; the Maryland State Data Center of the Maryland Department of Planning (http://www.mdp.state.md.us/msdc/); and the Maryland Department of Natural Resources, http://www.dnr.state.md.us/greenways/counties/queenannes.html. The agricultural statistics are from the USDA's Census of Agriculture (see http://www.nass.usda.gov/census/census02/profiles/md).

[77] Per-capita personal income for 2005 was $35,953, below the state average. Queen Anne's income figures contrast with Talbot County's, where per capita personal income is high but household income is relatively low. The

relatively high and have risen sharply in recent years. Figure 6.4 shows median sales prices in inflation-adjusted dollars for each year from 1994 to 2006 (in fiscal years, June to June). In fiscal 2006, the median price of a house in Queen Anne's County was $375,000 ($361,000 in 2005 dollars, as shown on the graph), the third highest in the state, behind only Montgomery and Howard Counties. Between 2000 and 2006, the annual median house price in Queen Anne's County more than doubled in real terms.

Figure 6.4. Median Sales Price of Owner-Occupied Housing in Queen Anne's County, MD, 1994–2006



Source: Maryland State Department of Assessments and Taxation.

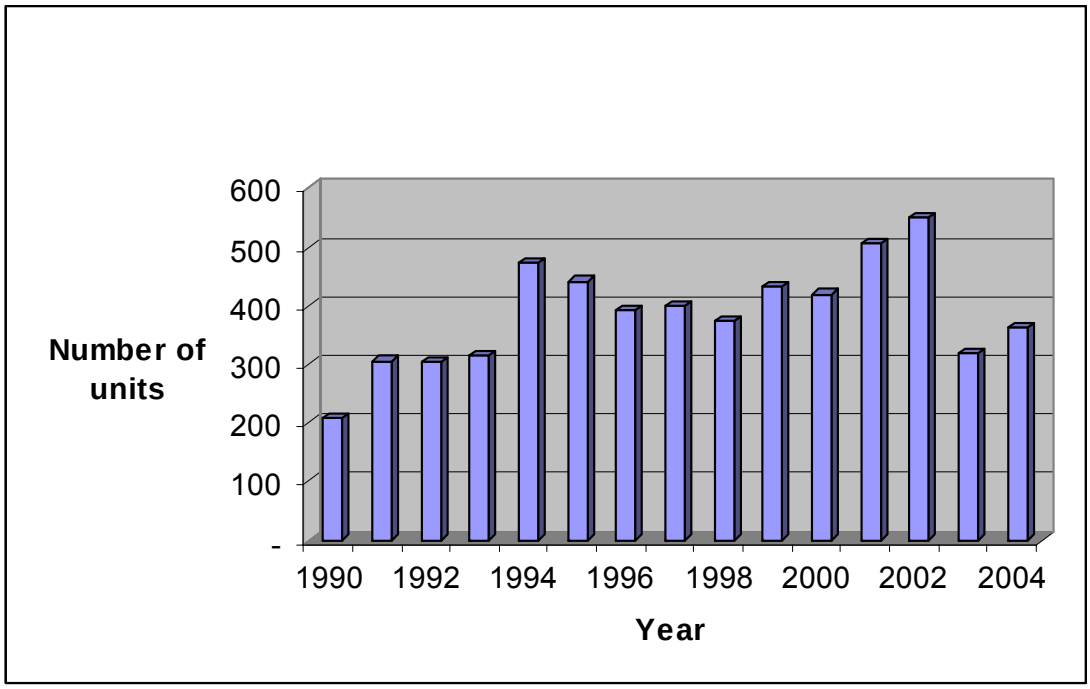
Building in Queen Anne's County has fluctuated year to year and there does not appear to be any consistent trend in recent years. Figure 6.5 shows new housing units authorized for construction each year between 1994 and 2004.[78] In 2004, the most recent year for which data are available, a total of 362 new units were authorized. This is down from a peak of 549 in 2002 and is significantly lower than the other counties in our study. Compared with neighboring Talbot County, for example, which has fewer residents, Queen Anne's County had significantly less construction in both 2003 and 2004. As is the case with Talbot County, the relatively high

difference appears to be attributable to average household size, which is high in Queen Anne's but quite low in Talbot County.

[78] These figures are on a calendar year basis, not fiscal year.

income and house prices in Queen Anne's County and pressures on growth have not yet diminished greatly the role of agriculture in the county. Queen Anne's County remains strongly agricultural, with an emphasis on maintaining its rural character. In 2002, 155,566 acres of land in the county were in agriculture—65 percent of the total land area. In that same year, there were 443 farms, about the same number as in 1997. This means that average farm size in Queen Anne's County is approximately 350 acres, more than twice the average for the state of Maryland as a whole. Eighty-four percent of the farmland in Queen Anne's County is cropland, with soybeans the most important crop in terms of acreage, followed by corn.

Figure 6.5. New Housing Units Authorized for Construction in Queen Anne's County, MD, 1990–2004



Source: Maryland Department of Planning.

Farming in Queen Anne's County is of relatively high value. The market value of all products sold in 2002 was more than $66 million. While less than some other Eastern Shore counties such as Worcester, Somerset, and Wicomico, this figure is about twice that of Talbot County and far higher than Montgomery County and the southern Maryland counties discussed in previous chapters. Most of the revenues—approximately 70 percent—are earned from crop sales, with about 30 percent from poultry and livestock. Poultry farming in the county is of very high value: there were 33 poultry farms in 2002 that earned approximately $14

million in revenues. Overall, average per-farm revenues in 2002 were $149,000, about 40 percent greater than the average for the state.

Queen Anne's County obviously does not have the growth pressures of the counties located closer to the metropolitan area and its farming is relatively high-value, but the county's proximity to the Bay Bridge and its desirable waterfront are leading to some development pressures. In the next section, we discuss the county's zoning and TDR policies.

Zoning, TDRs, and Land Use in Queen Anne's County[79]

Queen Anne's County uses several approaches to preserve farmland and open space. Approximately 55,680 acres of land are protected from development through state agricultural and environmental easements or as deed-restricted open space as a result of cluster subdivisions or TDR projects. Publicly owned parkland in the county accounts for an additional 7,366 acres of preserved, undeveloped land.[80]

Queen Anne's County has a TDR program that has two separate components—one focused on Critical Areas and one on agricultural land preservation—and a density-transfer program called the Noncontiguous Development (NCD) program. Each of these programs has contributed some acreage to the total preserved land in the county, but the programs operate somewhat differently from one another. The TDR program, originally adopted in 1987, focuses on farmland preservation; this program was modified in 2004 to facilitate density transfers between parcels in the Critical Area. The NCD program is primarily a rural-to-rural density-transfer program that preserves farmland and open space in the agricultural zoning districts.

The first Comprehensive Plan in Queen Anne's County was adopted in 1965. At that time, 89.5 percent of the land in the county was classified as rural, with density limits of approximately 1 du/acre. A new Comprehensive Plan in 1987 focused on the preservation of large areas of the county for agricultural use and stated an objective of reducing density to approximately 1 du/8 acres. The zoning ordinance passed in that same year established 1 du/10 acre maximum density in the Agricultural (AG) zone and 1 du/8 acres maximum density if the development was clustered onto 15 percent of the parcel. The 1987 ordinance also established the TDR and NCD programs. TDRs could be transferred from sending land in the

[79] Material in this section is from the Queen Anne's County Code; Dehart (2006); Rossing, Cohoon, and DelGaudio (2005); and interviews with officials from Department of Planning and Zoning (August 2005).

[80] These figures are from Rossing, Cohoon, and DelGaudio (2005).

AG or Countryside (CS) zoning districts to receiving properties in the AG, CS, or Suburban Estate (SE) zoning districts. To use TDRs to increase density, it was required that the development be clustered onto 50 percent of the parcel and that the density not exceed 0.9 du/acre.

These same rules applied to NCDs. However, NCDs only were allowed in the AG and CS zoning districts; they were not permitted in the SE zones. The NCD provision in the 1987 zoning ordinance states that "a landowner or group of landowners whose lots are in the same zoning district, but are not contiguous, may file a development plan under Article IX of this ordinance in the same manner as the owner of a single lot." In other words, the NCD program requires that a joint submission for sending and receiving parcels be made and that the parcels lie in the same zoning district. This is very similar to Talbot County's joint subdivision provisions, except that in Queen Anne's County the transfer of density is not limited to a single election district. The NCD language in the 1987 zoning ordinance has stayed the same in subsequent zoning ordinances passed in 1994 and 2004.

The 1994 and 2004 ordinances included important changes to the TDR program. In 1994, receiving areas for TDRs were limited to the Growth Areas and density bonuses in receiving areas were reduced to only 25 percent. TDRs could no longer be used to increase the density of development in the AG zoning district. In fact, Dehart (2006) reports that the area of land in the designated Growth Areas where TDRs can now be used, which covers a range of residential zoning districts, amounts to only 6,400 acres. By contrast, the AG zoning district covers 209,000 acres or approximately 88 percent of the county land area. These figures highlight the relatively small land area that is now the TDR receiving area. The 1994 law also allowed TDRs to be used for commercial buildings, providing a 25 percent increase in floor area and impervious surfaces in Growth Areas with TDRs. There has been no commercial use of TDRs, however, and Dehart (2006) quotes a developer as stating that the small density bonus, limited locations, and administrative costs of using TDRs make them not worthwhile for commercial projects. No significant changes were made to the NCD provisions in 1994. Table 6.3 shows zoning, TDR, and NCD regulations for Queen Anne's County.

The 2004 zoning ordinance created a program in which TDRs can be used in Critical Areas.[81] The Critical Area regulations, developed by the state, act as an overlay to the county's

[81] Some other more minor changes were made to the TDR program. For example, TDRs used in particular election districts must come from properties in those same districts.

zoning. Land in the Critical Area generally is subject to 1 du/20 acre limits, regardless of the zoning district in which the land lies. The county's law allows for TDRs to be transferred from properties in the Resource Conservation Area (RCA) to other properties in any of the Critical Area designated zones—RCA, Limited Development Areas, or Intensely Developed Areas. With TDRs, density in the RCA can go as high as 1 du/5 ac, provided that overall average density in the RCA does not go above 1 du/20 acres.

Table 6.3. Zoning, TDR, and NCD Regulations for Queen Anne's County, MD (non-Critical Areas only)

	Baseline density limit	Density limit with TDRs	Density limit with NCDs
Agricultural	1 du/20 ac 1 du/8 ac (w/clustering)	NA	0.9 du/ac (w/clustering)
Countryside	1 du/5 ac[a]	1 du/4 ac[c]	0.9 du/ac
Estate	1 du/2 ac[a]	1 du/1.6 ac[c]	NA
Suburban Estate	1.25 du/ac[b]	1.56 du/ac[b,c]	NA
Suburban Residential	2 du/ac[a,b]	2.5 du/ac[b,c]	NA
Neighborhood Conservation	Min. lot sizes ranging from 8,000 ft^2 to 5 acres[a]	Varies[c]	NA
Urban Residential	3.2 du/ac[a,b]	4 du/ac[b,c]	NA

Notes: In TDR program, 1 TDR allocated for 8 acres of land in AG sending area; 1 for 5 acres in CS sending area. One additional unit can be built with 1 TDR. In NCD program, minimum of 40 acres, or half the acreage of the development parcel, whichever is less, must be preserved for each project.

[a] Clustering requirements, ranging from 15% to 80%, exist in these zoning districts.

[b] Density limits for single-family dwelling units; separate limits exist for multi-family units.

[c] Receiving sites must be located in designated Growth Areas. Density limits in table correspond to a 25% TDR density bonus.

NA=not applicable.

The Queen Anne's County TDR and NCD programs have protected a significant amount of acreage—though not as much as Montgomery and Calvert Counties. Table 6.4 shows the amount of deed-restricted acreage as a result of all programs, by time period. Just less than 10,000 acres are permanently protected from development in the county from TDR and NCD programs. The 1994 changes to the TDR program, however, caused some significant shifts in how land is being protected. Before 1994, TDRs accounted for most of the activity—2,180 acres compared to only 356 from the NCD. Since 1994, with TDR use limited to designated Growth

Areas, the NCD program has accounted for most of the preserved acreage, while the TDR program has been relatively dormant with the exception of Critical Area transactions. A total of 5,032 acres have been protected by the NCD program over the 10-year period between 1995 and 2004, with another 1,595 acres pending approval as of 2005.

Table 6.4. Acres Protected with the TDR and NCD Programs in Queen Anne's County, MD

	TDRs	NCD	Total
1987-1994	2,180	356	2,536
1995-2004	464	5,032	5,496
Pending		1,595	1,595
Total	2,644		9,627
Source: Rossing, Cohoon, and DelGaudio, 2005.			

Some have argued that this program in particular is creating more development in Queen Anne's County than would have occurred in its absence because the program transfers development rights from the north, where no development is likely for some time, to the south, where development demand is high. Development in the AG and CS zones in the south can have average density up to almost 1 du/acre with NCDs, compared to the baseline of 1 du/8 acres; thus, significantly more houses can be built on a given acreage. The county must weigh these outcomes against the value of the preserved land in the north and other land-use goals.

These results clearly show that the demand for new development and additional density in the county lies in the AG and CS zones. Moreover, the baseline density limits in the Growth Areas are generous and appear to be above what the market is demanding. In the Urban Residential district, baseline limits are 3.2 du/ac, but county officials report that most development is going in at 2.5 du/ac or below.[82] The NCD program has no restrictions on the location of sending and receiving areas; thus, activity is taking place where the market dictates: land in the northeastern part of the county is protected to increase density on properties closer to the Bay Bridge.

[82] Information provided at meeting with Queen Anne County officials, August 24, 2005.

Current activity in the Queen Anne's County TDR program primarily is due to the Critical Area provisions. The price for these TDRs currently is quite high. Dehart (2006) reports that while Critical Area TDRs traded for about $35,000 in the past, as supply has dwindled and the value of waterfront property has risen, they have sharply increased in value. Recent sales have been between $250,000 and $265,000 per TDR. By contrast, non-Critical Area TDRs are not being traded at all—they are essentially of no value with the current zoning provisions. The market for Queen Anne's Critical Area TDRs is strikingly similar to that for Montgomery County's "Super TDRs." These separate markets have high prices relative to the prices in the traditional TDR markets. The difference is that in Queen Anne's County, Critical Area TDRs are purchased by developers and used to increase density on other parcels in the Critical Area; no such possibility currently exists in Montgomery County, where the county is considering options for purchasing and retiring the rights.

III. Howard County

Howard County Fundamentals: Economy, Housing, and Farming [83]

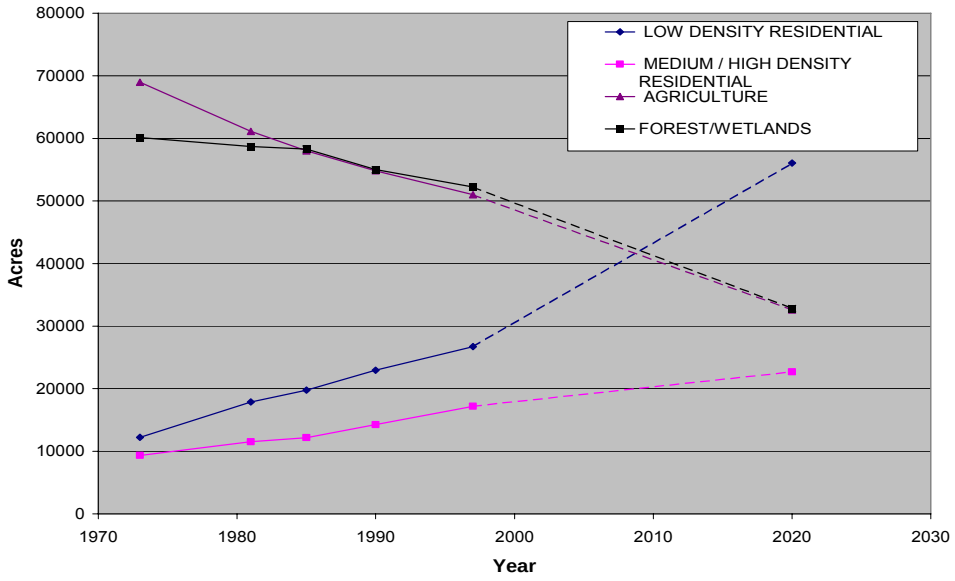
Howard County is one of the fastest growing counties in the Baltimore–Washington corridor. It is located between the two cities, about 10 miles southwest of Baltimore and 20 miles northeast of Washington, DC. It has a land area of 160,000 acres and had a population of about 271,000 in 2005. Growth since 1960 has been very rapid. The county population grew by 32 percent during the 1990s, one of the fastest growth rates in the state, but it has slowed some with a population increase of about 10 percent between 2000 and 2005. The county is one of the wealthiest in the state, with median household income of almost $80,000 in 2003, the highest in all of the counties analyzed in this report.

The eastern part of Howard County includes the city of Columbia and is heavily urban. The northern and western parts of the county traditionally were agricultural areas and border on the more rural counties of Carroll and Frederick. The county has been actively involved in preservation efforts in its agricultural areas, introducing one of the first PDR programs in the country in 1984. More recently, county planners have introduced a density-transfer program.

[83] Information on Howard County can be found at the county web site: http://www.co.ho.md.us/default.asp; for land-preservation and land-use issues from the planning and zoning site: http://www.co.ho.md.us/DPZ/DPZ_HomePage.htm . Data also was drawn from the Maryland State Data Center of the Maryland Department of Planning (http://www.mdp.state.md.us/msdc/). Agricultural statistics are from the USDA's Census of Agriculture (see http://www.nass.usda.gov/census/census02/profiles/md).

Figure 6.6 shows the trends in land use in Howard County since the early 1970s and the State Department of Planning's trend forecasts to 2025.[84] The trends and outlook for Howard County are noticeably different in some ways that other counties in this study. The amount of land in low-density residential development (less than 3.5 units per acre) accounts for a greater share of overall development than in many other counties and is forecast to grow rapidly through the early part of this century. In addition, the sum of land in all residential uses is forecast to be much greater than land in forests and agriculture by 2025. This is not the case for other counties in our study, including Montgomery County, which is another heavily urban county.

Figure 6.6. Land-Use Trends in Howard County, MD, with Forecast to 2025



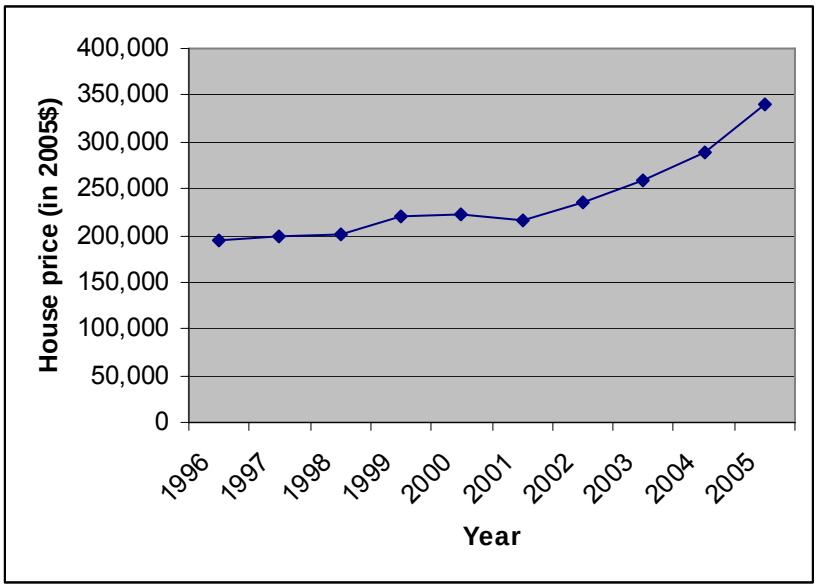
Source: Maryland Department of Planning.

House prices are high in Howard County. The median sales price reached almost $340,000 in 2005, second in the state only to Montgomery County. Like other areas of the state, housing prices have risen rapidly in the last five years. Figure 6.7 shows the trend in median housing prices since the mid 1990s, adjusted for inflation. Prices have risen about 75 percent

[84]The Maryland Department of Planning assumes that low-density development is anything less than 3.5 dwelling units per acre. See more on land use definitions at http://www.mdp.state.md.us/zoningtext.htm.

since the late 1990s (in current dollars they have doubled since 1998). As in other counties close to urban areas, there has been strong development pressure in recent years, and house prices reflect the high demand.

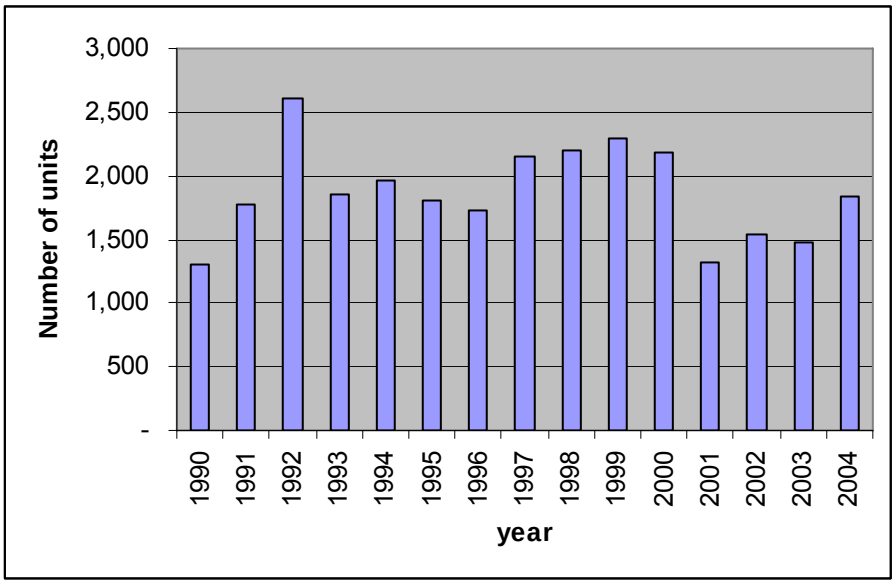
Figure 6.7 Median Sales Price, Owner-Occupied Housing, Howard County, MD, 1996–2005



Source: Maryland State Department of Assessments and Taxation.

The amount of building in the county has been variable since the early 1990s, with peaks in 1992 and the late 1990s. In 2004, the total number of housing units was about 100,000, a little more than one-third the total in Montgomery County. But Howard County is very urban, especially in the southern and eastern parts, and close to 2,000 new housing units have been authorized for construction in the last 10 years, as illustrated by Figure 6.8.

Figure 6.8. New Housing Units Authorized for Construction, Howard County, MD, 1990–2004

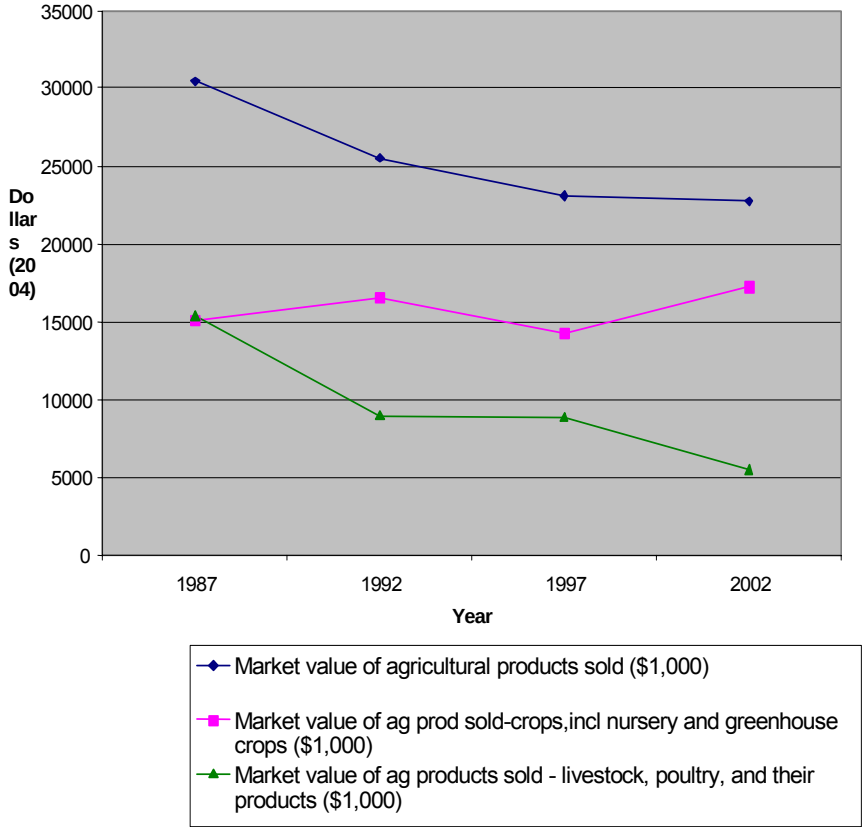


Source: U.S. Department of Commerce, Bureau of the Census, reported and imputed data.

Data from the Department of Agriculture show that the amount of land in farming declined by about 30 percent between 1987 and 2002, but this rate of loss was relatively smaller than it had been in earlier years. As of 2005, about 38,000 acres remain in farming uses, a little less than a quarter of the total land area. After declining since 1987, the number of farms actually increased between 1997 and 2002, from 318 to 346.

Figure 6.9 shows the value of agricultural products sold over time. The value of sales has fallen since 1987, but crop sales have remained steady and even increased recently. The major crop products have been corn, soybeans, and hay, but in recent years products tied more closely to urban markets have played a greater role in the agricultural economy. These include "pick-your-own" fruit and vegetable operations and other small-scale fruit, vegetable, and herb ventures. The equine industry is also a growing part of the Howard County agricultural sector. The average per farm value of agricultural products has remained roughly constant since 1987, at about $70,000 per farm in 2004 dollars.

Figure 6.9. Value of Sales of Agricultural Products, Howard County, MD, 1987–2002



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, 2005

Howard County has had a large agricultural area in the north and western parts of the county and has been actively attempting to preserve some of this land in agriculture since the early 1980s. The county had one of the first and most active PDR programs in the country. The program, established in 1984, is funded through a county real estate transfer tax and to date has spent $193 million in agricultural easement acquisitions, the largest expenditure in the United States to date.[85] The county also has been active in obtaining state funding for land preservation through state programs such as MALPF and Rural Legacy.

[85] This estimate of total spending is from Suzanne Heflin, American Farmland Trust: http://www.aftresearch.org/PDRdatabase/21.htm

Around 1990, county officials realized that agricultural lands were being lost to development at a rate that would eventually consume all of the rural land. Of the 96,000 acres in the rural western section, about 42 percent already had been developed in 1990 and another 23 percent already were committed for some type of developed use, so less than 35 percent of the land remained undeveloped or uncommitted for future development. Both the 1990 and the 2000 Howard County General Plans listed agricultural preservation as a major concern and set out policies to encourage additional preservation efforts.

The guidelines for the 1990 Howard County General Plan identified as a top priority the goal of preserving a large area of the undeveloped land in the rural west; the specific goal was to preserve 30,000 acres in this region. This was to be achieved by a combination of county programs for agricultural land preservation, open-space acquisitions, cluster zoning, environmental or historic easements, and private land trusts.

A major difficulty was that much of the agricultural land in the west was zoned for density limits of either 1 du/acre or 1 du/3 acres. This created strong development pressure in these regions for low-density development, particularly because this area is close to the urban centers of Washington and Baltimore. The county has not been able to change density levels to agricultural zoning (of 25 acres per unit or higher) despite several attempts to do so, but it did implement some zoning changes along with a number of new land-preservation programs. These were the density-transfer programs and the cluster-development provision.

The Density-Transfer Programs, Zoning, and Land Use in Howard County

The county implemented two density-transfer programs in the early 1990s, both of which encourage the transfer of density from the agricultural areas of the western region to the more developed parts of that region. They involve the transfer of allowable building lots within the rural region and result in the permanent preservation of land. A density-exchange program involves a private transaction between two property owners (or a single party if one person owns both properties).[86] A property owner will sell the rights to develop in one area to a landowner who can use those rights to develop in another area. The overall goal is to transfer development to areas that already have more development and to preserve land in larger parcels in more rural areas.

[86] Sometimes, a developer will buy both properties, the one to be preserved and the one to be developed. The density is transferred, then the preservation property is usually sold and the developable property is developed and sold.

The rural west has two major zoning districts: the Rural Residential (RR) and the Rural Conservation (RC) areas. The RR region through the middle of the rural west already had a good deal of development by the early 1990s, and the RC area still had larger, active agricultural areas. In the early 1990s, the baseline average development density in these areas was changed from 1 unit on 3 acres to 1 unit on 4.25 acres.

Under the Density Exchange Option (DEO), landowners in the RC zone can sell development rights for transfer to another zone if the sending parcel is at least 50 acres in size on its own or 20 acres in size if it is adjacent to another large property that already is preserved or in parkland.[87] Density can be transferred at a maximum rate of one unit per three acres. Receiving parcels can be in either RR or RC zones. However, for development in the RC zone, the lot or parcel must be smaller than 50 acres in size and adjacent to lots of 10 acres or less along at least 60 percent of its property perimeter. In addition, the RC zones require that parcels of 20 acres or more use cluster development on the site, with lots being no more than 1 acre in size. There is no minimum size restriction for the plat area if the development is in the RR district and no cluster development is required. Density in receiving parcels can be developed up to an average of one dwelling unit per two acres (excluding areas in floodplains or that have steep slopes), but the actual density on a site may be limited by environmental and other constraints.

The other density-exchange program is the Cluster Exchange Option (CEO), in which density can be transferred between a sending and receiving parcel in the RC zone when the receiving parcel does not meet the DEO criteria. If the receiving parcel is larger than 50 acres or it is not adjacent to development of 10 acres or less on at least 60 percent of its border, then there still can be a density exchange, but only one dwelling unit per 4.25 acres can be transferred from the sending site to the receiving site (not one dwelling unit per three acres as in the DEO program). All other requirements follow the DEO standards.[88]

Any transaction under these density-transfer options must be approved by the County Department of Planning and Zoning. Developers must submit the density-exchange information to the department for both parcels as part of the preliminary application, and a

[87] The minimum preservation easement area must be 20 contiguous acres if it is adjoining a preservation parcel of at least 50 acres in size to or if it is adjoined to land of any size that has an Agricultural Land Preservation Easement, is owned by the Washington Suburban Sanitary Commission, or is in state or county parkland.

[88] http://www.co.ho.md.us/DPZ/DPZDocs/DEOCEO.pdf#search=%22what%20are%20rural%20cluster%20development%20and%20density%22

preservation easement for each sending parcel must be recorded simultaneously with the final plat for the receiving parcel. The county provides no information about transactions or other clearinghouse functions to potential participants in these programs.[89]

It is important to note that the Howard County program, like Calvert County's TDR program, preserves all of the land in a particular parcel once at least some of the land is preserved in the density- exchange program. Even if only a few of the rights are sold from a property, the whole property is preserved in perpetuity. The remaining rights may be sold at a later time.

In 1992, Howard County implemented rural-cluster development for its rural west that also permanently preserves some of the land within subdivisions. Rural clustering is required in many parts of the RC zone and also is allowed in the RR area. Average lots in a rural cluster development must be one acre in size. With the maximum density of one unit on 4.25 acres required by baseline zoning, this cluster requirement results in areas of open space that are called preservation parcels and are protected by permanent easements. These preserved parcels tend to be more effective as general open-space buffers, making residential areas more attractive and rural in appearance, rather than for agricultural uses. This has tended to be true of cluster residential development throughout the state, although there have been some cases where the preservation areas of clustered subdivisions have been leased to farming activities.

The box on the next page provides an example of a 100-acre parcel in the RC region that could be either developed or preserved through the density-exchange option. With the clustering requirement, a large amount of land would be preserved even if development occurs at the site. With the DEO option, the landowner would sell the development rights and slightly more development would result, but it would be in the RR area or close to other land that already has been developed.

[89] Information from Joy Levy, Howard County government.

An Example of Land Development in Howard County

We assume there is a 100 acre parcel of land in the RC zone.

A. The property could be developed with clustered housing:

At a density of 1 dwelling unit per 4.25 acres, 23 lots can be built on the parcel in the RC region. They must be clustered on approximately 1-acre lots. In addition, since the parcel is more than 25 acres, an additional lot can be built for each 25-acre increment. Therefore, 27 lots could be built at the site on about 27 acres, leaving 73 acres as a preserved parcel that cannot be developed further.

B. The density could be transferred through the density exchange program to another site:

With the DEO, the density can be transferred at a higher rate to other areas than is allowed at this site. Density can be transferred at the rate of 1 dwelling unit per 3 acres. Thus, 33 lots can be transferred to a receiving area in the RR or RC zone.

- *If the receiving area is in the RR zone, there is no requirement to cluster, so development in the zone can occur at a rate of one dwelling unit per two acres. Hence, a 66-acre plat could be fully developed and only the 100 acres from the sending area will be preserved in perpetuity. However, if the development is clustered in the RR zone and we still assume that 1-acre lots are built, 33 acres will be developed and an additional 33 acres will be protected as open space. Thus, 133 acres are protected.*
- *If the receiving area is in the RC zone, then the lot or parcel must be less than 50 acres in size and adjacent to lots of 10 acres or less along at least 60 percent of its perimeter. Therefore, we assume that the farmer in the sending area will sell 20 rights to one developer who is building on a 40-acre plat and the remaining 13 rights to a developer building on a 26-acre lot. These both must be clustered under the provision that parcels 20 acres or larger in the RC zone must be subdivided using the clustering option. Hence, 20 acres in the first plat are developed (and 20 are protected) and 13 acres are developed in the second plat (and 13 are protected). Once again, 133 acres are protected in total.*

In the summer of 2005, the county attempted to make some changes to the DEO and CEO programs to make it more difficult to qualify as a sending area to ensure that only areas with potential for farming came into the program. There was also an attempt to make the transfer occur from the west to the more developed eastern part of the county around Columbia. Another suggested change was to down-zone the sending areas to lower density, something closer to an agricultural density zoning. However, there was so much opposition to these proposals that they were dropped.

Table 6.5 shows the estimates of all land that is permanently undeveloped in Howard County as of September 2006.[90] The total amount of land preserved by the county programs to date is close to 20,000 acres. The original goal of 30,000 acres in the 1990 plan was reduced to 25,000 acres in the 2000 General Plan, and the county is finding that even this lower goal may be difficult to achieve because the county is so close to build-out.

It is clear from Table 6.5 that most of the preservation has come through the state and county PDR programs, with the county PDR program accounting for close to two-thirds of the total preserved acreage to date. The DEO, CEO, and subdivision-clustering programs have accounted for much less, only about 12 percent of the total land preserved, but they have been the most active in the last several years.

Table 6.5. Total Preserved and Permanently Undeveloped Acreage in Howard County, MD, as of September 2006 (acres)

Preserved lands (total)			**19,700**
Agricultural preservation purchased easements		17,300	
MALPF	4,000		
County PDR program	13,300		
Dedicated easements		2,400	
DEO, CEO sending areas	1,500		
Cluster subdivision residue	900		
Other easements, including MET, other environmental easements, etc.			6,000
State parkland, WSSC land, and other permanently undeveloped land			10,300
Total preserved land in the western area			36,000

Until about 2004, only a handful of properties had been preserved through the density-transfer programs, but since that time, they have dominated the amount of land preservation. The value of density transfers has risen so steeply in recent years that the county PDR program has not been able to even enter the market to purchase development rights. Before January 2004, the county PDR program paid about $7,600/acre to purchase permanent easements in the western region. After January 2004, to keep pace with the rapidly rising prices for density transfers, they set the offer price for easements at $20,000/acre. Even at this price, however, no easements were offered, even under the favorable terms of their installment purchase agreement option.[91] Landowners continued to sell through the DEO and CEO programs because

[90] Estimates from Joy Levy, Howard County government.

[91] See Daniels and Bowers (1997) for more detail on the installment purchase agreement in Howard County (pg. 159).

prices were higher there. There is evidence that some prices in the DEO and CEO market went as high as $45,000/acre in the summer of 2006. In response, the county has just prepared another round for applications to its PDR because it would like to retire development rights under this program. The new application package will offer up to $40,000/acre for easements in this round. They will buy as many acres as they can at this price.[92]

The county recently determined that the goal of obtaining an additional 5,000 acres as agricultural preservation easements to reach the 25,000-acre goal is going to very difficult because the county is so close to build-out and land prices are so high. Also, the limits of the DEO-type of transfer appear to be in sight because the large sending tracts that can qualify under the program are becoming fewer over time. Some estimates are that a scaled-back goal of 23,000 acres may be attainable. Very little additional land is likely to come into the state MALPF and Rural Legacy programs because the prices for development in Howard County are so high and make the purchase of acreage in the more rural counties in Maryland more cost-effective.[93]

The Howard County case is interesting for a number of reasons. First, it shows how a rapidly developing county can fund an active PDR program and achieve substantial land preservation through a local transfer tax. Second, the density-transfer program as designed by the county appeared to have high transactions costs and was little used by developers until land prices increased rapidly in recent years. With a strong housing market and the county close to build-out, the value of the density transfers has risen so much that they now dominate the market and are the primary means of local agricultural and open-land preservation in the county.

IV. Summary

The three programs analyzed in this chapter have had varying degrees of success in preserving farmland. In Talbot County, while a substantial amount of acreage has been preserved through other programs, TDRs have not worked well. This appears to be due to a

[92] Personal communication with Joy Levy, Agricultural Preservation Administrator, Howard County 8/28/06.

[93] The recent work of the Task Force to Study the Maryland Agricultural Land Preservation Foundation has recognized that reaching the State's own goal of preserving more than 1 million acres of farmland may be increasingly difficult. Currently only about one-third of this target has been set aside<what do you mean by set aside?>. Rising easement costs, funding uncertainty, very restrictive uses on MALPF program easements, and the spread of development pressures to "transitional" counties such as Washington and Calvert just beyond the traditional Baltimore-Washington metropolitan core counties are some of the obstacles that will need to be overcome to continue working toward the overall target for the state.

combination of factors: limited development pressures along with accommodation for growth in the municipalities; clustered subdivisions already at or near the density limits imposed by septic restrictions; and possibly high administrative hurdles from the joint subdivision requirements. Although the county is proposing some changes to the program, we do not expect that those changes will lead to much additional activity in the program.

Outcomes in Queen Anne's County highlight the fact that we see in most of the counties studied: the demand for additional density lies in the more rural areas. Queen Anne's TDR program was quite active until the county restricted receiving areas to the relatively high-density Growth Areas in the county. When that change took place, TDR sales dropped significantly, but the NCD program, a rural-to-rural density-transfer program in the county, picked up the slack. That program has become quite active in recent years. In addition, a Critical Area TDR program also has been active due to the high value of waterfront properties.

Finally, Howard County has a density-transfer programs that allow the transfer of development from one rural area to another. This program requires substantial administrative costs for developers and for a long time was inactive. In recent years, however, with a dramatic increase in housing prices and the county close to build-out, offer prices have increased above what the county would pay through its PDR program. The density-transfer programs are now the source of all of the land preservation in the county. The county planners have tried recently to obtain down-zoning for the more rural areas and place tighter restrictions on the density-transfer options but have not been successful. The Howard County case shows how strong economic forces become as a region gets close to being built out and how the viability of different preservation programs can change over time.

In general, density-transfer programs—like Howard County's CEO and DEO programs, Queen Anne's NCD program, and the joint-subdivision provisions in Talbot County—are quite similar to TDRs. The main difference is that they tend to be used in the state for rural-to-rural transfer of development rights and they generally require the joint submission of a plan for both the sending and receiving parcel. This last feature of these programs can make the administrative and transaction costs higher than they would be in a traditional TDR program. Often, the sending parcel is purchased by a developer who then submits the joint plan, sells the sending parcel with the easement on it after the plan is approved, and then develops the receiving parcel. The extra steps can increase costs. A more important concern for either density-transfer or TDR programs may be how the actual transactions take place and how well the market functions. Provision of information about prices, who is interested in selling and

who wants to buy, the existence of a bank, and other factors all can help the market to function more efficiently, whether it is through density transfers or TDR sales.

Chapter 7: Findings and Recommendations

Maryland is a leader in farmland preservation, protection of natural resources and open space, and the promotion of "smart growth" principles. It has several state programs in place to preserve land, and counties around the state undertake a number of efforts as well. One area in which Maryland counties lead the way is in TDRs and density-transfer programs. Almost all of the counties experiencing growth pressures around the major urban areas in the state have TDR or density-transfer ordinances. A total of 12 counties had ordinances in place as of August 2006, and a number of others are considering them. In this study, we focused on seven programs in the state that represent a range of program types and outcomes.

These programs have seen varying degrees of success. We define a successful program as one that has an active and stable market in TDR sales, ensuring that land is being preserved over time. By this measure, Montgomery and Calvert Counties have been quite successful, preserving substantial amounts of farmland and open space, while St. Mary's and Charles Counties have not. We focused most of our analysis in this report on these four programs. We also extended the analysis to include other programs that offer unique features or insights. We analyzed the Talbot County TDR program, which has not been active at all, and review the density-transfer programs in Howard and Queen Anne's Counties that have similarities to TDR programs but have some differences as well.

The two success stories—Montgomery and Calvert Counties—have been successful on their own terms. They have very different program goals and program designs and have succeeded for different reasons. The programs that have not worked as well—those programs with few transfers and very little acreage preserved—have failed to live up to expectations for a variety of reasons. These reasons are:

- limited demand for TDRs due to sufficient density in housing markets under current baseline zoning rules;
- existing residents' ability to block the use of TDRs for higher density;
- other ways for developers to get extra density without the purchase of TDRs;
- prices of TDRs that are too low to induce farmers to enter farms into the TDR program, particularly in comparison with other farm-preservation options; and
- extra rules and administrative hurdles associated with using TDRs or density transfers.

In the next section, we discuss our conclusions for the individual counties we analyzed. We then end the chapter with our overall findings and recommendations from the study.

I. Specific Findings from Individual Counties

We devoted a significant amount of attention in this study to the Montgomery County and Calvert County TDR programs. Both have been quite successful and often are held up nationally as examples for others to follow, particularly the Montgomery County program. Interestingly, however, the programs are set up quite differently and seem to succeed for slightly different reasons. The following sections discuss our findings for each of the programs.

Montgomery County

As a fast-growing county on the edge of Washington, DC, farming clearly has been threatened in Montgomery County. We found that the number of farms and farm acreage have declined in Montgomery Count since 1950. However, they both have held relatively constant since the mid-1970s. Residential building peaked in the county in the 1980s. House prices have increased sharply in the county in recent years.

Our analysis of the Montgomery County TDR program revealed that, in a sense, the program was destined to succeed. This is because of two key factors: 1) the down-zoning of sending lands provided a strong incentive for farmers to sell development rights; and 2) high population growth and demand for housing in a strong suburban market provided incentives for developers to demand those rights. Indeed, these factors combined to create an active TDR market and substantial preserved acreage. Our results showed the following:

- Out of a total of more than 75,000 acres of land in active farming in the county, approximately 61,000 acres have been preserved from development as of mid-2004.
- More than 45,000 acres, or 74 percent of all preserved farmland, is protected through the sale of TDRs; this amounts to roughly one-half of the large, rural area that originally was designated for protection.
- Preserving these acres through a PDR program, rather than the fully private TDR program, would have cost the county approximately $63 million (with TDRs valued at an average of $7,000 apiece).
- Most of the TDRs were created and sold in the 1980s; there has been much less activity in the TDR market since that time. This primarily is because most of the development took place during the 1980s (see Table 2.3 in Chapter 2).
- The agricultural reserve area that originally was down-zoned has continued to see some development but less than the other rural areas of the county. About half of

this development has lot sizes of less than 5.5 acres, meaning that large areas can remain in active rural uses even with some development.

Despite the combination of down-zoning and strong development pressures, our review found some weaknesses in the design and implementation of the Montgomery County TDR program. These problems have led to a TDR market characterized by relatively high transaction and administrative costs. Moreover, there have been widely fluctuating TDR prices and sales over time, creating confusion and uncertain expectations on the part of both landowners and developers. In addition, not all of the outcomes on the development side have been what was originally intended with the program. Thus, the program offers opportunities for lessons for other jurisdictions considering TDRs.

There are some interesting findings from Montgomery County about how receiving areas are designated and about the location and density of those receiving areas, as follows:

- The individual Planning Areas (there are 26 of them) voluntarily designate TDR receiving areas—that is, they choose where TDRs can be used and what the density bonus will be in each zoning district. Over time, there have been insufficient receiving areas designated for TDRs because Planning Areas have been reluctant to absorb very much additional density.
- Planning Areas have designated most receiving areas in fairly low-density areas: R-200 (2 dus/acre) and RE-2 (1 dus/2 acres) have the largest number of possible TDRs; very few Planning Areas designate higher density zones (4-6 dus/acre) as receiving areas and almost none designate very-high-density areas (10 dus/acre or more) as receiving areas. Planners tell us that they would like to see higher density development in urban areas, but developers are reluctant to build at high densities either because there is no demand for it or because existing residents will be able to block it. Planners have been reluctant to include TDR receiving areas in these high-density areas because existing densities are well below baseline zoning limits.
- Although Planning Areas can allow R-200 and RE-2 areas to use relatively high numbers of TDRs, in fact they do not. For example, Planning Areas can designate R-200 areas to use up to nine additional units on an acre with TDRs, but on average they designate only about three additional units.

Even with receiving areas designated in many locations, developers have been faced with administrative hurdles to using them. Developers must negotiate with the planning authorities and the public over approval of their plans. Even in a designated receiving area with a certain number of allowable TDRs, there is negotiation on a case-by-case basis. This takes time and resources for all concerned and adds uncertainty to the development process, leading to less demand for TDRs. We discovered the following results in our research:

- There has been a great deal of variation across Planning Areas in developers' use of TDRs. In some receiving areas, subdivisions used no TDRs at all, while in those that did use TDRs, they used on average about 50 percent of the number they were permitted to use. The maximum allowed number is not closely related to the number used in most cases.
- Some developments have gone in at high density without the use of TDRs, for example in the town of Silver Spring.
- The majority of TDRs were used in the middle region of the county; in the urban areas closer to Washington, DC, only the Fairland and Potomac Planning Areas designated receiving areas and had developments that used TDRs.

One additional burden imposed by the program in Montgomery County is the requirement that developers use two-thirds of the maximum number of TDRs allowed in a receiving area unless they apply to the planning board for an exemption. The objective was to ensure that TDRs were used to their full extent; however, the rule is likely to have dissuaded developers from using TDRs at all in some areas or caused them to choose other locations. Our finding that only about 50 percent of the maximum number of TDRs is used in TDR subdivisions indicates that developers are being granted exemptions. Exemptions generally are granted because of environmental constraints and the compatibility of adjoining land uses to the site.

We reached the following conclusions about the performance of the TDR market in Montgomery County:

- TDR prices have fluctuated a great deal over time. We conclude that this is due primarily to uneven receiving area availability and to the lack of demand for TDRs in the late 1990s.
- A related problem is the lack of information on prices and other program outcomes. There is only very general information available from the county, such as average annual past prices, and no public information about past TDR transactions. This lack of information is likely to make potential participants more reluctant to enter the market. It also makes it difficult to fully evaluate the program and make the changes necessary to improve it.
- Finally, the county is facing a serious problem at the present time with the "super TDR" or "fifth TDR." Because farming properties in the agricultural reserve can retain the right to build at an average density of 1 du/25 acres as long as they keep the requisite number of development rights and because land for development is so valuable in the county, two separate TDR markets have arisen: one market for the TDRs that cannot be used for development and one for the "super TDRs." The value of the latter has risen dramatically in recent years, and they now command a price many times higher than the other TDRs because of the high value of land in

development. The county currently is struggling with this issue and evaluating alternatives for purchasing these final TDRs from landowners.

Calvert County

Calvert County's agricultural sector has diminished in importance over the past 30 years. The number of farms and acres of farmland both have declined since 1978. Tobacco farms were dominant in the county, as in all three southern Maryland counties, but with the tobacco buy-out from the state, the value of agricultural products sold in the county has decreased significantly.

Although it is located farther from Washington, DC, than Montgomery County, Calvert County has become a commuter locale in recent years and is feeling significant development pressure as a result. The county is trying to preserve its rural character and encourage farm activities in the face of this pressure. One important means by which it does this is through its TDR program. Like the Montgomery County program, the Calvert County TDR program has been quite successful at preserving farmland, but the two programs have important differences. Calvert County did not initially down-zone any of the sending areas, and all receiving areas were designated early on in the program rather than gradually. Calvert County established receiving areas in Residential and Town Centers zone and also in rural areas. These different design and implementation features reflect the different goals of the two programs.

The results of our Calvert County analysis showed the following:

- Approximately 23,500 acres of farm and forest land have been preserved in the county through various state, county, and private programs.
- More than 51 percent of this total, or about 12,000 acres, has been preserved through the sale of TDRs.
- Most preserved farms are in the prime agricultural areas; while they are somewhat dispersed throughout the county, the majority lie in the central and southern regions along the western side of the county.
- While the program took a few years to get going, annual TDR sales have been relatively stable since that time.
- Requiring an easement on the entire property acreage when the first TDR is sold has led to substantial acreage preserved in Calvert County; it also has avoided the problem of a "super TDR" as in Montgomery County.

The Calvert County program has much more flexibility than most TDR programs. The program originally was set up so that landowners in the Rural Community (RC) District could

develop their properties at the baseline zoning of 1 du/5 acres, could preserve their land by selling TDRs, or could purchase TDRs and develop their properties at a higher density. In other words, the RC lands could be sending or receiving areas. The other receiving areas designated in the program were the Town Centers and Residential areas. Prime farmland in the Farm Community Districts and Resource Preservation Districts were sending areas only. We analyzed the spatial outcomes from this flexible program and found the following:

- Most TDR use prior to a county-wide down-zoning in 1999 was in the RC district; there was very little demand in Residential and Town Center zoning districts.
- More TDRs have been used in the northern part of the county than in other parts; this is an area that already was being developed prior to adoption of the TDR program and likely would have continued to be developed to approximately baseline zoning limits.
- Not all subdivisions have been built using TDRs; approximately 48 percent of subdivisions built between 1980 and 1999 in the RC zone used TDRs.
- Calvert County's spatial pattern of land use shows that some preserved farmland, some unpreserved farmland, and some subdivisions are located near each other. Some critics of the Calvert County program argue that this is a weakness of the program. However, it is very difficult to know the counterfactual; that is, what land-use pattern would have resulted if: 1) there was no TDR program; or 2) TDR use was limited only to residential areas as some have recommended. Would there have been more dispersed development or less than with the TDR program?
- County-wide down-zonings in 1999 and 2003 have increased the demand for TDRs; a greater percentage of new subdivisions use TDRs than prior to 1999. Down-zoning appears also to have increased the supply of TDRs.
- The down-zonings also have shifted TDR use to the Town Center and Residential zones, as well as to RC areas within one mile of Town Centers (which are given a greater density bonus than other RC areas); development in the prime agricultural areas has slowed significantly since the down-zonings.

The TDR market in Calvert County is smoothly-functioning with relatively low transactions costs. It is easy to find information about the program and about past transactions; information on sales and prices are published in a periodic newsletter. In addition, the administrative hurdles to buying and selling TDRs in the county appear to be quite low. Several aspects of the program's design and implementation have contributed to these results:

- The designation of receiving areas early in the program and the fact that TDR use is more-or-less "by right" greatly reduces uncertainty for all parties involved.
- The county's PDR program complements its TDR program. As of 1993, the county entered the TDR market each year to purchase and retire some development rights. We find that since 1993, TDR prices have been very stable—the variance in

> individual sales prices is quite low. This low variance helps to create a predictable environment for developers and farmers; the county's publishing of a quarterly newsletter, including price information, contributes to this predictability.

Allowing TDRs to be used in some rural areas has been somewhat controversial among planners and farmland-preservation advocates. Moreover, smart-growth proponents would like to see development limited to areas with infrastructure and existing development. Unfortunately, in Calvert County, with a lack of water and sewer systems, this outcome probably was not feasible. Our conclusion about the Calvert County program is that in the absence of down-zoning of the sending area—which was considered to be politically nonviable—the TDR program would not have succeeded to the degree that it did without rural receiving areas. Moreover, unless these rural lands had been sharply down-zoned, development likely would have continued in these areas even without the TDR program. With the TDR program, the county managed to get some agricultural lands preserved while allowing development to occur in some locations.

The county implemented broad-based down-zonings in 1999 and 2003. These down-zonings were based on county-wide assessments of the future growth in population and traffic in the region as it moved toward build-out. The county made the decision that future development had to be reduced and, thus, all areas were down-zoned. This was used with the TDR program to direct development toward some areas and away from those areas most valued for preservation. Development is now shifting to the residential areas and closer to Town Centers. Of course, because those areas were down-zoned, the resulting density, even with TDRs, may not be high. However, farmland is being preserved. An important thing to point out about the down-zonings, however, is that they are likely to reduce growth in the county overall, raise property prices, and move development to more distant counties.

Comparison of Montgomery County and Calvert County programs. Table 7.1 below compares and contrasts key features of the programs, as described in the text above. The goals of the programs and the methods used are quite different, but both programs have preserved large areas of land. Montgomery County wanted to preserve a large contiguous area of active farming and allow additional density in the urbanized areas. Calvert County wanted to maintain the rural character of the county through preservation of prime agricultural lands but would allow that preservation to occur throughout different parts of the county. Calvert County realized that development of the rural areas were to some extent inevitable and preferred to ensure the preservation of some areas while allowing the development of others.

Table 7.1. Summary of Montgomery and Calvert County TDR Programs

	Montgomery County (adopted in 1980)	**Calvert County** (adopted in 1978)
Goal of TDR program	Preserve large 90,000-acre agricultural area (RDT) in the north and west of the county.	Preserve 40,000 acres of prime farmland throughout the county.
Acres of land preserved under TDR Program*	Approximately 45,000	Approximately 12,000
Use of down-zoning in conjunction with TDR program	RDT down-zoned to an average density of 1 du/25 acres, with a minimum lot size of 40,000 sq. feet; TDRs could be sold at 1 du/5 acres as partial compensation for down-zoning.	No initial down-zoning when TDR program began; most rural areas, which were zoned at density of 1 du/5 ac, allowed to sell TDRs; *all* areas of county later down-zoned to reduce growth and increase demand for TDRs.
Receiving areas	Designated by Planning Areas at time of major planning revisions; most are allowed in a small number of low- and medium-density residential zones; receiving areas added over time.	Designated in most rural and residential areas throughout the county at the start of the program; only the areas most targeted for preservation were not receiving areas. No changes over time.
Type of easement under TDRs	Sending area landowner can retain the right to build on property at an average density of 1 du/25 acres.	Once a single TDR is sold from sending property, the entire acreage is permanently preserved.
Rights to build in receiving areas	The number of allowed TDR units in receiving area are determined on a case-by-case basis by each Planning Area.	The number of allowed TDR units in receiving areas are granted by right in county zoning ordinance.
*Total land area of Montgomery County is 317,000 acres and the total of Calvert County is 137,000 acres.		

Charles County

Charles County is another county that, like Calvert County, is feeling development pressures from being on the fringe of the Washington, DC, metropolitan area and has seen its agricultural sector decline in recent years because of the tobacco buy-out. It is not clear what agricultural industries have the potential to be profitable in Charles County in the future, though there is some possibility that the forestry sector, with associated forestry products, may rise in importance.

Some key features of the TDR program in Charles County are the following:

- There was no initial down-zoning of sending or receiving areas when the program was adopted in 1992.
- Receiving areas are only in the Development District around Waldorf and other urban areas in the northern part of the county.
- In order to certify TDRs to sell, farmers must qualify for the state MALPF; this presents a significant administrative hurdle.

We found that while a substantial amount of farmland acreage has been preserved from development in Charles County, very little of it is attributable to the TDR program.

- Out of about 50,000 acres of land in farming, 37,551 acres have been preserved through county, state, and private programs. Of this total, slightly more than 2,000 acres have been preserved through the sale of TDRs.
- Only 690 TDRs have been sold since the program began.

The primary reasons for the lack of activity in the TDR market are the following:

- On the demand side,
    - in the Growth Areas, where TDRs can be used, most subdivisions are at less than the allowable density with existing baseline density rules; and
    - even where there is a demand for additional density, there often are other ways developer can get it, such as through PUDs.
- On the supply side,
    - most farmers can do better by holding on to their land—land prices for three-acre lots are relatively high; and
    - farmers often find a better deal in selling an easement to the state MALPF program than in selling TDRs; since they have to qualify for MALPF anyway in order certify TDRs to sell, MALPF provides a preferred alternative.

Our analysis of the housing market in Charles County shows that the majority of new building is taking place in the Development District in the northern part of the county. However, there are many small developments going into the Rural Conservation (RC) and Agricultural Conservation (AC) areas. Because these are low-density areas, the majority of acreage converted for development is in the RC and AC areas.

The few TDRs that have been used in Charles County are almost exclusively in the low-density residential areas (areas zoned 1 du/acre). TDRs have increased the density somewhat over baseline zoning, but developers never use the full possible density bonus.

An interesting experiment is underway with the down-zoning of a relatively large rural area of the county near the Development District. The county plans to up-zone that area to higher density eventually, and one proposal is to make the higher density possible only for developers who have purchased TDRs. Such a plan would allow higher density in designated areas, and at the same time preserve other areas of the county through the TDR market. However, the county should be concerned about the possibility of sharp price fluctuations in TDRs if the receiving area is not phased-in or if additional receiving areas are not made available over time.

Our conclusion is that some major change in land-use policy may be necessary to increase the demand for TDRs in Charles County, such as across-the-board down-zoning as in Calvert County, followed by expansion of the TDR sending and receiving areas. The Charles County Rural Commission recommends down-zoning only the Development District and the broad areas that should be preserved, such as the far western region. Although this plan may increase TDR demand, the economics of development in different areas should be examined carefully before such a policy is implemented. It is possible that it could backfire if it makes the sending areas that have not been down-zoned now more economical to develop relative to the down-zoned Development District.

We feel that it is important for the county to become more involved in the TDR market as that market becomes more active. As in Calvert County, providing information and acting as a clearinghouse will be particularly important functions for the county to undertake. In addition, it may want to consider purchasing development rights in the TDR market and retiring them, both to stabilize the market and signal the willingness of the county to support land preservation and to help limit the overall amount of development, if that fits with county goals.

St. Mary's County

The number of farms and farm acreage have declined in St. Mary's County since 1978. As in neighboring Charles and Calvert Counties, the tobacco buy-out has decreased the value of agricultural products sold. St. Mary's County does not feel as severe development pressures as its neighbors, however, because its residents generally do not commute to the Washington, DC, area. Moreover, a large local employer—the Patuxent River Naval Air Station—anchors the county economy.

St. Mary's County adopted its TDR program in 1990. The sending area in the program is the Rural Preservation District (RPD), which until 2002 had baseline zoning of 1 du/3 acres.

There was no initial down-zoning when the TDR program was started. The RPD, which is the only rural zoning district in the county, can be a receiving area or a sending area. Residential and mixed-use zones also are receiving areas.

Until 2002, the TDR program in St. Mary's County was inactive. At that time, the county adopted a new zoning code that made some important changes to the TDR program and also down-zoned the RPD to 1 du/5 acres. Thus far, land preservation and TDR results in the county are as follows:

- A total of nine TDRs were sold in the first 12 years of the program, prior to 2002.
- Between 2002 and April 2005, 146 TDRs were sold.
- As of August 2006, approximately 1,000 acres of land have been preserved through the sale of TDRs; another 400 acres are anticipated to be preserved by the end of the year.
- A total of approximately 14,000 acres of land have been preserved in St. Mary's County through all state and private programs. With an estimated 68,000 acres of land in farming in the county, this is a smaller percentage of farmland preserved than in the other counties in this study. The contribution from TDRs is small.

The St. Mary's TDR program has had a number of problems that have limited its effectiveness, at least until the changes were made in 2002. The problem primarily lay on the demand side of the market. Because developers could get increased density through means other than purchase of TDRs—such as PUDs, water and sewer connections, design enhancements, and others—they had little incentive to use TDRs.

The 2002 Comprehensive Zoning Ordinance removed many of these allowances, the most important ones being the PUD option and water and sewer connections. Some design enhancement incentives remain, along with affordable housing provisions, but additional expected changes may eliminate these final options.

The county currently is considering significant changes to the TDR program. The changes include:

- simplifying the calculation of allowable TDRs for sale by using total gross acreage of the property rather than the current system of subtracting sensitive areas;
- dropping the design enhancements and other means of attaining density except through TDRs;
- requiring TDR use on any developments in the RPD beyond the first house;

- varying the number of TDRs required with density; as density increases from 1 du/5 acres to a maximum of 1 du/3 acres, the number of TDRs required would increase; and
- accepting a "fee in lieu" of purchase of TDRs to build in the RPD (the county would use the revenues collected to purchase development rights).

These changes should generate a more active TDR market. The provision that building in the RPD would be allowed only through purchase of TDRs would be a radical change from the status quo but could lead to significant preserved acreage. The fee-in-lieu program could provide some much-needed funds for the county to kick-start a PDR program.

Our analysis concludes that St. Mary's County is moving in the right direction, but its program also could benefit from a county PDR program and from better data collection and analysis by the county planning department. As the program becomes more active, these data collection efforts will become more critical.

Talbot, Queen Anne's, and Howard Counties

Although we did not go into as much depth with these counties as with the other four counties in the study, we were able to reach some conclusions about the programs and add to the lessons learned about TDRs. Howard County has two density-transfer programs. Queen Anne's County has a traditional TDR program, a Critical Area TDR program, and a density-transfer program known as the Noncontiguous Development (NCD) option. Finally, Talbot County has a TDR program with a provision called the joint-subdivision provision that operates like a density-transfer program.

The counties have experienced different degrees of development pressure. Howard County, with its location between Baltimore and Washington, DC, has been one of the fastest growing counties in the state and has lost significant farmland acreage to development. Talbot and Queen Anne's Counties, both Eastern Shore counties, have valuable farmland and productive agricultural operations. Queen Anne's County faces some development pressures because of its proximity to the Chesapeake Bay Bridge; Talbot faces less pressure. Both counties have become desirable vacation-home locations, however, and house prices there have risen dramatically in recent years.

Our results for these three counties are as follows.

Talbot County

- Talbot County has 106,000 acres in farmland, of which 28,000 have been protected from development through various state, county, and private programs.
- Of this total, only 790 acres are from sales of TDRs.
- The TDR program has been inactive primarily due to the fact that:
    - most development has been occurring in the municipalities, which do not have sufficient incentive to require TDRs; baseline density appears to be acceptable in these areas;
    - strong development pressures do not exist throughout the county;
    - density limits allowed with subdivision clustering appear to reach the limits imposed by septic system requirements in the county—approximately 1 du/2 acres due to soil types and high water tables; this means that the extra density permitted with TDRs is not feasible; and
    - the joint-subdivision requirements appear to be somewhat burdensome and may be preventing the use of TDRs in some areas.
- Some proposed changes to the Talbot County program currently are under consideration, but these changes are not likely to increase program activity.

Queen Anne's County

- Queen Anne's programs have preserved a significant amount of acreage, but the importance of the NCD option relative to the traditional TDR program has changed over time.
- The TDR program languished after a zoning change in which rural receiving areas were dropped in favor of having only Growth Areas in the county serve as receiving areas. Baseline zoning in the Growth Areas is relatively high and appears to be above what the market demands; thus, there is no demand for TDRs.
- The NCD program in Queen Anne's County, which does allow rural-to-rural transfers, is now quite active; most transfers are from land in the northeastern part of the county to the area near the Bay Bridge.
- The Critical Area TDR program, which allows TDRs from Critical Area properties to be used to increase density on other Critical Area properties, also is active; the value of Critical Area TDRs has risen sharply in recent years and currently is quite high.
- Almost 10,000 acres have been preserved through the TDR and NCD programs in Queen Anne's County; a total of 55,680 acres have been preserved through all state, county, and private programs.

Howard County

- Howard County is under intense development pressure and is very close to build-out. The county has tried a number of times to further down-zone the agricultural areas of the west without success. Most of this area is zoned 1 housing unit per 4.5 acres.
- Howard County has a density-transfer program that transfers density from parts of the rural areas to other rural areas. This policy is designed to provide some incentive for the protection of large farms and subdivision open space by allowing density to be transferred to areas that are adjacent to already developed rural areas. The density that is transferred must be clustered on lot sizes of about one acre.
- To participate in the density-transfer program, a joint application has to be submitted showing the easement on the protected property and the development with the appropriate size, density, and preserved subdivision open space in the receiving area. This aspect of the program makes it different than a TDR program, in which the purchase and sale of TDRs can be separate transactions.
- The density-transfer program was not very active until recently. The county's active and well-funded PDR program has accounted for most of the land that has been preserved. The PDR program has been able to purchase easements from most landowners who want their properties to remain in farming, preserving more than 13,000 acres.
- In the last few years, the demand for housing has been so great that the density-transfer program has been able to better compete with the PDR program on price. The transfer program now has preserved approximately 2,400 acres.

The density-transfer programs in these counties share many similarities with TDR programs. They do tend to be used exclusively for rural-to-rural transfers, but TDR programs can allow such transfers as well. Calvert and St. Mary's Counties, for example, both allow rural-to-rural transfer of development rights. One difference between TDRs and density-transfer programs is that the plans for both the sending and receiving parcels must be jointly submitted in the density-transfer programs, a requirement that usually is not made in TDR programs. This presents an additional administrative cost to developers. As a result, it is common to see the same developer buy both the parcel to be developed and parcel to be preserved, complete the transfer, then sell the parcel with the easement as well as the parcel that is developed. This adds to the transaction costs of the policy. Moreover, it means that the developer needs to find a landowner in the sending area who is willing to sell land, not just the development rights from the land. In general, TDR programs are more flexible and allow for more possibilities in land preservation and transfer of density.

II. Overall Findings and Recommendations

TDRs have much to recommend them but in many cases do not seem to live up to expectations. We conclude that as a land-policy tool, even the best-designed programs have certain advantages and disadvantages. Their advantages include:

- The ability to preserve land without expenditures of tax dollars.
- More flexibility to landowners than under strict zoning or other mandates.
- The potential to compensate landowners for down-zoning or other restrictions on their land.
- The ability to accommodate growth and still preserve land from development.

The disadvantages of TDRs are:

- Uncertain outcomes—as they are inherently voluntary programs, one cannot be sure which parcels will be preserved and how many acres will be preserved. This is true, however, for most land-preservation programs to varying degrees—PDR programs also are voluntary in the sense that they cannot ensure the preservation of certain farms; however, they are better able to target particular properties than are TDR programs.
- Some parcels may be preserved that would have stayed in agriculture, leading to more development than there otherwise would have been; development that was not economical before may become economical with the additional density allowed with TDRs in receiving areas.
- TDRs can be complicated to design and implement.

Other features of TDRs can be viewed as advantages or disadvantages. One of these is the matter of who is paying for land preservation in a TDR program versus an alternative such as a PDR program. Most of the cost of land preservation under TDRs is borne by new residents of the jurisdiction and not by existing residents. They pay in the form of higher house prices because of the added cost of TDRs. PDR programs also tend to be financed by new residents because much of the funding for them comes from transfer taxes that must be paid due to new development. The incidence of the cost of all land-preservation programs is complex but should be considered in assessments of alternative methods for achieving local land-use goals.

It is important that local policymakers understand that even the best TDR programs cannot do everything. Attaining the spatial land-use outcomes that a county considers to be desirable—such as contiguous tracts of preserved farmland, minimal fragmentation, and development restricted to residential and other areas with infrastructure—may be difficult with TDRs alone and may not even be possible with any combination of policies. County planners

and residents need to be informed about the choices that are available and the outcomes under different policy options. Some analysis and predictions of what the outcomes will be if TDRs are not used is important, as some understanding of the counterfactual is essential.

Our research suggests some important factors that lead to TDR program success:

- TDRs appear to work better where there are strong development pressures and, thus, demand for additional building. TDR programs accept that there is going to be growth in a region, and they attempt to redirect that growth to be denser in some areas while achieving land preservation in others. This does not mean that communities should wait until growth pressures are intense to adopt a TDR program, but they should consider development trends when deciding on the design and goals of a TDR program.
- In all the programs that we analyzed, it has been difficult to force additional density into high-density residential areas. Despite the desire of many planners and smart-growth advocates to get higher density development into town centers and other areas with infrastructure, the reality is that no TDR program in Maryland and few around the country have had much success at this.[94] Whether this is because of resistance from existing residents or a lack of market demand for that kind of housing, the fact is that TDRs tend to be more successful when they can be used in areas with lower density development.
- There must be general agreement about the land-preservation goals of the community. Outreach to the public about the goals of the TDR program and getting consensus on the importance of land preservation in some areas and higher density in others is key.
- The first step to having a successful TDR program is ensuring an active market in development rights. This is where most TDR programs have failed. An active market is more likely if the following conditions are met:
    - Receiving areas need to be designated in areas with demand for density above the baseline zoning. This means that county government needs a good understanding of the underlying economics of the land and housing markets.
    - Because receiving areas determine demand for TDRs, they need to be established either at the outset of the program or over time with an understanding of how they will affect market sales and market prices.
    - Allowed density under TDRs should be "by right" once receiving areas are designated and not negotiated with planning boards and the public.

[94] There are a few examples nationwide. One is in the Seattle metropolitan area, where there have been a few cases where developers used TDRs from a development rights bank to increase the floor space of high-density developments in downtown Seattle (Pruetz 2003). And, http://dnr.metrokc.gov/wlr/tdr/.

- Local government needs to recognize and carry-out its role in making the market work; this means it:
  - may need to participate in the market by buying some rights each year (combine PDR with TDR) to provide some price stability and provide information to the private marketplace; this also could help the county to better achieve its land-use goals since it may be able to target specific properties in a PDR program that are missed with TDRs;
  - should find other ways of providing information, both to farmers and developers; act as a clearinghouse for information; and
  - should collect and analyze data from the program to continually evaluate and improve it.

It is important that local policymakers understand that TDRs are a market-based mechanism, and, as such, the program needs to be designed to achieve the goals of a well-functioning and efficient market. This means that:

- the TDR market should have very low variance in prices across transactions for a given time period—that is, something close to a single equilibrium price;
- TDR prices should rise over time at something close to the rate of interest or the rate of land appreciation; TDRs should represent an asset to landowners, like other assets they might hold; and
- down-zoning sending lands and allowing retention of the right to develop at the reduced baseline zoning can lead eventually to dual TDR markets in a jurisdiction; this is what has developed in Montgomery County with the "super TDR" market.

TDR programs are prone to certain problems and issues that local governments need to be aware of and prepared to address. We provide some examples here.

- TDRs are negative easements in that they say what landowners are *not* allowed to do on their land. However, they are not good at requiring what should be done on the land, particularly over time. This is true of farming but also is true of TDR programs with a habitat or environmental focus. In the case of farmland, if the larger goal of the program is to have a viable and working agricultural economy, then factors other than farmland preservation will be very important. These include economic conditions in agricultural product and land-rental markets, effectiveness of institutions that support farm activities, and other government programs that affect farming.
- Existing residents and their desire to block higher density development can be a serious impediment to a working TDR program. TDR use "by right" and designating receiving areas at the outset of the program are important. Other possibilities for counties to consider:

- some benefit to existing residents, such as through infrastructure development or lower taxes; the King County, Washington, TDR program has found some success in the transfer of development rights from rural lands to municipal areas through incentives, such as offering funds for transportation or natural resource amenities in exchange for adding TDR receiving areas in urbanized areas;[95] or
- the identification of "greenfield" receiving areas. If a region has a growth goal as it moves toward build-out and existing urbanized areas do not want to accept additional density, then the density might be directed toward one "new town" as a way of achieving the combination of long-run growth and land preservation. This approach has been used with some success in some New Jersey programs, such as in Chesterfield, NJ. The approach used there was to allow all of the remaining existing development rights in the township to be used in one newly developed town, Old York Village. The Seattle area also is considering pilot projects that steer new, dense development to part of one county (King County Department of Natural Resources.)
- Some communities are considering down-zoning receiving areas to generate TDR demand. We want to point out that this option may backfire, as it makes building more expensive in the down-zoned areas. An alternative is to down-zone everywhere but allow developers to buy back density only in certain areas. This has worked well in Calvert County. Even with this option, however, it is essential that communities understand that they may be making housing more expensive and also pushing development to more distant locations.

[95] Based on discussions with Mark Sollitto, King County TDR program manager, http://dnr.metrokc.gov/wlr/tdr/.

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