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MEMORANDUM

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TO: Montgomery County Planning Board

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SUBJECT: Memorandum for Briefing On
Potential Strategies for Resolving
TDR Absorption Issues

POTENTIAL STRATEGIES FOR RESOLVING TDR ABSORPTION ISSUES

Richard Tustian¹, Policy Advisor, January 22, 2008

PREFACE

This paper seeks to be useful to readers who are deeply immersed in TDR issues, as well as to others who may not be as familiar with the background. The former may wish to go directly to page 20 for a summary of conclusions.

The purpose of this paper is to link issues associated with the recommendations of the Ad Hoc Agricultural Policy Working Group (Ag Group) to issues associated with the development of new master plans for the 355/270 Corridor, including Twinbrook, White Flint, Gaithersburg, and Germantown. The paper is intended to facilitate discussion among Staff and Planning Board as new Master Plans and Zones are being developed.

INTRODUCTION

The report of the Ag Group (Ag Report) runs to 47 pages plus a 41 page appendix. Its chapters address Child Lots, Sand Mounds, Transferable Development Rights (TDR's), Building Lot Termination (BLT's), and Pending Legislation. This paper deals only with TDR's and BLT's, and only with the dominant zoning questions raised by the Ag Report. Any complete response to all of the Ag Group's proposals must come in some other document.

Concerning TDR's, the Ag Report recommends, in general terms, that a greater market in receiving areas be created. This should be done by adding TDR purchase requirements to: (a) floating zones; (b) mixed use zones; and (c) commercial and industrial zones, using a conversion factor that equates one TDR to some appropriate number of square feet of development floor space.

¹ This paper was requested by Planning Board Chairman Hanson and Acting Planning Director Wright. The author functioned as lead planner of a group of staff who contributed many ideas and analyses. Although the paper is a construct of the author alone, and represents his personal perspective, the collegial contribution and support of these other staff should be recognized, in particular the work of Jacob Sesker, Pam Dunn, Roselle George, Callum Murray, Judy Daniel, Debra Daniel, and David Lieb.

Concerning BLT's, the Ag Report recommends, in general terms, that a new system be created whereby BLT's would be designated as a category separate from regular TDR's. The purpose of this system would be to permit Ag Reserve land owners to sell these BLT's at a price comparable to their value when used for construction on site, but without the necessity of these rights being used to construct houses in the Ag Reserve. In short, the proposal would create a transferable residential development right analogous to the existing TDR category, but one that is valued at a much higher price than TDR's have achieved over time when sold to the receiving area market in the county.

(A) THE GREATER TDR MARKET PROPOSAL

Creating A Conversion Equation

The first point to consider is the feasibility of creating a conversion equation that will allow TDR's to be measured in terms of square feet of non-residential space. This is a statistical consideration.

The original and still existing TDR program is measured in terms of residential dwelling units. That is to say, its smallest unit of measurement is one residential dwelling unit. One TDR means one dwelling unit. As used in the county so far, this unit of measurement does not distinguish one dwelling unit from another in terms of size, quality, or cost. The TDR trading system avoids the complexity of spatial/quality/cost analysis of dwelling units by letting the free market of willing sellers and willing buyers decide what is the appropriate price for a TDR at any given time.²

Commercial, industrial, and mixed use zones, however, measure their capacity in terms of square feet of building floor area. Hence, to set up a system whereby TDR's can be bought by developers in such zones, it is necessary to create a conversion equation that equates one dwelling unit to some number of square feet of non-residential building floor area. To accomplish this, it is necessary to think through the problem of what is the best way to calculate the equivalency. There are multiple ways of approaching this problem. Here is the way that we found most simple and, therefore, most attractive.

² Some time after the initiation of the TDR program, an amendment was adopted to permit multi-family zoned receiving areas to receive a bonus density of more than one condominium/apartment unit in return for the purchase of one TDR. This sub-topic will be examined later in this paper.

One Possible Conversion Equation

Both the dwelling unit and the square foot are spatial units. The first is just bigger than the second. One dwelling unit comprises many square feet. So, the first step is to establish the average number of square feet per dwelling unit. We know that dwelling units come in many different sizes, ranging from large Single Family Detached houses, through smaller Townhouses, to smaller Condominium/ Apartment units. Hence, start the conversion formula by selecting an average size dwelling unit to represent the whole spectrum of dwelling units in the county.

With this average dwelling unit now expressible in square feet, attach an average price to this average dwelling unit. This will yield an average per square foot price for this average dwelling unit. We now have in hand one half of the conversion equation. The next step is to calculate the average price of a square foot of non-residential space.

With a price per square foot number to represent the average residential dwelling unit, and a price per square foot number to represent the average nonresidential building floor space, it becomes possible to hold the two prices constant, and find the spatial equation under which the two different use types have equal value on a per square foot basis.

The details of the calculation performed by staff using this method, and the assumptions made about mean/median values, are outlined in Appendix A attached. The conversion equation produced by this exercise is as follows:

1,800 square feet Residential Space = 1,500 square feet Office Floor Space.

which can be used a surrogate for

1 Transferable Development Right = 1,500 square feet Non-Residential Floor Space

The Conversion Equation in Context

It must be recognized that a lot of "averaging" is involved in this method. Median new residential dwelling units (built between years 2000 and 2005) range in size from 3,400 square feet for Single Family Detached units, through 1,800 square feet for Townhouses, to 1,200 square feet for Condominium/ Apartment units. Similarly, residential prices range from

millions of dollars for Single Family Detached units to thousands of dollars for Condominium/ Apartment units. We chose the average value of a new Townhouse at 1,800 square feet as the central place to choose across this spectrum of price and size. This is preliminary judgmental choice that could be refined if time is available for further analysis.

On the non-residential side, there is also a wide range of building types and values. Non-residential uses and zones include Industrial, Office, Commercial, and Mixed Uses (which may include not only mixtures of the above three but Residential as well). In general, Office floor area prices fall somewhere between Industrial (lower) and Commercial (higher). We chose the average value of new Class A Office space as the central place to choose across this spectrum of price. This also is a preliminary judgmental choice that could be refined if time is available for further analysis.

Obviously, choosing different points to represent the average across these spectra would change the resulting spatial equation. With further work, it would be possible to take this statistical analysis to a deeper level. But if we keep the algebra of the method as outlined above, it is an approach that, in effect, says: If a developer in a receiving area is prepared to pay the price of a median residential TDR, he/she is assumed to be prepared to pay the same price for a non-residential bonus in the amount of the square foot area set by the conversion formula.

Common sense tells us that this equivalency of value will not prevail for every developer's situation. Each situation will be affected by its location, its zoning, and its owner's marketing desires. Still staying with this basic method, the next question is: Is one conversion formula enough to be used for all non-residential receiving area uses, or should different conversion formula be crafted for different non-residential uses? For example, this same basic method could be used to create a conversion formula that would be different for different nonresidential uses (e.g. one measure for office, one for commercial, one for industrial, etc.).

The answer to this question deserves some thought. If all existing employment zones (e.g. industrial, office, commercial) are to be converted to TDR receiving zones, perhaps different conversion equations are best. On the other hand, if the dominant use of the conversion equation is to be in new mixed use zones, perhaps one equation is best. More background about planning for incentive zones, like TDR receiving zones, is discussed further below in Section C, Bonus Density Capacity in Receiving Areas.

Other Methods for Calculating a Conversion Equation

Other basic methods for calculating an equation are conceivable. One quite different alternative method would be to construct a conversion equation based on simulating the economic pro forma calculations of a wide variety of receiving area developer situations. This would seek to estimate how much the bonus density provided by the purchase of a TDR would be worth to a developer if the developer had the choice of using it for residential or for non-residential use.

This would be a complex operation, a bit time consuming and requiring data collection. It would necessitate the construction of a number of use/building typologies - enough to embrace the range of situational possibilities, and then to simulate their pro forma calculations, and then to average across all these to arrive at an "average" conversion equation for each use/building type for which there is a separate zone.

A variation on this theme seems to have occurred some years ago, when the zoning ordinance was amended to equate one TDR with more than one dwelling unit in multi-family zones. As I understand the history of this action, a case was made by the development community that there was not enough net marginal value, in the addition of one extra condominium/apartment unit, to justify the market price of a TDR. Accepting this argument, the County changed the ordinance.

This illustrates a phenomenon that affects the marginal value of bonus density. In general, as base density goes up, the marginal value of a unit of bonus density goes down. When zoning for single family detached housing goes from a base density of four units to the acre to eight units to the acre (a not uncommon ratio for some receiving areas in times past), the marginal increase is 100%. But when garden apartment densities increase from a base of 20 units to the acre to 30 units to the acre, the increase is only 50%.

As base densities rise, the bonus densities cannot rise also at a constant percentage of the base, because the cumulative total begins to hit against either a height or volume limit (which is relevant to compatibility of receiving areas with surrounding development) or the necessity of a structure type shift, such as underground parking (which increases costs and skews the marginal value relationship). Only further work of the "pro forma" nature outlined immediately above seems capable of really evaluating this potential pitfall in the use of a one-size-fits-all conversion equation.

Arguing against the creation of a different equation for each different residential or non-residential use or zone, is the generic principle that all regulatory schemes should be kept as simple as possible. Avoiding the bureaucratic problems that complexity creates - problems of public understanding, accounting complexity, administrative efficiency, etc. - is a cardinal virtue in public administration. This basically was the reason that a conversion equation to apply TDR's to non-residential zones was not attempted at the beginning of the TDR program in 1980.

In short, while it may well be possible to invent a method of arriving at a conversion formula that statistically is more custom tailored to the complexity of the receiving area landscape, how well may it stack up against the value of administrative simplicity? If time permits, I would argue for significantly more research of the pro-forma nature before answering this question.

It is assumed that the next phase of this work project will be for the Planning Board to give direction about whether to pursue the conversion equation idea further, and, if so, how much additional work to do on refinement of the numbers.

A preliminary conclusion can be offered here, however. It seems technically feasible to open up a new market for TDR's, by converting existing nonresidential zones to optional method zones that contain a bonus density reserved for TDR purchase. A preliminary conversion equation could be:

1 Transferable Development Right = 1,500 square feet Non-Residential
Floor Space

The next question to ask is: What other considerations should be evaluated before concluding that this is a desirable and workable proposal? Such considerations are dealt with below in Section C, Bonus Density Capacity in Receiving Areas.

(B) THE BLT MARKET PROPOSAL

The Ag Report Proposal

The purpose of the BLT proposal is described in the Ag Report as being twofold: (1) "to reduce the number of buildable lots in the Agricultural Reserve while providing equity to landowners" (*note -an equity concern*); and (2) "to preserve by easement as much

farmland as possible" (*note – a preservation concern*). To understand the latter point better, it is relevant to make clear a fact that has not always been prominently pointed out in documents and discussions about the relative effectiveness of the agricultural preservation program in Montgomery County.

For some reason, that is not clear to anyone with whom I have spoken so far, the legal instrument called a "Transfer of Development Rights (TDR) Easement" does not, in fact, put an easement on the use of land such as to prevent any use other than cultivation for agriculture. It simply reduces the number of original TDR's granted to the land under the Rural Density Transfer Zone, in the amount of whatever number of TDR's are "severed" by the easement transaction.³ This "TDR Easement" might more accurately be described as a "Reduction in TDR's Easement".

What remains, after a TDR Easement is severed, is the residual number of original TDR's still available, which includes those development rights that could, under the zone, be used to actually build houses on the land. These are the BLT's. For example, a 100 acre farm is entitled to 20 total TDR's, of which 4 are BLT's (100 acres divided by 25 acres per house = 4 BLT's).

Thus, until such time as the owner severs his/her BLT's, there remains a threat to the continued agricultural use of the land, insofar as exurbanite mansions on 25 acre lots constitute a threat to farming. The degree to which the development of such new houses, at a density of one house per 25 acres, does, in fact, constitute a threat to the continued use of the land for agriculture is the nub of this BLT issue.

Many supporters of the Ag Reserve, as well as those supporting this BLT proposal, seem persuaded that such development does, indeed, constitute a serious threat. The case seems to run somewhat as follows. Houses on 25 acre lots tend to be very large and expensive, basically exurban estates. Families living in such houses typically derive their wealth from sources other than local agriculture, and have lifestyles that give preference to open space fields and woods, often with horse riding facilities than to operations that produce food, such as corn, cereals, produce, fruit, beef, milk, etc..

Scatteration of such houses at these densities, over the agricultural

³ Note - A severed TDR can be sold or held for future sale to a receiving area.

landscape, not only creates a fragmentation of the residual farmable open land, a fragmentation that makes farming operations difficult in time and space. It also builds a community of political resistance to the "industrial nuisance" aspect of food production. In short, a pattern of such houses at these densities is incompatible with a healthy food production economy.

This line of argument is conceptually the same as that used to justify the original establishment of the Ag Reserve and its supporting implementation instruments, although the threat in 1980 was from fragmentation into five acre housing parcels. rather than 25 acre parcels. The comprehensive intent of the Ag Plan was to preserve not only farmland, but also farming operations. As time goes on, and the nature of farming operations changes in response to global and economic conditions, the question becomes how best to implement the basic principle that preserving local food production is an extremely valuable and important public purpose.

Alternative Possible Responses to the Ag Group Proposal

To be effective, the Ag Report's proposal for a BLT system requires a source of funding. To satisfy this requirement, the Ag Report proposes two possible sources: (1) county government funds set aside for farmland easement purchases, plus a portion of the transfer tax; and (2) a new market driven TDR program, whereby BLT's can be sold to receiving areas in non-residential zones.

Upon closer examination, it is apparent that, to achieve a price comparable to what a BLT could command in the market for actual residential construction, the amount of money currently available in the first funding source (government) is likely to be insufficient. The annual estimate shown in the Ag Report would buy only a relatively few BLT's at a price equivalent to their market value for construction. Hence, the burden of testing this BLT proposal seems to fall primarily on the second funding source mentioned above, a new TDR system for BLT's.

This second proposal is the focus of this section. But it seems desirable to avoid being too narrow in examining this topic. Thus, consideration of the factors at work has led me to the conclusion that there are four basic conceptual approaches to this residential construction threat problem: (1) A Tax Based System; (2) A Market Trading System; (3) A Regulation Based System; and (4) A Hybrid System, composed of elements from the first three.

Under a Tax Based System, some continuing source of funding would be established, based on tax revenue sufficient to permit the sale of enough BLT's over time to greatly reduce the threat to farming.

Under a Market Based Trading System, two approaches might be taken. Under the first, BLT's would be valued at some multiple of a regular TDR, and the receiving area capacity for TDR's would be expanded to accommodate this additional supply. Under the second, BLT's would be established as a class of TDR's separate from the other TDR's, and a new receiving area market for these BLT's would be established through new zoning. The latter is what the Ag Report recommends.

Under a Regulation Based System, new regulations would be applied to the Ag Reserve Zoning that would reduce the harmful effect of new house construction on the ability to farm effectively. These regulations would affect the way in which houses constructed would be sited on the land, or otherwise shaped and conditioned so as to minimize their effect on productive agriculture.

Under a Hybrid System, certain elements from among the first three systems would be combined to form a composite system, crafted so as to ease the pressures that each of the first three approaches tends to put on collateral considerations.

(1) A Tax Based System

Establishing a tax or fee based system that provides funds to buy BLT's obviously is the most direct and simple way of providing equity to Ag Reserve landowners without their having to build houses on their land. The difficulty is the political problem of making a governmental commitment, in the face of competing public service needs, to provide the amount of revenue required to approach the market sale prices of such buildable lots.

Staff has estimated that there are about 1,600 buildable lots remaining in the Ag Reserve (see Appendix B), after allowing for deductions from zoning capacity for inability to achieve septic tank approval and other relevant considerations. Staff data suggests that prices for such lots hovered around \$375,000 (possibly more) during the housing bubble of the last five years. Under current recessionary trends, this market has dropped off, and housing prices generally have begun to decline. So it is difficult to peg any particular price in a fluctuating economy.

But if we just use recent peak prices as a guide for sketch approximations, and assume that farmland prices at the same time were about \$5,000 per acre, then a BLT would retain a residual farmland value, after it was put under easement, of about \$125,000. Subtracting the residual farmland value from the market value, we are left with an easement sale price of about \$250,000. To extinguish all the remaining 1,600 BLT's through easement acquisition, under this scenario, would take, therefore, about \$400,000,000.

Of course, this could be accomplished over quite a few years. But if the program were to be completed in 20 years, it would take about \$20,000,000 per year in constant dollars. The amount of money in the 2008 budget, that might be available for this program, was estimated in the Ag Report (before current budget shortfalls were projected) to be perhaps as much as \$6,000,000.

We could reduce these numbers significantly to guesstimate their level under a more normal economic scenario. But funding a direct easement purchase program for BLT's, sufficient to extinguish the BLT's, would still appear to require a significant increase in tax based revenue.

Another way of assessing the funding magnitude of the BLT extinguishment need is to compare it to the TDR extinguishment need. The recent staff report, called "2007 Tracking Transferable Development Rights", estimates that there are close to 5,000 TDR's remaining to be sent to receiving areas, assuming that all of them needed to be converted to money (many of those that have been severed but not sold are held by government). If we count only those TDR's that have not yet been severed, not counting BLT's, the number is much less - 1,500.

Staff data suggest that the market value of TDR's may have reached as much as \$40,000 during the housing bubble of the last five years. If the TDR extinguishments need is 1,500 units, then its cost in dollars, at \$40,000 per unit, would be \$60,000,000. If it is 5,000 units, its cost would be \$200,000,000. Both costs are well below the \$400,000,000 BLT estimate based on relative real estate values from the same time period. Yet another way to compare the relative magnitude of BLT demand to that of TDR demand is to compare their relative prices above. At \$250,000 and \$40,000 respectively, one BLT is worth more than six TDR's.

Now we must emphasize again that these real estate values come from the peak of an unparalleled housing bubble that is now beginning its descent towards something more normal. But the relationship between

the magnitude of the total BLT value and the total TDR value still has relevance for evaluating the Ag Report proposals, even if the market figures decline for both kinds of TDR's.

(2) A Market Based Trading System

Two ways of crafting such a system for BLT's were outlined above. The easiest would be to set up a system whereby BLT's are converted to TDR's, by being given an abstract dollar value that is some multiplier of the value of a regular TDR. The receiving areas of the county would then be expanded to accommodate this larger supply of TDR's, including use of a conversion equation to allow opening up the non-residential receiving area market.

This method is easiest because it would not require changing much about the existing TDR system, except for enlarging the receiving area capacity by expanding it into the non-residential zones. However, this method would not directly address the perceived threat from the buildable lots. By simply enlarging the supply pool of regular TDR's, there would be no incentive for landowners to put an actual conservation easement on their residual buildable lots. Unless a new form of easement, different than the existing one for TDR's, is put directly on the buildable lots, the threat from 25 acre estates would not be reduced by this market system.

The second method, as recommended by the Ag Report, would be more effective in terms of its mechanics. BLT's would be set up as a separate category of TDR's. A new market for them would be established by: (1) changing the zoning in nonresidential receiving area zones to provide for optional method bonus densities in return for BLT purchase; (2) by using a residential to non-residential conversion equation to establish the bonus density criteria; and (3) by creating a new easement mechanism, applicable only to BLT's, that removes all uses except agricultural ones from specific parcels of land.

There is an uncertainty hovering over both of these methods, namely the ability to find enough receiving area capacity to accommodate the number of remaining regular TDR's that still remain in the Ag Reserve, in addition to the 1,600 net number of BLT's that need a home. As mentioned above, Staff estimates that we need additional receiving area capacity in the amount somewhere between 3,000 and 8,000 TDR's. Comparing this to the 9,000 TDR's that have been severed from the land since 1980 (25 years +), it is clear that the combined TDR/BLT needs, if totally placed on the market trading system, represent a significant

challenge.

Ignore, for the moment however, this question of whether there is enough total capacity in the overall receiving area in the future. As a stand alone proposition, this second BLT system, as proposed by the Ag Report, seems to be workable from a technical perspective, although obviously there would remain a number of legal and administrative details to work through.

The more interesting questions arise when we come to consider the effect of this BLT system, plus the TDR needs, on the existing zoning regulations and procedures. Specifically, what kind of burdens would this system place on the new optional zones that would need to be created to accommodate these BLT's? These questions are addressed further below in Section C, Bonus Density Capacity in Receiving Areas.

(3) A Regulation Based System

The only alternative, to a system that collects money to purchase BLT's at market value, either from the government or from a trading system, is either: (1) to change the RDT Zone to require a minimum residential lot size greater than 25 acres (100?); or (2) to re-examine the original question of how much of a threat to agriculture is posed by exurban mansions on 25 acre lots.

Given the history of the TDR program in Montgomery County, and the strong support of so many people for a continuing partnership between the urban community and the farming community, no one, to my knowledge, has suggested considering the first action. This leaves the second alternative above for possible consideration.

The argument outlined at the beginning of this section makes it clear that there are two characteristics of BLT housing that create most of the problem. One is the detrimental effect on farm operations caused by the fragmentation of the landscape by the new houses, and, more importantly, the way the rest of their lots are used for scenic landscaped surrounds. The other is the cultural climate created by the new exurban migrants, with their presumed aversion to the "nuisance" aspects of farm operations.

Of these two, the more serious effect would seem to be the first. Strong right-to-farm laws could be expected to be able to overcome the second problem, at least sufficiently to be reduce the actual impact on farm

operations from exurban political opposition. But land fragmentation makes a more immediate impact on operations and efficiency, especially for crop farming that requires equipment to have easy access to large contiguous fields of monoculture crops. And this kind of farming tends to be the dominant mode at present. It allows relatively small numbers of farmers to grow food on large acreages of land, through the use of mechanical equipment.

A shift in the dominant kind of food grown, towards vegetables, fruit, and related smaller scale operations, would allow farming to continue on smaller plots of ground than is necessary for crops that require large fields to be efficient. Such a shift is often mentioned as the necessary next step, in literature assessing the coming impacts global warming and energy shortfalls. Once energy costs go high enough, the importance of producing food closer to home will become evident, is the thrust of these arguments.

In such a sustainability scenario, a house on a 25 acre lot would not create a farming obstacle, from an operations perspective. As long as the house was not located so as to ruin effective use of the good soil, each 25 acre residential plot could operate like a small farm. A significant obstacle to food production would still remain, however, if the house is occupied by people who do not want to use the land for farming, and/or if the house is located on the best soil. This observation leads us back to the second obstacle mentioned above, the lifestyle character of the people who want to live in the kind of houses that currently are the dominant market for on site BLT houses.

The dilemma here, of course, is that it is precisely this character that makes the BLT worth so much money in the real estate market, and provides such a temptation to the farmland owner to sell. The only way, that I can think of, to keep the sale price of the BLT high in the residential real estate market, and still reduce the impact of new houses on the farming landscape, would be to limit the size of the lot around the house, and require that all such houses, other than those occupied by families with a direct tie to farming, be clustered together in locations selected for their minimum disruptive effect on the farming landscape.

The difficulty with this idea, of course, is the need to provide sewerage for these new houses. In order to use septic tanks, soil must drain well enough and there must be adequate area for the septic field. The use of sand mounds has been encouraged by some as a good way to overcome this problem, and disparaged by others as an inappropriate subversion of

the original intent of the Agricultural Preservation Plan. The Ag Group's Report makes one proposal for dealing with this controversy, and I believe consideration of this matter is still ongoing.

This paper is not the place to delve into this topic, but it is necessary to recognize that the sewerage problem is one major obstacle to the above idea of clustering BLT houses on small lots. Another major obstacle could present itself if it should turn out that the best locations for such clusters of houses were in areas that are classified as forest. A related impediment could be the matter of impervious footprint, with its deleterious effects on the environment.

It is conceivable that there might be ways to overcome, or at least ameliorate, these problems (e.g. innovative small treatment systems and hamlet location planning) that could be explored, if the concept held any interest for policy makers. Such a regulatory approach undoubtedly would not satisfy the aspirations of all who would prefer to see the threat of BLT development extinguished by purchase of easements. It is presented here only to provide a more comprehensive conceptual overview of alternative strategies that may need to be considered in the event that neither a Tax Based System nor a BLT Market Trading System is considered to be feasible.

(4) A Hybrid System

I will not spend a lot of time here speculating on whether it would be possible to cobble together a useful marriage of elements from the first three alternative conceptual systems. Some obvious possibilities present themselves.

Under a Tax Based scenario, further funding might be found through creative thinking about other sources of revenue. For example, for the past two years there has existed an expanded federal tax credit for easements, and I am given to understand that it is possible that this law may be extended by the current Congress.

This provision, that expired on December 31, 2007, provided a 100% forgiveness of federal income tax for up to 15 years, with the length of time being calculated as the market value of the development right easement divided by the farmer's annual income over time. While this does not amount to the sale price of a BLT for construction, it could amount to a percentage of this equal to the farmer's tax bracket (e.g. 28%).

Another funding possibility might be the use of Installment Purchase Agreements that may increase returns to the farmer using the leverage of time and interest rates. I am not a tax lawyer, so I may be mentioning things that already have been examined in great depth already by local experts. The point is simply that further work in this direction is at least a conceivable avenue to explore.

Under a Market Based Trading System, one could consider the idea of settling for a system that would be capable of providing only a portion of the total supply necessary to extinguish all the residual BLT's.

Under a Regulation Based System, it might be possible to develop a BLT clustering plan that could ameliorate, at least to some extent, the problems created if BLT's continue to be sold for house construction.

(C) BONUS DENSITY CAPACITY IN RECEIVING AREAS

Zoning Districts in Perspective

Receiving area zones are part of a family of zoning types that may be called "Incentive Zones". Incentive zones have two parts: (a) a "base" density ceiling, under which a property developer is entitled to build without any further governmental review, other than obtaining permits to meet various code provisions, such as subdivision, building, fire, occupancy, etc.; and (b) an "optional method" density ceiling, greater than the base density ceiling, for which the developer may apply, and which may be granted by the Planning Board, provided that the developer meets a set of objectives that are used as a benchmark by the Board during the process of Project and Site Plan Review.

Before incentive zones, with their built-in optional method guidelines, there developed in the State of Maryland an earlier form of optional method zoning called Floating Zones. These zones also contain criteria that must be met in order to for them to be approved for a given site, and they also require a developer to request them, rather than having them imposed by governmental fiat, as is the case with traditional zoning (often called "Euclidean Zoning" after the court case that first endorsed zoning in 1926).

Floating Zones got their name because they were not localized in space until they were brought to ground by a successful developer petition. They "floated" above the landscape, just as a set of restaurant menu options "floats" above the table in virtual space, each zone with its own

characteristics set forth in criteria that must be met to ensure that, when the zone is applied to a given location, the marriage of use and location will produce an amenity rather than a nuisance.

The Floating Zone was an invention that represented a halfway house, between a government initiated Euclidean zoning pattern that might not provide enough opportunity for developer initiated creativity and change, and a developer initiated "spot zoning" pattern that might not provide enough spatial continuity and coordination to achieve the zoning goal of community and county wide land use compatibility and amenity. An example of the latter system, that is common in many other jurisdictions, is the landowner "proffer" system of rezoning one parcel at a time, and negotiating the conditional criteria on an ad hoc and idiosyncratic basis.

Incentive Zones were an evolution of the Floating Zone concept, which married a traditional Euclidean base zone, which could be assigned to locations by governmental fiat, with a Floating zone optional method, which could only be assigned to the land through a request of the owner. In essence, Incentive Zones incorporate a Floating Zone within a Euclidean Zone, thereby affording government the ability to take the initiative in prescribing where certain kinds of uses and densities of a general nature should be located, while at the same time allowing for fine grained creativity and timing by individual parcel developers.

The key point to extract from this history is the legal importance of the distinction between the base capacity of an incentive zone and its cumulative bonus capacity. How these are structured in any given incentive zone is critical to how much the bonus density will be used in practice to achieve desired planning objectives.

Planning for Zoning Types and Their Locations

The planning theory underlying the structure of these zones is that their base density should be considered acceptable for the zone's location (in case the developer chooses to not apply for optional method), and that their optional method density ceilings also should be considered acceptable (in case the developer does choose to apply for this).

The fact that two alternative densities are both considered to be acceptable for one location has sometimes been difficult to understand by people who are attracted to precision. In particular, some discussion in the past revolved around the question of whether an adequate public

facilities (APF) ordinance was compatible with incentive zoning. I think this was dealt with by reference to planning principles that used the optional method ceiling as the basis of APF calculations at the planning stage, and that used the actual project proposal as the basis at subdivision and project plan stage.

Another aspect, that must be kept in mind in the planning exercise, is the relationship between the uses, densities, and heights of the new zones compared to these same attributes of the existing zoning in place. Calculations of this nature are necessary to estimate how much residual bonus density capacity is likely to be available in different areas, as well as over the county as a whole. Both are significant, but the latter is more pertinent to the overall TDR/BLT receiving area capacity question.

The main point here is that the assignment of base and optional method density ceilings is an art form that requires careful consideration of legal principles and how the incentive zone will work in practice. Too high a base ceiling can result in marginal or no use of the optional method. Too low a base ceiling can work against larger planning objectives if it results in actual development that forecloses the opportunity to achieve higher densities where such densities are desired. And estimating the effect on the market of any particular zone, and its location, must always be kept in the perspective of how many alternative opportunities for market development exist in some other part of the county or region.

The challenge of the Ag Report's proposals for TDR's and BLT's is to craft new zones that have a greater bonus capacity, and to give first priority in the use of this capacity to TDR's and BLT's, rather than to other possibly competing objectives. To consider this aspect, we must think about the number of other planning objectives, for the use of incentive zoning, that also clamor for attention.

Evaluating Bonus Density Objectives

At present, at least five public welfare objectives for incentive zones are on the table, based on recent discussions during Planning Board and Staff work sessions on master plans: (1) Public Amenities; (2) Better Design; (3) Environmental Sustainability; (4) Affordable Housing; and (5) Agricultural Preservation. As new plans move toward more compact and mixed use "Urban Villages" around transit served locations, all of these objectives become more important.

Public Amenities include the familiar elements pioneered in the Central

Business District Zones, elements such as attractive pavement materials, street trees and lamps and furniture and fountains and art, and space made available for community purposes beyond the right of way of the street layout (e.g. exhibit spaces, meeting places, theaters, etc.).

Better Design also has long been an implicit objective among the purposes of the Central Business District (CBD) Zones, under the general rubric of "Amenity". Lately it has received a new emphasis that is reflected in the acceptance by the real estate industry and the general public of various urban design principles promoted by the Congress for the New Urbanism (c.f. Form Based Codes, etc.).

Environmental Sustainability is an objective that also is implicit in the purposes of the CBD Zones, under the general rubric of "Amenity". Like Urban Design, this objective has been given new emphasis with the development of standard techniques for conserving energy, stormwater, and plant cover in the design of new buildings and streetscapes (e.g. LEED, etc.).

Affordable Housing has a 33 year history in county zoning, in the form of the Moderate Priced Dwelling Unit Ordinance, and its more recent extension into certain locations, called the Work Force Housing element.

Agricultural Preservation has a 27 year history in the County, in the form of TDR's for residential areas. What is new, in terms of Incentive Zones, is the proposal to extend the requirement to accommodate TDR's into non-residential areas. It is this proposal that brings pressure to bear on the question of how well all five of these objectives can be accommodated as new zones are crafted.

It should be noted that there is a significant difference between the first three objectives and the second two. The first three (Public Amenities, Better Design, and Environmental Sustainability) all pertain to the local physical character of the new place we want to create through the new zone. The second two are quantitative and economic objectives that derive from countywide needs rather than local spatial needs. Blending the local qualitative with the countywide quantitative seems to be one way to look at the challenge.

The question for the TDR/BLT proposals is: Can all of these five objectives be accommodated in one zone? How low does the base density need to be set, compared to the maximum bonus density, to ensure that developers can be expected to satisfy them all? Or alternatively, how high

does the bonus density need to be set to accomplish the same objective?
Some history is relevant.

In the case of the Shady Grove Plan, a new zone was adopted, called the Transit Oriented Mixed Use Zone - 2 (TOMX-2). This was an incentive zone similar to the CBD Zones - and like them, intended for use in a transit centered mixed use area. A companion zone (TOMX-2/TDR) allowed for TDR's, but limited their use in the optional method to above a certain Floor Area Ratio (FAR). The bonus density between this level and the lower FAR ceiling for the base zoning was reserved for objectives other than Agricultural Preservation.

The Ag Report's proposals specifically recommend reversing this priority sequence in the future. Thus, the Ag Report's recommendations force a deeper evaluation of this bonus density capacity issue than has been needed heretofore. For example, consider the method of deciding among competing objectives recently explored by the Planning Board in the context of work sessions on the Twinbrook and White Flint Plans.

The Board's preferred position was that no ranking of objectives should be stated in the Zone or in the Plan, under the principle that it is important for the Planning Board to be able to make a composite judgment on each project, about the balance across the five objectives that it achieves.

This is certainly a reasonable way to proceed. It simply makes it difficult to analyze with any degree of rigor whether a BLT receiving area system could succeed in clearing the Ag Reserve of BLT's over time, or how many regular TDR's are likely to be absorbed by any given receiving area zoning. Some further evaluation of this topic seems desirable if the recommendations of the Ag Report are to be addressed directly.

The relevant passage in the Ag Report is "the County Council should adopt a policy whereby in any master plan, if a site is recommended for increased density, there should be an assumption that the increased density should be through the use of TDR's, unless there is a compelling reason to not require TDR's. We believe the burden of proof should be to prove why TDR's are inappropriate on a particular site, rather than to prove why TDR's are warranted."

Completion of this paper, in time to brief the Board on these issues on January 24, does not permit a continuing exploration, in writing, of further alternative ways to address this topic. It is perhaps most useful to

conclude with my own personal perspective at this moment.

Concluding Remarks

My preliminary opinion at this time, subject to revision if additional analysis can be performed, is as follows:

- 1 An equation for converting Transferable Development Rights (TDR's) from the Agricultural Reserve into equivalent square feet of nonresidential development, for use in receiving areas, can be established. To analyze how effective it would be in practice, in terms of actual TDR purchase amounts, requires more analysis. A preliminary equation is:

One TDR = 1,500 square feet of non-residential floor space.

- 2 If a Building Lot Termination (BLT) trading system, to extinguish buildable lots in the Agricultural Reserve is to be established, it needs to be a system separate from the existing TDR system. This suggests targeting new zoning for non-residential and mixed use areas, as recommended by the Ag Report.

- 3 To attract the desired high value of a BLT, the density bonus for a BLT needs to be about six times the bonus for a regular TDR. This yields a preliminary residential to non-residential conversion equation of :

One BLT = 9,000 square feet of non-residential floor space.

- 4 A large portion of the total county capacity for new non-residential and mixed use zoning lies within the jurisdictions of Rockville and Gaithersburg, which at present do not participate in the Agricultural Preservation program. The Ag Report recommends finding ways to bring these jurisdictions into the program. Further work will be necessary to estimate the County's total holding capacity more accurately.

- 5 If this new non-residential and mixed use market is reserved for BLT's, it seems questionable whether there will be enough residual market to accommodate all the remaining regular TDR's. Further work will be necessary to estimate this more accurately.

- 6 Accordingly, if a decision must be made without the further study mentioned above, it seems more prudent to retain the potential new market in non-residential and mixed use zoning for regular TDR's, since that is a commitment already made, whereas there is not yet such a commitment to BLT's.
- 7 Even assuming that new receiving area capacity should be limited to regular TDR's, there remain significant issues to resolve about how the contending objectives for Optional Method Bonus Density in new zones should be prioritized (e.g. Public Amenities, Better Design, Environmental Sustainability, Affordable Housing; and Agricultural Preservation).



THE MARYLAND-NATIONAL CAPITAL PARK & PLANNING COMMISSION

January 18, 2008

Memorandum

To: Dick Tustian

From: Jacob Sesker, Research & Technology Center, 301-650-5619

Re: TDR Residential to Commercial Conversion

Finding

Commercial space is roughly 20% more valuable than office space. Approximately 1,500 square feet of commercial space has the same value as 1,800 square feet of residential space.

Introduction

The TDR program in Montgomery County has been in place for a quarter of a century. Until now the program has served to provide purchasers of TDRs with additional residential density (measured in dwelling units). The Research & Technology Center was asked to advise the Planning Board regarding how to set a conversion rate in order to allow these instruments to be used to buy additional commercial or mixed-use square footage.

This was not, *per se*, an inquiry into the inherent value to developers of additional commercial density. The value of additional commercial density to developers is very project-specific, and depends upon the difference between the income generated by the extra density and the cost of building that extra density.¹ Instead, this inquiry involved simply a comparison between the sales value of residential space and the capitalized value of commercial space. *In essence the question herein addressed is: if a developer is willing to use a TDR now to buy a certain increment of residential density, what would be a comparable or competitive increment of commercial density?*

¹ Neither the income nor the cost lends itself to tidy generalization. While the financial feasibility of using TDRs at a particular price can be calculated for individual projects using *pro forma* analysis of that project's costs and revenues, it is not practical to attempt to calculate that feasibility for all projects across Montgomery County.

Assumptions

The following assumptions were made in this analysis:

- In converting dwelling units to square feet, the analysis assumed that a townhome represents the most representative “base” dwelling type. This assumption is reasonable based upon the nature of current and future receiving areas, and the fact that townhomes represent a “midpoint” between single-family and multi-family development.
- While comparisons of the value of existing office space and existing residential space are informative, the most relevant comparisons are between the values of new office space and new residential space.
- “Commercial” for calculation purposes will be limited to office; however, it is envisioned that TDRs could also be used for retail density.
- “Office” is assumed to be Class A office space.

Analysis

Step One: Convert Townhouse Dwelling Unit to Townhouse Square Footage

According to the Census Update Survey, the median size of a townhome built in Montgomery County between 2000 and 2005 is 1,816 square feet.² Analysis of parcel file data shows a similar result, with a median size of new townhomes of 1,792 square feet. Given these numbers, it is assumed that one townhouse equals 1,800 square feet.

Step Two: Calculate the Value (Per Square Foot) of a New Townhouse

In 2006, the median price of new townhouses in Montgomery County was \$ 518,510. Assuming a size of 1,816 square feet, the median price was \$285 per square foot.

Step Three: Calculate the Value (Per Square Foot) of New Class “A” Office Space

According to the GVA Advantis (Q2 07) office market report, the average rent for Class A office space is \$30.70. This average rent includes all Class A office space, no matter the age. It is assumed that the countywide average value of new Class A office space would be closer to \$35 per square foot.³ Accounting for operating expenses of 30% and the countywide vacancy rate of 10% and then capitalized⁴ at 6% the value is \$350 (capitalized at 6.50% it would be \$323).⁵

² As a reference point, the median size of SFD homes built between 2000 and 2005 is 3,348 square feet.

³ Because there are relatively few new Class “A” buildings in the County, it is possible only to estimate the countywide average Class “A” rents for new office space. New Class A office countywide would probably range from \$25 to \$50, with trophy level rents of \$45-\$50 attainable in downtown Bethesda.

⁴ In real estate, “capitalization” refers to the process of converting a net income stream from rentals to a sale value.

⁵ “Korpacz Real Estate Investor Survey, Q3 07,” Price Waterhouse Coopers. Cap rates of 6% and 6.5% are based upon the results of investor survey responses for the Q3 07 Suburban Maryland office market.

Step Four: Establish a Ratio of the Values (Per Sq. Ft.) of Townhouses and Class "A" Office Space

The value of new Class "A" office space, as established in Step Three (above) is roughly \$323 to \$350. The value of a new townhome, as established in Step Two (above), is \$285 per square foot. New Class "A" office space is roughly 13% to 23% more valuable than new townhouse residential space. Put differently, new townhouse space is 12% to 19% less valuable than new Class "A" office space.⁶

Step Five: Apply the Ratio of Values (Established in Step Four) to the Townhouse Square Footage (Established in Step One)

New townhouse space is 12% to 19% less valuable than Class "A" office space. In order to determine how much office space has the same value as 1,800 square feet of new townhouse, the 1,800 figure is multiplied by 81% and 88%--doing so establishes a range of 1,458 square feet to 1,584 square feet. Based on this methodology, approximately 1,500 square feet of new Class "A" office space has the same value as 1,800 square feet of new townhouse space.

Implications

The Planning Board has yet to determine how the new system will work. Examples of possible variations include the following:

- 1 TDR=1 dwelling unit or 1,500 square feet of commercial
- 1 TDR=1,800 square feet of residential or 1,500 square feet of commercial
- 1 TDR=1,800 square feet of commercial or residential

In spite of these and other unknowns, the following conclusions are reasonable:

- Commercial space is roughly 20% more valuable than residential space
- A townhouse dwelling unit is roughly equivalent in value to 1,500 square feet of commercial space

⁶ For example, \$350 is 23% more than \$285, whereas \$285 is 19% less than \$350.

Potential BLTs (Buildable TDRs)

- The 2007 TDR Tracking Report excludes BLTs from its analysis, yet suggests that if included, approximately 2,400 BLTs would be added to the sending supply. From this amount the following adjustments could be made -
 - Subtract approximately 200 BLT that have been severed through easement
 - Subtract approximately 200 BLTs on parcels with less than 50% suitable soil
 - Subtract approximately 400 BLTs on parcels with a low likelihood of sewer capability
- Resulting in approximately 1,600 potential BLTs
- An alternative estimation procedure analyzes farm level data -
 - There are approximately 577 farms in the Rural Density Transfer zone
 - At an average size of 130 acres, this yields 75,010 acres of farmland
 - Dividing total farmland by the number of buildable lots, at 25 acres per lot, yields 3000 lots
 - Assuming one dwelling unit retained per farm, the number of buildable lots becomes 2,423
 - Minus severed BLTs, BLTs on parcels with unsuitable soils, and those that won't perc
- Resulting in approximately 1,600 potential BLTs