

Adequate Public Facilities Ordinances in Maryland:

An Analysis of their Implementation and Effects on Residential Development in the Baltimore Metropolitan Area

A Report for the Home Builders Association of Maryland

by

The National Center for Smart Growth Research and Education

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I. Introduction

I.A. The Planning Context of APFO Implementation in Maryland

Since the late 1960s, jurisdictions in several U.S. states have implemented adequate public facilities ordinances (APFOs), a growth management tool that attempts to link the timing of a new development to the availability of facilities needed to service it. Under an APFO, before issuing development approval for a project the jurisdiction ascertains whether the project meets certain standards regarding adequacy of selected facilities and services needed to support that development. If the jurisdiction's schedule of capital improvement provision is not timely for the developer's purposes, the project may not proceed unless the developer chooses to build/fund the needed facilities/services to the required standards (Porter 1997; White 1996).

In 1969, Ramapo, NY became one of the first municipalities in the U.S. to implement an APFO, and that state's highest court upheld the constitutionality of the strategy in *Golden vs. Planning Board of the Town of Ramapo* (324 N.Y.S. 2d 178 (N.Y. 1971). By 1991 over a third of California's municipalities had APFOs (Porter 1997). Local APFOs are required under the state growth management systems of Washington and Florida, and are currently used by 13 of Maryland's 23 counties and by 12 of its municipalities.

In 1992 the Maryland State Legislature passed the Economic Growth, Resource Protection and Planning Act. Among the act's provisions was that all local comprehensive plans were to address six visions, with two more added in later years. Of the eight visions, visions 1, 3, 6, 7, and 8 are particularly relevant to APFO implementation: Those five are:

1. Development is concentrated in suitable areas
3. In rural areas, growth is directed to existing population centers and rural resource areas are protected
6. To assure achievement of visions (1) through (5), economic growth is encouraged and regulatory mechanisms are streamlined
7. Adequate public facilities and infrastructure under the control of the county or municipality are available or planned in areas where growth is to occur
8. Funding mechanisms are addressed to achieve these visions.

The 1992 Act also mandated that zoning and other regulations be consistent with the local comprehensive plan and with the visions.

In the Spring of 1997 the Maryland State Legislature approved the Smart Growth Areas Act, which directs State funding into already developed areas and areas that county governments have designated for future growth based on state criteria. With certain exceptions, only these "Smart Growth Areas" and "Priority Funding Areas" can qualify for State funds for water, sewer, transportation, housing, economic development and environmental projects. The Act's intent is to discourage sprawl by denying State subsidies for it, and to promote development and revitalization in cities and inner

suburbs. In effect, the Smart Growth Initiatives embodied a set of programs intended to address visions 1 and 3, above.

While the term “Smart Growth” (upper-case “S” and “G”) refers herein to a package of specific, incentive-based programs used in Maryland, the term “smart growth” (lower case “s” and “g”) will refer to a set of principles espoused by advocates of a national, anti-sprawl movement. The Smart Growth Network website (www.smartgrowth.org) enumerates ten smart growth principles, such as “mix land uses”, “take advantage of compact building design”, “create walkable communities”, and “provide a variety of transportation choices”. Two of the Smart Growth Network principles are the following: “strengthen and direct development towards existing communities”; and “make development decisions predictable, fair and cost effective”.

By mid-2005 it appears that in many locations in Maryland the application of local APFOs is inconsistent with the Maryland 1992 Planning Act, the 1997 Smart Growth Areas Act and with the two Smart Growth Network principles cited above. For example, several developers interviewed for this study assert that, aside from the Not-In-My-Backyard (NIMBY) syndrome, APFOs are the biggest obstacles to their attempts to build compact developments in either existing communities or designated growth areas.

It is worth noting that, ideally, an APFO should be merely one of the tools that can be used to enable a jurisdiction to implement its comprehensive plan. The comprehensive plan should establish the overall vision, goals and policies for long-range growth in the jurisdiction. The jurisdiction’s local area master plans, zoning and other regulations, capital improvement program, and other taxing, expenditure and incentive programs should all be consistent with jurisdiction’s comprehensive plan (Kelly and Becker 2000,45-6). Accordingly, a jurisdiction’s APFO and its capital improvement program, impact fees and other infrastructure-related taxing / spending programs should be coordinated in order to enable development in areas designated for growth under the comprehensive plan. An APFO can help ensure that growth within the jurisdiction does not outpace the provision of services and facilities needed to support the residents in areas experiencing growth.

In fact, Maryland is a state well-suited to incorporate APFOs into local planning. Major power for land use planning rests with 23 counties. While there are about 150 cities and towns in the state, a relatively small number of them exercise planning and zoning power. Local governments are required to prepare six-year capital improvement programs that are undated annually. Counties must prepare 10-year water and sewer plans that include the needs and plans for cities/towns within their boundaries. School districts are coterminous with county boundaries, county elected officials have final approval over all school budgets, and county revenues help fund schools (Avin 2004). The above characteristics enhance the potential for counties to coordinate infrastructure and school funding so that development in Smart Growth areas is provided with needed services and facilities.

However, APFO implementation takes place within a political context. Standards for services and facilities, along with implementation procedures, are established by elected officials and can change depending on the growth orientation of the county council or commission. More commonly in recent years, elected officials consistently hear from vocal, current residents who express concerns about growth and such impacts as the loss of open space and increasing traffic. Elected officials also are averse to raising property tax and other fees that affect current residents (their constituency). School boards consistently hear from parents their concerns about overcrowding and aversion to redistricting. As a result, in some Maryland jurisdictions recently, especially in times of fiscal restraint and local backlash to growth, the APFO becomes the dominant land use regulatory instrument. As such, the APFO restrains development that is consistent with the comprehensive plan, with local zoning and with smart growth.

I.B. Purpose of this Report

This report examines the relationship between local APFOs and Smart Growth implementation in Maryland. The overall purpose of the study is to determine whether, the degree to which, and reasons why, APFOs complement or frustrate development in Maryland's Priority Funding Areas. This report addresses the issue through case studies of six (6) of the 13 counties in Maryland that have implemented APFOs. The six counties are located in north central Maryland, and include Anne Arundel, Baltimore, Carroll, Harford, Howard and Queen Anne's. The case studies involved a) analysis of each jurisdiction's APFO and its impact fee or excise tax policies (if any), and the APFO's relationship to the local comprehensive plan; and b) interviews with county planners and with building industry professionals familiar with the county's APFO.

In all, 13 Maryland counties had adopted APFOs by 2005, and the location of those counties is shown in Figure 1, below.

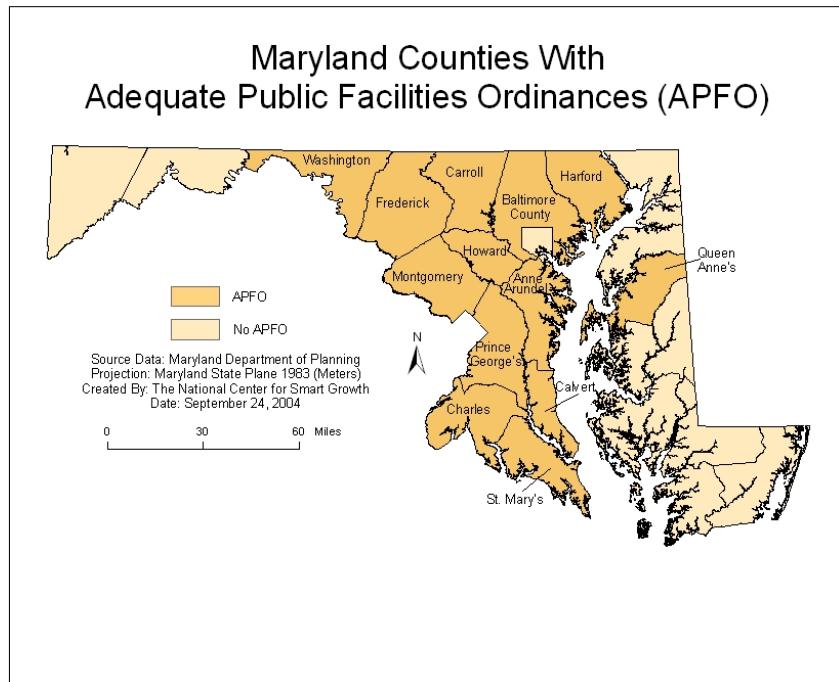


Figure 1. Maryland Counties with APFOs

The Maryland jurisdictions (including 12 municipalities) with APFOs are listed in Table 1, below. The years in which APFOs were first implemented range from 1973 (Montgomery County) to 2003 (City of Rockville). All the counties with APFOs include schools and roads as covered facilities and 10 of the 13 counties include water and sewer facilities. The table shows that of the 12 municipalities with APFOs, three are located in Washington County and the other nine are located in four counties – Carroll, Frederick, Harford and Montgomery.

**Table 1. Jurisdictions with Adequate Public Facilities Ordinances in Maryland:
First Year of Implementation and Facilities / Services Included, as of
September 2005**

Jurisdiction	Year	Facilities / Services Included
Counties		
Anne Arundel	1978	Schools, roads, water, sewer, water for fire fighting
Baltimore	1979	Schools, roads, water, sewer, storm water, recreation
Calvert	1988	Schools, roads
Carroll	1998	Schools, roads, water, sewer, police, fire/rescue
Charles	1992	Schools, roads, fire suppression in rural areas

Frederick	1991	Schools, roads, water, sewer
Harford	1991	Schools, roads, water, sewer
Howard	1992	Schools and roads
Montgomery	1973	Schools, roads, water, sewer, fire, health services
Prince George's	1981	Schools, roads, water, sewer, police/fire/rescue
Queen Anne's	2001	Schools, roads, water, sewer
St. Mary's	1990	Schools, roads, water, sewer, fire supp., storm drain.
Washington		
Municipalities (& County)		
Aberdeen (Harford)	1999	Schools, roads, water, sewer
Bel Air (Harford)	1998	Schools
Boonesboro (Wash.)	1993	Schools
Brunswick (Frederick)	1998	Schools, roads, water, sewer
Mt. Airy (Fred., Carr.)	1989	Schools, roads, water, sewer, fire/rescue
Keedysville (Wash.)	2005	Schools
Rockville (Montgomery)	2003	Schools, roads, water, sewer, fire/rescue
Smitsburg (Washington)	2005	Schools
Sykesville (Carroll)	1988	Schools, roads, water, sewer, police/fire/rescue, health services, solid waste disposal, storm drainage
Taneytown (Carroll)	1995	Schools, roads, water, sewer, storm drainage
Thurmont (Frederick)	1995	Schools, roads, water, sewer
Williamsport (Wash.)	2005	Schools

Table 2, below, compares Maryland counties that have APFOs with those counties that do not, in terms of population size and decennial population growth rates since 1960. As would be expected, the 11 counties with the largest populations in 2000 all have APFOs. In addition, counties with the largest population growth rates during at least two of the decennial periods are more likely to have APFOs. Thus, while Queen Anne's County has smaller population than four of the counties that do not have APFOs, that county's growth rate exceeded all of the non-APFO counties in the 1970s and 1980s, and was lower than only three non-APFO counties in the 1990s.

Table 2. Maryland Counties with and without APFOs in 2005: Population in 2000 and Decennial Growth Rates Since 1960

Location	2000 Pop.	Growth Rate			
		1960 - 1970	1970 - 1980	1980 - 1990	1990 - 2000
Maryland	5,296,486	26.5%	7.5%	13.4%	10.8%
With APFOs					
Anne Arundel Co.	489,656	44.0%	24.6%	15.2%	14.6%
Baltimore County	754,297	26.1%	5.6%	5.6%	9.0%
Calvert County	74,563	30.7%	67.5%	48.3%	45.1%

Carroll County	150,897	30.7%	39.6%	28.8%	22.3%
Charles County	120,546	46.4%	52.6%	39.0%	19.2%
Frederick County	195,277	18.1%	35.2%	30.9%	30.0%
Harford County	218,590	50.4%	26.5%	24.8%	20.0%
Howard County	247,842	71.3%	91.5%	58.0%	32.3%
Montgomery County	873,341	53.3%	10.8%	30.7%	15.4%
Prince George's County	801,515	84.8%	0.7%	9.5%	10.0%
Queen Anne's County	40,563	11.2%	38.5%	33.1%	19.5%
St. Mary's County	86,211	21.8%	26.4%	26.8%	13.5%
Washington County	131,923	13.8%	8.9%	7.3%	8.7%
Without APFOS					
Allegany County	74,930	26.5%	7.5%	13.4%	10.8
Caroline County	29,772	1.6%	17.0%	16.8%	10.1%
Cecil County	85,951	10.1%	13.4%	18.1%	20.5%
Dorchester County	30,674	-0.9%	4.1%	-1.3%	1.4%
Garrett County	29,846	5.2%	23.4%	6.2%	6.1%
Kent County	19,197	4.3%	3.4%	6.9%	7.6%
Somerset County	24,747	-3.6%	1.4%	22.2%	267.8%
Talbot County	33,812	9.8%	8.1%	19.3%	10.7%
Wicomico County	84,644	10.6%	19.0%	15.2%	13.9%
Worcester County	46,543	3.0%	26.4%	13.4%	32.9%

I.C. Criteria Used to Summarize Data from the Case Studies

Based on the above cited provisions of the 1992 Planning Act , the Smart Growth Areas Act and selected Smart Growth Network principles, the following are seven criteria that are used herein to summarize data from the case studies. The summary highlights the degree to which county APFO design and implementation is complimentary to smart growth and reflect planning principles consistent with Maryland planning mandates and smart growth principles. For purposes of this discussion, the criteria will be referred to as “good planning”. Some of these criteria are based on Avin (2004).

1. The local comprehensive plan provides guidance for planning regulations, including the APFO. Accordingly, the APFO favors growth within PFAs rather than outside.
2. APFO standards are reasonable.
3. APFO is justly administered.
4. The APFO feedback informs the Capital Improvement Program.
5. The APFO contributes to development decisions that are predictable, fair and cost-effective.

6. There is tight coordination between the planning department and the board of education, so that school-related decisions are consistent with the APFO and the comprehensive plan.
7. There are reasonable funding options, aside from the CIP, available to provide needed facilities/services in PFAs.

I.D. Summary of the Case Studies with Regard to Each Criterion

1. Under good planning, the local comprehensive plan should provide guidance for planning regulations, including the APFO. Accordingly, the APFO favors growth within PFAs rather than outside PFAs.

The county case studies show there is variation in the degree to which comprehensive plans are guiding APFO and CIP implementation, and to which APFOs are favoring growth in PFAs. On paper, nearly all six county APFOs would seem to be favoring growth inside PFAs rather than outside them to some degree. Every county except for Howard has more relaxed road standards in its designated growth areas or town centers than in rural areas. However, unless there is adequate infrastructure capacity within PFAs and the school districts serving them, large portions of designated growth areas will be in moratoria (such as in Anne Arundel, Carroll, and Harford counties). APFO consistency with the comprehensive plan is possible only if adequate funding is allocated to provide the necessary infrastructure in the plan's designated growth areas.

The county which ties its APFO most directly with its comprehensive plan is Baltimore. In that county, growth is only allowed inside that county's Urban-Rural Demarcation Line (URDL), and the APFO is used to accommodate growth inside the URDL. Howard County ties its APFO implementation to a growth allocation process that is based on five planning areas to which a limited number of annual subdivision approval allocations are allotted each year. The allocations are based on the county's 2000 comprehensive plan.

2. Under good planning, the APFO standards should be reasonable. In terms of schools, in Carroll county the schools are judged to be adequate only if capacity is below 100%, while in others the acceptable capacity is much higher (115% in Baltimore and Howard Counties and 120% in Queen Anne's County). Several professionals in the building industry interviewed for this study pointed out that school populations can ebb and flow over time, and that it does not make sense to initiate a subdivision approval moratorium once a school building has a projected enrollment of 100%. In the short run, many say, a county can rely on relocatable classrooms rather than declare a moratorium and / or find funding to build a new school. Only one of the six counties (Baltimore) allows for relocatable classrooms to be included in the available capacity when school adequacy is assessed. The reasonableness of having school adequacy threshold of 100% is closely related to the issue of whether school adequacy is properly determined (i.e. whether the APFO ordinance is justly administered -- see below).

A road LOS standard set at a relatively high level is questionable policy when applied to a PFA. For example, Carroll County considers a road LOS of “D” or lower to be unacceptable in its PFA, a more stringent road standard for a PFA than found in any other county with an APFO. This raises the question of whether it is more reasonable to require an expensive mitigation rather than having motorists wait a few more seconds at an intersection. Successful PFAs are going to experience increased traffic, and a LOS standard of “D” may be more appropriate in such areas.

3. Under good planning, the APFO is justly administered. This study found a high level of dissatisfaction among the development community with the way that school capacities are determined. Jim Shulte, an engineer with Security Development Group, was on the committee that designed Howard County’s original APFO. In subsequent work in Howard County he found that school administrators deliberately build in extra capacity into schools, made possible by having large rooms with movable partitions. Since the state school standard is that a classroom for 25 students must have a minimum of 800 square feet, the local school administrator could adjust the partitions so that some areas were less than that size and the school could be officially full. Or, the administrator could reduce class sizes. Or, the school board could produce erroneous enrollment figures. All this leads to skepticism about school capacity calculations.

Such skepticism was validated in a court case described in the Anne Arundel County case study. In 2003, Winchester Homes won the right to build homes when County school officials admitted in court that they knowingly used incorrect enrollment figures as the basis for denial of subdivision approval. Largely to prevent more lawsuits, the County amended its APFO to stipulate that no school district could be in moratorium for more than six years. In another Anne Arundel County example, Linton Pumphrey, a consulting engineer with John Harms Associates, said he walked through Old Mill High School and found 15 classrooms that School Board planners did not even know existed.

4. Under good planning, APFO feedback informs the local government’s capital improvement program (CIP). However, many of the building industry professionals interviewed for this study stated that they saw no evidence of this in the counties in which they have done business. For example, a few years ago in Harford County the CIP priority was placed on a school district outside of that county’s building envelope, even when school capacity increases were needed in Bel Air (within the development envelope). Baltimore County appeared to have the most responsiveness of APFO shortfall and CIP realignment.

5. Under good planning, the APFO contributes to development decisions that are predictable, fair and cost-effective. This analysis focused on four ways in which jurisdictions could address this principle in APFO design and implementation: a) by determining capacity surpluses or deficits at the concept (sketch) level of review so the developer can decide whether and/or when to proceed with project development before incurring substantial expenses; b) by enabling the developer to mitigate for capacity shortfalls by constructing improvements or paying in-lieu fees; c) by arranging reimbursement to a developer who pays for improvements that expand capacity that

benefits developers of future projects; and d) by specifying the extent of the denial period -- and limiting the denial period -- so that developers know if and when they can proceed with the project.

In terms of making capacity determinations at the concept level of review, all but one of the six counties makes the determination of capacity availability at the sketch level of review. Carroll County requires testing at the concept, preliminary plan *and* final site plan level.

In terms of enabling the developer to mitigate for capacity shortfalls by constructing improvements or paying in-lieu fees, the results depend on the facility under consideration. Each of the six counties allows for developers to mitigate or pay in-lieu of fees for roads. Other than impact fees, none of the six counties allows developers to mitigate for schools unless the developers pay for construction of the entire school.

In terms of arranging reimbursement to a developer who pays for improvements that expand capacity that benefits developers of future projects, none of the six counties has this policy. Baltimore County's policy is to provide capacity for roads, water and sewer to a developer in direct proportion that that developer's contribution to the full cost of the facility's upgrade.

In terms of specifying the extent of the denial period -- and limiting the denial period -- so that developers know if and when they can proceed with the project, only Anne Arundel and Howard have this provision. Anne Arundel County's wait period is six years and Howard's can be as long as nine (up to six years for getting a growth allocation and up to three for a school allocation).

Prior to July 2004, Howard was the only county among the 6 studied that gave developers some certainty about the length of the APFO-related denial period. Carroll, and Frederick, still do not, but Anne Arundel County has altered its APFO, effective July 2004, to give developers more certainty about when they can develop. In Carroll and Harford counties, residential projects can be delayed indefinitely due to funding shortfalls for increasing school capacity to APFO-required standards.

5. Under good planning, there is tight coordination between the planning department and the board of education, so that school-related decisions are consistent with the APFO and the comprehensive plan. Few of the counties reported having excellent communication between the planning department and the school board. One exception was Baltimore County, where Gassahn Sha, the Director of Facilities Planning for the Baltimore County Public Schools, cited a strong working relationship in which the two staffs meet monthly. On the other hand, in Queen Anne's County, one observer said the planning department and school board staff "don't like each other and don't trust the numbers they get from each other" (Wilson 2005).

6. Under good planning, there are reasonable funding options, aside from the CIP, that are available to finance needed facilities / services in designated growth areas. However,

school funding options are limited in most APFO counties to impact taxes and fees on new construction. Planners for Anne Arundel County note that the actual impact fees being charged are much lower than what consultants have recommended. Jurisdictions with property tax caps, such as Anne Arundel, have additional limitations in using tax monies for infrastructure provision. In 2003, Howard County was unsuccessful in getting state enabling legislation to pay for schools. Instead, the state allowed the county to levy a school excise tax of \$1.00 per sq. ft for new houses only. In sum, none of the six counties APFO uses a portion of its real estate transfer tax to pay for schools, even though some of each county's new enrollments result from re-sales of existing houses rather than new homes.

I.E. A Typology of North-Central Maryland County APFO Design / Implementation as of October 2005

The case studies of the six APFO counties in North-Central Maryland shows divergence in APFO design and implementation, and in the effort taken by the counties in generating funding – beyond the CIP – for infrastructure needed to support growth in PFAs. The six counties can be characterized by 1) the degree of strictness of the school APFO standards (since it is school adequacy that has caused most moratoria in growth areas); and 2) the degree to which the county uses impact fees, excise taxes or other mechanisms to augment the CIP to increase school capacity or other major, local growth-limiting factor; and c) whether the county has a defined waiting period after which a given delayed development may proceed, and the length of the waiting period.

For purposes of the typology, “strict” school APFO counties are those that either a) define acceptable enrollment thresholds at less than 105% of state-rated capacity; b) prevent relocatable classrooms from being considered as potential classrooms; and/or c) do not allow for borrowing capacity from adjacent school districts to relieve otherwise moratorium-inducing “overcrowding” in a given district. “Flexible” school APFO counties are those that either a) define acceptable, projected enrollment thresholds above 110% of state-rated capacity; b) allow relocatable classrooms to be considered as acceptable to prevent development moratorium; and c) allow for borrowing of school capacity from adjacent school districts to relieve otherwise moratorium-inducing enrollment projections.

In terms of the degree to which each of counties augments its CIP, “Resource-limiting” APFO counties are those in which infrastructure funding sources are relatively limited because of lower-than-recommended impact fees or excise taxes; lack of other taxes dedicated for schools (such as from the real estate transfer tax); and/or a property tax cap that limits available resources. “Resource-expansive” APFO counties are those in which elected officials have raised impact fees, excise taxes or other funding sources dedicated for infrastructure, and/or have implemented “pay-and-go” systems or development rights and responsibilities agreements to help pay for otherwise growth-limiting infrastructure.

In terms of waiting periods, “Indefinite” waiting period” counties are those in which the APFO allows for a development proposal to be in moratorium for an unspecified period of time. “Long” waiting period counties are those in which the waiting period is more

than 5 years after initial, APFO-induced subdivision denial. “Short” waiting period counties are those in which the waiting period is less than 5 years after initial, APFO-induced subdivision denial. “No” waiting period means that the county does not specify a waiting period and is experiencing no moratoria.

The case studies show that the “strict” school APFO counties that are resource-limiting and have indefinite or long waiting periods are much more likely to be undergoing building moratoria in October 2005 than are “flexible” school APFO counties that are resource expansive and have no waiting periods. The following list classifies the six counties into the categories based on the case studies.

Anne Arundel: Strict School APFO County; Resource-Limiting, Long Waiting Period. School capacity threshold of 100% of state-rated capacity, no school redistricting being practiced, relocatables not counted toward capacity determination; property tax revenue cap tied to cost-of-living index, very low school impact fees (4th wealthiest county in Maryland but only charges impact fee of \$3,414 for a single-family home compared to \$10,247 school excise tax for a single-family home in neighboring Charles County); waiting period of 6 years.

Baltimore: Flexible APFO School County; Resource Expansive; No Waiting Period. School capacity threshold of 115% of state-rated capacity; relocatable classrooms counted in capacity determinations, school capacity borrowed from adjacent school; no impact fees or excise taxes but use of CIP and other funds to provide needed infrastructure in growth areas; no waiting period.

Carroll: Somewhat Flexible APFO School County; Resource Limiting; Indefinite Waiting Period

“Approaching inadequate” when capacity is between 109-120% of state-rated capacity, no relocatables included in capacity determinations, no redistricting; impact fee of \$6,836 for single-family home is less than half of the fee of \$13,745 recommended by county’s consultant; indefinite waiting period.

Harford: Strict School APFO County; Resource Limiting; Indefinite Waiting Period School capacity threshold of 105% of state-rated capacity, no relocatables included in capacity determinations, limited redistricting; school impact fee of \$6,000 per single-family home charged for first time in 2005; “indefinite” waiting period classification because some school districts under moratorium, but no real “denials” because developers get pre-test on school capacity do not even submit for review.

Howard: Flexible School APFO County; Resource Limited, Short Waiting Period (once project has a Growth Allocation)

School capacity threshold of 115% of state-rated capacity, no relocatables included in capacity determinations, frequently redistricts; school excise tax amounting to \$5,000 to \$6,000 per house depending on size; once developer has a growth allocation can build after a 3 year wait for school allocation.

Queen Anne's: Flexible School APFO County; Resource Limited; No Waiting Period
School capacity threshold of 120% of state-rated capacity, no relocatables included in capacity determinations, no redistricting; school impact fee of \$4,730 for single family home but limited funds for needed sewer upgrade in PFAs; no waiting period but County has had growth cap of 400 building permits per year in past few years.

More detail on the counties' APFO design and implementation is contained in the case studies.

I.F. Conclusions from the Case Studies

The case studies of the APFO counties, and analyses of how their implementation addresses selected smart growth principles, suggest a number of challenges for APFOs to be applied in accordance with Maryland planning policy and smart growth. The following are seven (7) challenges that have been identified.

1. The first challenge is that APFOs are designed, implemented and altered in a political environment. Sometimes, this means that APFOs become the controlling land use tool in a given jurisdiction, an outcome that can sometimes derail smart growth objectives. While the above can be problematic, the difficult issue is whether there is any other land use decision making process that is preferable (or politically feasible) in Maryland.
2. The second challenge of facilitating smart growth with APFO implementation is in raising sufficient revenue to fund the provision of facilities and services in areas designated for growth under the counties' comprehensive plans.

In some ways, the financial situation in Maryland resembles the problem that has faced local governments under Florida's statewide "concurrency" requirement since its inception in the mid-1980s. As reported by Nicholas and Steiner (2000), the Florida Legislature has shifted responsibility for funding growth to the local level, and this has reportedly contributed to urban sprawl as developers seek out developable areas with excess infrastructure capacity. Pelham (2001) argues that the State of Florida must support its land use policies "with commensurate taxing and spending priorities which do not subsidize and encourage sprawl". Maryland's case is somewhat different in that, under Maryland Smart Growth, state funds for water, sewer, roads, housing and economic development are directed to Smart Growth and Priority Funding Areas.

However, counties such as Anne Arundel and Howard, with limited APFO waiting periods, have raised the stakes. These two counties are providing developers with "predictability" by betting that sufficient revenues will be raised to provide up-to-standard road and school capacities by the time delays / moratoria automatically end. However, what happens if sufficient revenues are not raised, and capacity is not at the legislated levels of service? One possibility is that moratoria will be declared under an "emergency" situation until a new funding plan (i.e. higher taxes and/or fees) is devised. Developers will rightfully feel betrayed if moratoria are extended. Another possibility is

that capacity standards would need to be lowered to keep promises to developers and deal with infrastructure funding shortfalls. A third option is that taxes and/or impact fees would need to be raised. Still another option is for the comprehensive plan and zoning to be changed to reduce allowable density. Only time will tell whether the gambles have worked.

3. A related APFO / smart growth challenge is determining how to raise funding for infrastructure capacity upgrades in a fair and progressive way. Impact fees and taxes in the six studied counties are ultimately paid only by purchasers of new housing. However, the fairness issue, along with the capability of raising more revenue, is why Howard County officials were more interested in getting state approval for an increase in the real property transfer tax than an excise tax charged to new home sales only. More research and discussion is needed at the local and state level on the sources of school enrollment increases and the most effective and equitable ways of taxing residents to pay for the needed school improvements.

Among the options that deserve further study is having large commercial or industrial developments enter in partnerships with local government to help build schools, under the rationale that additional school space is needed for children of the new employees. Another alternative is to have such firms pay a graduate school impact fee, dependent upon size.

4. An important and volatile issue in school APFO implementation is that of using school redistricting to prevent building moratoria caused by school overcapacity. Redistricting to prevent building moratoria caused by school overcapacity appeases developers but angers parents. County officials are left with the choices of a) redistricting almost annual; b) responding to parents' complaints and maintaining moratoria; c) raising taxes / fees sufficiently to pay for new schools; and/or d) loosening capacity standards.

One of the smart principles discussed herein, "make development decisions predictable . . ." could be used by parents who say that they chose to buy a home in a particular subdivision because of the schools' quality. This attitude was criticized by Jane Schuchardt, a Howard County school board member, who stated at a March 1998 redistricting hearing: "I get tired of hearing complaints from parents who say, 'Well, my real estate agent told me I would be in such-and-such a school district. I hate to see the unprofessionalism of agents who say things like that. They know how much things can change" (as quoted in Texeira 1998).

Howard County has resorted to redistricting in recent years to deal with capacity imbalances, while Anne Arundel County officials have steadfastly avoided redistricting in the past several years even though there are several thousand empty school seats. By refusing to redistrict, and thereby having building moratoria in 35 percent of its elementary school district and nearly 42 percent of its high school districts, Anne Arundel

County officials have let parents' fear of school change become a determining factor in the county's growth management.

5. A fifth challenge is improving local databases, analytical methodology, forecasting, and capital facilities planning and funding to better assist local officials to balance new growth with needed infrastructure (Tustian 2004). Part of the issue here is the state of the art of modeling and forecasting. Donnelly (2003) has pointed out a number of factors that will be impacting school capacity, including the "No Child Left Behind Act" and the growth of magnet and charter schools. In addition, the Maryland legislature has required that elementary schools provide all-day kindergarten by the year 2007.

However, accepting the fact of uncertainty, one would hope that APFO methodologies are not purposefully manipulated in order to constrain growth when capacity is actually available, or to approve developments that are actually projected to result in facility overload. Evidence discussed above suggests the former frequently takes place in Maryland. The latter instance was the case in Washington State, where a report resulting from a whistle-blowers' complaint found that the county was using incorrect assumptions and methodology that allowed development to proceed even though road congestion would be beyond county standards (Pyrne 2003).

6. A sixth challenge is educating the public on the fiscal and environmental consequences of alternative APFO standards. For example, what is the fiscal and environmental cost of widening a road compared to the opportunity cost of drivers waiting a few more seconds at an intersection?

7. A seventh challenge is administering a county APFO when the municipalities in the county do not have their own APFOs. On one hand, some key informants say this encourages growth in municipalities, consistent with Smart Growth. On the other hand, the inconsistencies in APFO implementation put strains on county infrastructure and can hamper growth within the county's own PFAs.

In closing, it is worth noting that, in its 1999 annual report, the Maryland Economic Growth, Resource Protection and Planning Commission had a number of recommendations regarding APFOs. One was creation of a state infrastructure financing program for growth areas that would be used for infrastructure improvement in PFAs. Some recommended features of the fund were that all projects funded, including schools, must be within a PFA and be identified in the local government's CIP; and that a local match would be required. Specific priority from the fund would be given to projects that a) remove APFO restrictions or other moratoria that stop or retard development in PFAs; and b) involve the renovation or rehabilitation of existing infrastructure. Furthermore, two special categories of the fund infrastructure fund were to be the following:

- 1.0% of State monies allocated for fund each year set aside for a public education campaign focused on cost of sprawl, the need to provide adequate facilities in growth areas, and benefits of Smart Growth; and

- a special fund to assist with improvements need to meet APFO requirements related to State facilities, which would be a required element of the Consolidated Transportation Program. The fund would be used to “reward jurisdictions for measurable achievements to control sprawl and encourage Smart Growth”.

Among the other highly-ranked recommendations of the Commission’s workgroup were the following.

- Broad-base tax resources (property, sales or income) should provide the fiscal resources necessary to fund adequate public facilities in growth areas. The state needs to diversify broad-base revenue sources available to local governments to reduce dependence on the property tax.
- The Interagency Committee for School Construction (IAC) should increase its square footage funding allowance for the renovation of school facilities located in, or serving students residing in, PFAs.
- A coordinated plan should be prepared, detailing State and local actions necessary for the provision of adequate infrastructure.

Another Commission recommendation would have amended APFO enabling legislation to add the following local governmental powers, specifically to a) establish Special Tax Districts or TIF districts to raise funds for needed facilities; and b) establish other mechanisms, such as infrastructure funding “banking” programs, that accumulate developer contributions to be used to fund needed improvements. The Commission also recommended that Article 66-B be amended to clarify that local governments would have the following responsibilities:

- establishing a limit on length of an APFO-based moratorium or delay on a development proposal in a PFA;
- waiving APFO requirements on certain infill or revitalization projects within PFAs; and
- every 2 years, preparing and publishing a report identifying facilities within PFAs that do not meet local APFO standards, and any improvements to those facilities that have been scheduled / proposed in the CIP.

In its 1999 report the Commission concluded the following:

APFOs are an important tool for ensuring that the necessary public facilities exist in growth areas. Nevertheless, without alternative financing structures to address facility needs in those areas, APFOs can push development away from the very locations where growth is most appropriate. . . Therefore, enabling legislation should be broadened, or at least clarified, so that local governments

can adopt other techniques which would address the need for additional infrastructure funding sources.

Finally, it is worth repeating that APFOs should be one of tools – not the primary tool -- used by a jurisdiction to guide growth in a way that is consistent with its comprehensive plan. The underlying assumption is that growth itself is not the problem, but growth's location, pattern and quality. If areas are designated for growth in the comprehensive plan, it is the jurisdiction's responsibility to ensure that new development and revitalization in those areas is served with adequate infrastructure and facilities. While APFOs have often resulted in slowing growth to maintain level of service standards, when sufficiently funded they can also be used to guide development consistent with smart growth principles. Doing the latter will take political will, public discussion of what "adequate" means for a given service or facility and how those standards can be achieved (particularly for transportation), sophisticated forecasting and modeling, and thoughtful financing that incorporates social equity concerns.

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II. Case Studies

II.A. Anne Arundel County

Anne Arundel County (population of 489,656 in the year 2000) adopted its APFO in 1978, following years of rapid growth in the late 1960s and early 1970s. The County's population increased by 44.0% in the 1960s, much higher than the overall State growth rate of 26.5% during the same decade. In 1974, county voters elected a new slate of county council members who pledged to slow growth, and the county hired national consultants for advice on growth management. The outcomes of the consultants' study were revisions to the County Development Plan and initiation of an APFO (Canelli 2004). Traffic congestion was more of a driving force for the APFO than schools, since the county had been able to implement a school expansion plan that was greatly assisted with state funding for new school construction in the 1970s.

Anne Arundel County's APFO encompasses schools, roads, water, sewerage, stormwater drainage and water for fire suppression. Testing for adequacy is done at the sketch plan and the final subdivision approval stages. As County Planning Director Joe Rutter explains, testing adequacy at the sketch plan level provides predictability to the applicant.

Inadequate sewer capacity area was the basis for widespread building moratoria in the 1980s. Sewer treatment capacity was increased, and by mid 2005 there were no sewer- (or water-) based moratoria in the county (Rutter 2005). By the 1980s inadequate school capacity had become the bases for an ever-increasing number of moratoria in several parts of the county. The County's February 2005 School Utilization Chart showed that 40 of the county's 77 elementary school districts were closed to development, as were four of its 12 high school districts (Anne Arundel County Board of Education Website 2005). Nearly 70% of the county's growth area was off limits for new subdivision review by Spring 2005 because of inadequate capacity at the high school level (Rutter 2005).

Because schools and roads have been the APFO components over which there has been contention, the following is a discussion of focuses on those two facility categories.

Schools

Anne Arundel County's current school APFO standards do not apply to a proposed subdivision developed exclusively for nonresidential uses, or housing restricted to the elderly. No exceptions are given to affordable housing projects or to developments in most Priority Funding Areas. However, Anne Arundel County has exempted new residential projects from its APFO school capacity test in two locations: the Parole Town Center and Odenton Growth Management Areas. None of the other Maryland counties with APFOs relax school standards to facilitate development approval in existing communities and targeted growth areas.

To determine school capacity adequacy, each year the County Board of Education projects school enrollment in each elementary, middle and high school and compares that

projected enrollment with available capacity. The available capacity analysis is estimated for three school years ahead. The board then designates each public elementary, middle and high school as either “open” or “closed”, depending on whether the projected enrollment is under or over 100 percent of county school board-rated capacity (Anne Arundel County Code, § 2.409-420). One building industry representative interviewed for this study described this process as “giving the school board our zoning rights”.

The county’s capacity standards are tighter than state standards. For example, while the state capacity standard for kindergarten is 22 pupils per teacher, the County’s Board of Education set the standard at 18 pupils per teacher in the county. Because utilization of the school board’s capacity standards would place even more schools in moratorium, the County Council declined to adopt the board’s school utilization chart in 2004. Under the 2003 amendments to the county’s APFO, that means the board must use the state-rated capacity standards in making the “open/close” designations.

Using the Board of Education’s open/closed determinations, the Anne Arundel County Office of Planning and Zoning then assesses whether or not a proposed subdivision should be approved, given the expected pupil yield rate for the area schools. Between 1991 and 1997 a developer could get a waiver from a school moratorium by paying a fee of \$3,800 for each single-family home to be constructed, in addition to a school impact fee. This provision was eliminated in November of 1997, when the county decided that no approvals for subdivisions would be approved if any of the schools in the subdivisions’ impact areas would exceed 100 percent of enrollment capacity.

The county’s impact fee structure is shown in Table AA.1, below. Both the planning officials and building industry representatives interviewed for this study assert that the County’s impact fees are too low to provide sufficient help with new school construction or improvements. One estimate is that \$700 million to \$1 billion is needed to bring the schools up to capacity (Rutter 2005).

Table AA.1. Impact Fee Schedule in Anne Arundel County, MD, Effective July 2004

Land Use Type	School Fee	Road Fee	Public Safety Fee	Total
Residential Type (per unit)				
One-family detached	\$ 3,414	\$ 868	\$ 112	\$ 4,394
One-family attached	\$ 2,157	\$ 790	\$ 86	\$ 3,033
Two family	\$ 3,030	\$ 692	\$ 107	\$ 3,829
Three or Four family	\$ 2,019	\$ 677	\$ 78	\$ 2,774
Five or more family	\$ 1,547	\$ 621	\$ 65	\$ 2,233
Mobile home	\$ 2,775	\$ 619	\$ 104	\$ 3,498
Hotel / Motel (per room)	0	\$ 1,077	\$ 37	\$ 1,114
Amusement, Recreation, Place of Assembly (per parking space)	0	\$ 176	\$ 9	\$ 185

Industrial & Warehouse (per 1,000 gross sq. ft.)	0	\$ 404	\$ 18	\$ 422
Self-storage (per 1,000 sq. ft.)	0	\$ 353	\$ 24	\$ 377
Hospital (per bed)	0	\$ 1,555	\$ 63	\$ 1,618
Nursing home (per bed)	0	\$ 295	\$ 43	\$ 338
Office space (per 1,000 sq. ft.)				
Under 100,000 sq.ft.)	0	\$ 1,806	\$ 126	\$ 1,932
Between 100,000 and 199,000 sq. ft.	0	\$ 1,459	\$ 106	\$ 1,565
200,000 sq. ft. & over	0	\$ 1,112	\$ 83	\$ 1,195
Private marinas (per berth)	0	\$ 2,301	\$ 406	\$ 2,707

Source: Anne Arundel County, MD website. 2004

The county's declaration of school moratoria since 1997 has resulted in several developer lawsuits that attempted either to dispute school enrollment figures or prove the county had "taken" the value of their properties. One developer, Winchester Homes, Inc., won the right to build new homes in 2003 because county officials acknowledged in court that had knowingly used incorrect enrollment figures as a basis for denying development approval (Anderson 2003). Largely to prevent any more lawsuits, the County amended the APFO in 2003 to stipulate that no school district can be under moratorium for more than six years. Accordingly, a developer eventually will be able to proceed with a project after the six-year waiting period. This change to the APFO will require the county to raise sufficient funds to build new schools or expand existing schools.

While it would appear that the new rule will provide developers with more predictability, this is only the case if the financing materializes. Local elected officials will soon be faced with tough choices of raising property and/or impact fees, relaxing school capacity standards, or conducting a significant school redistricting. Redistricting would certainly be a rational policy choice from a developer's standpoint, given that the county has an estimated 10,000 empty school seats (Marselas 2004). However, the County has been responsive to parents' consistent resistance to any proposed redistricting.

Anne Arundel County's impact fees are relatively low, especially considering the County is the fourth wealthiest in Maryland according to per capita income tabulations by the Maryland Association of Counties (de Vise 2005). According to data from the Maryland, Virginia and District of Columbia teachers' unions, Anne Arundel County's pays its entry-level teachers less than every other school system in the Washington / Baltimore region. A major part of the reason for this is a revenue cap passed by the County's voters in 1992 that prevents the County's total property tax revenues from rising more than the annual inflation rate, up to a maximum of 4.5% each year. Linton Pumphrey, a consulting engineer with John Harms Associates, believes that in elimination of the revenue cap is needed in order to order to fund necessary increases in school capacity (Pumphrey 2005).

Roads

In terms of road capacity, the Anne Arundel County ordinance requires that access roads be capable of accommodating a minimum of “D” level of service as defined by the Highway Capacity Manual published by the Transportation Research Board. There are lower LOS standards for roads in the county’s town centers, where level “E” is allowed.

The county uses a Critical Lane test and a road link analysis. Normally the test would extend to the second intersection from the entrance to the proposed development. However, the county has a series of peninsulas, and the test goes out to the third intersection at peninsulas instead of to the second.

Road capacity has been a less contentious component of the APFO than schools because developers are able to mitigate for any projected road congestion. In Anne Arundel County, options for mitigating for roads include not only road improvements but “other traffic-mitigating measures such as ridesharing programs, off-site parking facilities and para-transit . . .” (Anne Arundel County Code Title II, Article V, Subtitle 4, §2-415(e)(4)). Developers do not need to bring the road up to an acceptable LOS, but to mitigate the impacts of the particular project.

Perspectives of Two Additional Building Industry Professionals

As part of this study, in addition to Linton Pumphrey two other professionals in the building industry were asked for their perspectives on Ann Arundel County’s APFO. They are referred to as commentator 1 and commentator 2 herein.

Commentator 1 noted that relative to other counties, Anne Arundel County’s impact fees are not as severe nor are they related to the sale value of the county’s homes. He says developers would be willing to pay a higher impact fee if doing so would open up more schools. In his view, the county has not realized the power of the development industry to generate revenues to service new development. He adds that a “pay-and-go” system such as that implemented in Charles County would work “in a mechanical way” in Anne Arundel but doubted that it would be politically acceptable, in line with his view that shortages of funding for Anne Arundel County schools “is a political thing”.

Commentator 1 believes that Anne Arundel County has a dual personality. On the one hand, it is a bedroom suburb of Washington with expensive homes. But it is also a blue collar jurisdiction and has continuing racial issues. He said the northern part of the county is heavily developed but does not have much wealth. County officials slowed growth there so that there would be no high-end development in the northern portion of the county that would attract upper income blacks moving from Prince George’s County. To do this, he said, officials had to blanket the whole county with development restrictions based on limited school capacity. He states that development is more readily accommodated in Annapolis City than in the unincorporated area.

Commentator 1 says that racial tension is a major reason why the County Board of Education has avoided school redistricting. Annapolis High School has had excess capacity but is majority black, as is Meade High School. The Board of Education has not

redistricted in order to send students from other, crowded high schools to Annapolis High.

Commentator 1 believes the APFO standards for schools are reasonable, as one would not expect parents to want their children's education to be compromised by overcrowding. He said a number of families will give a relative's address to the school district so that they will be able to go to Broadneck High School. He said when the State Board of Education redefined what "overcrowding" was for schools, one-third of Anne Arundel County's high schools went from having capacity to having no capacity. He said that school superintendents like to overstate capacity because they get a pay bonus based on capacity and because they do not want to displease parents with a truly overcrowded school.

According to commentator 1, current application of the County's APFO is not steering development to Priority Funding Areas (PFAs). He said developers look for areas where school capacity will open up, whether that is inside or outside a PFA. When the State Board of Education released standards for reduced classroom size, he said developers who had done work in Anne Arundel County started building on the Eastern Shore instead. He said developers will build where there are no restrictions, resulting in development "that is in total contradiction to Smart Growth".

Commentator 1 asserts that feedback from APFO implementation informs the capital budgeting process in Anne Arundel County, but only for roads – not for schools. There are no "in lieu of" payments for schools allowed, but there is an opportunity to mitigate for traffic. For schools, the only alternative is to get on the 6-year waiting list.

Several years ago there used to be road clubs in Anne Arundel County, but not in recent years. Different builders would get together and come up with a funding plan for needed roads, but that has not been going on in Anne Arundel County for some time.

Commentator 1 said one reason is that developers are very competitive with one another, and that there is a tendency to be cut throat. He said that one of the road clubs, for Solly Road, failed in the late 1990s because it was comprised of large and small builders who had trouble allocating costs between them, and because the road was going through existing neighborhoods that challenged the project in the development review process.

According to commentator 1, there is a lot of tension between the County Council and the Board of Education. The APFO law puts the burden on the Board of Education to make determinations of what schools are open and which are closed. The Board falls back on the position that they are simply following guidelines from the State.

With regard to alternative sources of funding, commentator 1 identified two possibilities as special taxing districts and tax increment financing. There was a special taxing district created for Arundel Mills, as an example. He said the County has considered an increase of the real estate transfer tax to finance schools, and that while the homebuilders would like that, the Board of Realtors has opposed it.

Commentator 1 says that the building industry has a tendency to blame everyone else, but both the Board of Education and the County Council are under a lot of pressure from their constituencies. He said the building industry tends to be more of a finger pointer than a problem solver. He says they could analyze the crux of the problem and propose such strategies as a surcharge for charter schools, creating road clubs, paying higher APFO fees, and using special taxing districts.

The second building industry professional interviewed for this study identified the strength of the Anne Arundel County APFO as its recognition that some areas do have capacity problems. The problem is how those problems are addressed. In contrast to commentator 1, he said that while a higher proportion of the capital budget has gone into schools, roads have not adequately been addressed in the budget. The commentator noted that the consultant for the county advised that the fee should be higher than what it was, but that the fee stayed at the same level for several years. It was finally adjusted a couple of years ago, when the County made a 50% increase and tied it into the COLA. However, he notes that the fee increase started from a very low base.

With regard to the school budget, commentator 2 believes that the County is not utilizing the funding in the ways that it should. The county is not investing in new schools, and there is no school redistricting in the County.

Commentator 2 says that by not using a 120% capacity threshold for schools, the County makes itself ineligible for state funds for new school construction. [However, there is nothing in the “State Capacity and Space Formula Guidelines” contained in the Maryland Interagency Committee on School Construction’s *Public School Construction Program Administration Procedures Guide* (May 2005) that specifies a 120% capacity as basis for state spending on school building / expansion, and MDP’s Jim Noonan -- who serves on the Interagency Committee -- says that the State has funded schools that were well under 120% of capacity (Noonan 2005).]

Commentator 2 says that only in 2005 did the county seriously invest in roads. The investment was \$35 million this year, compared to \$10 to \$15 million in the prior ten years. He says the County can barely maintain the roads they have. He says there are three or four peninsulas in Anne Arundel County that are like long cul de sacs. If suggestions are made to widen Mountain Rd., or build a parallel road, people do not want either option.

Commentator 2 says that “no one has the fortitude to redistrict in Anne Arundel County”. He said the choices of high schools are sometimes referred to as “Harvard or jail,” reflecting the perceived gap in quality between schools at full capacity and Annapolis High School, which has historically had vacant seats.

Commentator 2 believes the County’s APFO test for road capacity is “ridiculous” because the study area for a given project could be 15 to 20 miles long, making it difficult to pass a road test. He says the county should instead identify intersections that are inadequate instead of requiring developers to undergo a “long, laborious” study.

When asked if the County's APFO standards steer development to Priority Funding Areas, commentator 2 stated: "If the County was willing to build the infrastructure I would say 'yes'". As an example he cited the Broadneck Peninsula, where the County constructed a sewer treatment plan, water system and schools. Although the buildout has been only 50% of what was planned, existing residents did not want the County to build out to the extent that was planned, mainly by opposing any road improvements.

With regard to the question of whether feedback from the APFO implementation informs the CIP, commentator 2 said he has not seen that to be the case. He believes that the county seems to be spending money on maintaining existing schools rather than expanding them or building new ones. As an example he cited the Glenn Birney Park Elementary School district that, in the late 1990s, received \$3 million in impact fee money. However, according to commentator 2 all the money was spent on maintenance rather than on expanding capacity. He added: "the school capacity numbers we get from the school board are questionable. There is no clear standard of what a school room can be used for."

Ongoing Issues in Anne Arundel County's APFO Implementation

A continuing interjurisdictional issue with Anne Arundel County's APFO is that the City of Annapolis does not have an APFO and does not test for school capacity. As a result, there have been annexations driven by the desire of developers to avoid the County's APFO.

Inadequate school capacity will continue to be the most contentious APFO issue in Anne Arundel County for the indefinite future. Funding for new schools is limited by a property tax cap and a decision by the County not to raise impact fees or initiate other mechanisms for funding schools. To avoid takings claims by developers because of prolonged school-based moratoria, the County has instituted a six-year year limit on the application of a moratorium to a given development proposal. The County appears to be counting on the school capacity being available by the end of the moratorium period, even though it appears doubtful that elected officials will generate the needed funds for that capacity expansion.

Unlike Howard County, Anne Arundel County officials have steadfastly avoided redistricting in the past several years even though there are several thousand empty school seats. By refusing to redistrict, and thereby having building moratoria in 35 percent of its elementary school districts and nearly 42 percent of its high school districts, Anne Arundel County officials have let parents' fear of school change become a determining factor in the county's growth management.

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II.B. Baltimore County

Baltimore County's APFO is best understood in the context of the county's Comprehensive Plan, a primary feature of which is the Urban-Rural Demarcation Line (URDL) established in 1967. The URDL serves as an urban growth boundary, outside of which the county does not extend water or sewer service and the zoning is from one home per 5 acres to one home per 50 acres. As a result, 90 percent of the county's population lives inside the URDL, earning the county a national reputation for farmland and environmental preservation (Wheeler and Goldberg 2005). About two-thirds of the county's land area is protected by the URDL (Keller 2005). Baltimore County uses its APFO in a way to steer growth to its town centers (Towson, Pikesville and Owings Mills) and other designated growth areas.

Baltimore is Maryland's third most populous county, with a population of 754,297 residents in the year 2000. While the county has decennial growth rates since 1960 that have been lower than the state average (with growth rates of 26.1% in the 1960s, 5.6% in both the 1970s and the 1980s, and 9.0% in the 1990s), there are significant demands on the county's infrastructure because of its large population base. The County first adopted its APFO in 1979 and ordinance has been amended over the years. In 2000, the ordinance was amended to include school capacity. The ordinance stated its purpose as to "provide a predictable planning environment for the provision of adequate infrastructure, roads, public schools, facilities and recreational space by requiring residential and nonresidential projects to pass certain tests as a condition of development approval" (*Baltimore County Code Article 32, Title 6, Section 32-6-102(b)*).

The "Legislative Intent and Purpose" section of the County's APFO states the following.

It is intended by the county that this title is adopted independently of the Baltimore County Zoning Regulations and the development regulations of the county so that, to the extent necessary for achieving its intent, purposes and requirements, this title supercedes and abrogates the rights to development that otherwise would accrue from the zoning or development regulations or other county laws.

The irony of this statement is that no other Maryland county reviewed in this study has been more flexible in implementing its APFO in a way that facilitates development in its designated growth areas.

Baltimore County's APFO requires the Office of Planning annually to create maps showing overcrowded school districts, while the County's Zoning Regulations require that "Basic Services Maps" to be prepared for sewer, water supply and transportation. The latter three service maps are intended to delineate the adequacy and availability of water supply, sewerage, and transportation services and facilities. Developments are reviewed for compliance with the APFO for water, sewerage and transportation at the

concept plan stage, and for compliance with school adequacy at the development plan review stage.

On or before January 22 of each year, the Planning Board recommends to the County Council any proposed annual revisions to the Basic Services Maps. The County Council reviews the maps with the intent of correcting any existing service deficiencies in accordance with the County Master Plan and the Capital Improvements Program. The Council has until April 30 to take action on the maps and must hold a public hearing prior to map adoption.

When a deficiency in facilities has been corrected by construction of needed facilities, the maps can be amended during the year. For roads, water and sewer service, when the correction of the deficiency has been achieved by means of private funding, the developer or developers who paid the cost of correction have a preferred claim to any increase in the reserve capacity, and these developers share in any increase in reserve capacity in proportion to the percentage of their contribution to the full cost of correction (*Baltimore County Zoning Regulations*, Section 4A02.3(E)(3)(b)).

No building permit may be issued, nor may any final subdivision approval be issued or granted, unless the Office of Planning has issued a reserve capacity use certificate. The ordinance enumerates several types of exemptions from the basic services mapping standards for water, sewer and transportation. These exemptions are for the following types of developments (*Baltimore County Zoning Regulations*, Section 4A02.4(E)(1)):

- a) any development of 3 or fewer single-family detached units on a lot of record as of November 19, 1979;
- b) any development in a Commercial Community Core or Residential Apartment (Elevator) zoning district for which a subdivision plan was finally approved, or for which a building permit application had been made, by January 21, 1980;
- c) any development in a town center or community center for which an official detailed plan was approved by the Planning Board as of the effective date of the 1979 APPO; and
- d) on-site expansion of existing hospitals and any development of a “continuing care facility”.

The following is a summary of the standards and guidelines of the Baltimore County APFO and the Zoning Regulations related directly to it.

Schools

The school component of the County's APFO applies to all residential development, except for elderly housing facilities; emergency or transitional housing facilities; sheltered housing for the handicapped or disabled; community care facilities; group child care centers or nursery schools; and minor subdivisions.

The ordinance requires the Office of Planning, in consultation with the County Board of Education, to prepare a map by September 30 each year (using the September 1 school

enrollment numbers) showing all overcrowded school districts. “Overcrowded” is defined as 115% or more of State-rated capacity. The ordinance does not allow the map to be changed before the following September 30th, even if a decrease in actual enrollments results in a district no longer being classified as overcrowded. The Office of Planning uses the map to make recommendations on specific development proposals. The APFO does not allow the County to approve a development proposal in an already overcrowded school district or in case in which the proposed project would result in a school district becoming overcrowded.

However, the Baltimore County ordinance is explicit about its intention to reduce school crowding, stating that “the county, the County Council and the county Board of Education shall annually produce and endeavor to implement a plan that will eliminate overcrowded school districts” (*Baltimore County Code Article 32, Title 6, Section 32-6-103(k)(1)*). The ordinance states that the plan should include an analysis of the several factors, including the following:

- a) capital funding for overcrowded school districts;
- b) the use of redistricting as a means of relieving school overcrowding;
- c) the use of magnet schools to relieve overcrowding;
- d) the use of modular construction to relieve overcrowding;
- e) projected overcrowding for the next five years and the effect of the overcrowding on the communities;
- f) the overall impact on the county of the overcrowding of schools, the reduction of residential construction that will result from overcrowding, and the costs associated with implementation of the adequate school facilities provision of the APFO;
- g) the feasibility of the continued use of state-rated capacity for determining overcrowded school districts; and
- h) the impact of overcrowding on the quality of education.

The above list is noteworthy because none of the other five county APFOs reviewed for this study includes references to modular construction as a means of relieving overcrowding -- other than to underscore that temporary buildings are not to be included in calculations of capacity.

Moreover, there is considerable flexibility in the ordinance to accommodate a proposed project in an overcrowded school district. The APFO allows for development approval to be granted in the following situations (*Baltimore County Code Article 32, Title 6, Sections 32-6-103(f)*):

- a) when the redevelopment of residential property does not increase the number of dwelling units from the prior development;
- b) If the capital budget contains appropriations or authorizations sufficient to fund the construction of a new school, a school addition, or a renovation that would result in the district not being overcrowded;

- c) if the school in a district adjacent to the overcrowded school district has sufficient capacity to enable the overcrowded district to fall below 115% of the state-rated capacity;
- d) if the Board of Education has approved a plan that implements, within one school year, “educationally sound” programs or initiatives that will provide adequate capacity in an overcrowded school district, including grade realignments or reassessments, schedule changes, magnet schools, special program locations or other initiatives that will effectively reduce enrollment in the overcrowded school to less than 115% of state capacity.

Baltimore County public schools include 92 elementary schools, 26 middle schools and 24 high schools. Of those school districts, Baltimore County’s *2004-5 School Adequacy Public Facilities Report* identified 14 that were overcrowded -- 10 of the 92 elementary school districts and 4 of the 24 high school districts (Baltimore County Office of Planning 2004). However, the report found that all of the 14 schools that were over 115% of state-rated capacity could be mitigated by adjacent schools or would be relieved by a capital project. Accordingly, unlike most APFO counties in Maryland there are no school-based development moratoria in Baltimore County at the present time.

Transportation

Baltimore County’s APFO specifies that building permits may not be issued unless the applicant meets the requirements of Section 320-4-405 (Street System) and Section 32-4-407 (Street Design and Construction) of the County Code, and Section 4A02 of the Baltimore County Zoning Regulations. The provision of the former sections of the code that is most relevant to the APFO is that of “additional special requirements”, in which the County is allowed to impose special requirements for: turning lanes and traffic signals as necessary “at heavily traveled intersections”; or for street design or arrangement that is necessary to minimize the total number of intersections, four-way intersections, oblique intersections, intersections on curves or large corner radii (Section 32-4-407(c)).

What is more relevant for the transportation requirements under the APFO are the guidelines in the County’s Zoning Regulations that specify how adequacy of roads is determined. Section 4A02.4D of the Zoning Regulations applies to non-industrial development where the county has determined that the capacity of arterial and arterial collector intersections is less than the capacity needed to accommodate traffic from both existing uses and from already approved but un-built development. Development will not be restricted unless there is “substantial probability” that an arterial and arterial collector intersection within the mapped areas will be rated at LOS E or F during peak hours under standards established by the 1965 *Highway Capacity Manual* published by the Highway Research Board of the Division of Engineering and Industrial Research, National Academy of Sciences National Research Council.

Section 4A02.4D provides a formula for the determination of the “critical trip number” of an intersection that is used to calculate the “reserve capacity”. The level of additional

non-industrial development in a given mapped transportation area is not allowed to result in total daily peak-hour vehicle trips equal to the reserve capacity of that map area. This calculation is based on the following assumptions:

- a) Every 100 dwelling units in housing reserved for the elderly is assumed to produce 25 peak-hour trips, while all the same number of dwelling units in non-elderly housing is assumed to generate 85 daily peak-hour trips; and
- b) Every 1,000 square feet of gross floor area of a building or a part of a building devoted principally to retail use is assumed to generate 14.70 peak-hour vehicle trips daily, while the same area of a building or part of a building devoted primarily to office use is generates 2.34 daily peak-hour vehicle trips.

The regulation calls on the County's Department of Traffic Engineering to determine number of daily peak hour trips to be generated by a building or part of building that is used neither for residential, retail or office use.

Water

The County's water supply standards and maps are intended to regulate non-industrial development in cases where there are serious deficiencies in the public water supply system, "as evidenced by County tests of water flows for a substantial sample of fire hydrants" (*Baltimore County Zoning Regulations*, Section 4A02.4(B)). The standard is that water pressure at the public fire hydrant nearest the site of the proposed development must meet standards established by the National Board of Fire Underwriters fire flow test. This standard does not apply to any development that will not be served by a public water supply system.

Sewerage

The County's sewerage APFO regulations apply only to development that will be served by a public sewerage system. The sewerage standards and maps are intended to ensure that the County's share of public sewerage capacity is capable of serving already established uses and new uses likely to be established. In determining the reserve capacity of the sewerage in a given mapping area, the regulations enumerate the following assumptions on the daily sewage output of different types of development (*Baltimore County Zoning Regulations*, Section 4A02.4(C)):

- a) Each dwelling unit with 3 or more bedrooms yields 225 gallons of sewage per day;
- b) Each dwelling unit with less than 3 bedrooms yields 200 gallons of sewage per day;
- c) Each square foot of gross floor area of a building or part of a building devoted principally to retail use yields 0.05 gallon of sewage per day; and
- d) Each square foot of of gross floor area of a building or a part of a building devoted principally to office use yields 0.09 gallons of sewage per day.

The regulation calls on the County's Department of Public Works to determine the quantity of sewage produced by a building or part of building that is used neither for residential, retail or office use.

Stormwater Management

(Counties in Maryland normally have separate regulations dealing with stormwater management. While Baltimore County's stormwater management regulations are included within its APFO, since they are similar to the state-mandated regulations of other counties this portion of the APFO will not be discussed herein.)

Recreation

Baltimore County is the only county included in this study that has a recreation component to its APFO. The ordinance distinguishes between "active" and "passive" recreation, and requires that a development include a minimum of 1000 square feet of suitable open space per dwelling unit. The first 650 square feet of open space must be provided on-site, be dedicated for "active" recreation (such as pools, tennis courts, and on-site community playgrounds), and must be provided on lots that are at least 20,000 square feet (*Baltimore County Code*, Title VI, Section 32-6-108(c)). The remaining 350 square feet of open space may be dedicated for either active or passive open space, or both. Under the ordinance the Department of Recreation and Parks can allow the applicant to pay an in-lieu of fee to the local open space revenue account instead of dedicating the remaining 350 square feet, if the department determines that the development does not contain suitable land to meet the remaining open space requirement.

If the residential development contains 20 or fewer dwelling units and is not adjacent to a county or state park, the APFO allows the applicant to pay a fee to the local open space revenue account instead of dedicating the first 650 square feet. Other types of development for which applicants are allowed to pay a fee instead of dedicating the first required 650 square feet include: commercial developments located in Community Core or Town Center Core zoning districts or in the Residential Apartment --Elevator zone; an elderly housing facility; and student dormitories housing at least 50 students. Applicants for such projects may only use the recreation in-lieu of fee option if the Department of Recreation and Parks determines that there is no suitable land to meet the open space requirements.

Assessment of the Impact of Baltimore County's APFO

Baltimore County has not experienced the kind of APFO-imposed development moratoria characteristic of many Maryland counties, because of how APFO regulations are written and because its capital spending plan and utility district focus funds on correcting for facilities deficiencies. In fact, because of the capital spending priorities the county has not imposed impact fees on new development. County Planning director Pat Keller notes that the County Council has altered the Capital Improvement Program to correct for school capacity problems. He states that the way that Baltimore County's APFO is written, there is considerable flexibility to address any infrastructure-related problems in growth areas (Keller 2005).

Since 1999 the school standards have not stopped a single development proposal, partly due to standards that allow school adequacy in an overcrowded school area to be maintained by the reserve capacity in an adjacent school district. Gassahn Sha, Director of Facilities Planning for Baltimore County Public Schools, states that while the county does not redistrict the way Howard County does, school adequacy has been maintained through financing by the County government and other flexible regulations in the APFO. Road adequacy is determined at intersections only. The standards and exemptions prevent most roads in designated growth areas from failing adequacy tests, and developers are able to pay to correct for road deficiency. As a result, the Planning Director sees no reason to change the ordinance.

References

Baltimore County Office of Planning. 2004. *2004-5 School Adequate Public Facilities Ordinance Report*. December 22.

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II.C. Carroll County

Carroll County first adopted its APFO in 1998, largely in reaction to public concerns that population growth was outpacing the government's ability to provide adequate school capacity. The county's population was estimated by the Census Bureau to be 166,159 in 2004, continuing a trend in which its growth rate in recent years has far exceeded the state's overall rate. During the 1990s the county's population increased by 22.3%, more than double the state's growth rate over that period, while from 2000 to 2004 Carroll County's population grew by 10.1%, also more than doubling the state growth rate. Among Baltimore metropolitan area jurisdictions, only Queen Anne's County (at 11.1%) grew at a faster pace in the 2000-2004 period.

Carroll County's APFO, entitled "Adequate Public Facilities and Concurrency Management," was created in 1998 in conjunction with the adoption of the County's 2000 Master Plan. The APFO is intended "to ensure that proposed or planned residential growth proceeds at a rate that will not unduly strain public facilities, including schools, roads, water and sewer facilities, and police, fire and emergency medical services" (Carroll County Code Sec. 71-1.A.). The ordinance allowed the County to establish a building permit cap in areas where adequate facilities were not available. It also stipulated that the number of residential building permit approvals was not to exceed an average of 6,000 during any 6-year period. Further, the ordinance placed a limit of 25 on the number of building permits per subdivision (or dwelling units per project) that could be issued during a given fiscal year. Building permits are to be issued on a first-come-first-served basis.

However, in the eyes of many Carroll County residents the implementation of the 1998 ordinance did little to prevent crowded classrooms and congested roads. The numerical goals (an approximate average of 1,000 residential permits per year) were continually exceeded, and development proposals were being approved even in areas where the schools were overcrowded (based on capacity standards originally set at a maximum of 120% of state rated capacity). Fast-growing Carroll County became somewhat of a Smart Growth whipping boy for former governor Parris Glendening, who threatened to cancel state-funded land conservation projects in the county because of what he regarded as irresponsible rural land use policy by county commissioners (Cho 2004).

In the 2002 local elections in Carroll County, two of the 3 County Commissioners were unseated by new commissioners promising to slow the pace of growth. In June 2003 the Board of Commissioners imposed a one-year moratorium on development approval in order to have time to establish changes to the growth management system. The revised APFO, characterized by the term "concurrency management", is profiled below.

Three-tiered Feature of Carroll County's Adequate Facilities and Concurrency Management Ordinance

Carroll County's updated APFO features a three-tiered system, in which facilities or services related to a proposed development projects are classified either as "adequate", "approaching inadequate", or "inadequate". Tests are conducted at concept review,

preliminary plan and final site plan stages. The new ordinance contains more rigorous standards than the original ordinance, particularly with regard to school capacity. Overall, the Carroll County ordinance ties development approval closely to the Capital Improvement Program. This connection is described in the 2000 Carroll County Master Plan in the following way.

By adopting the Concurrency Management Program, the CIP review is expanded to include recommendations for phasing and timing development based on Available Threshold Capacity (ATC) in public facilities, the County's ability to fund infrastructure, and the timing of the improvements in the County's CIP. The six-year time frame of the CIP will be the basis of phasing development so that facilities will not exceed the threshold capacity before a new facility is available.

No project can be approved by the Carroll County Planning and Zoning Commission if a public facility or service is either "inadequate" or "projected to be inadequate" during the current CIP, unless a "relief facility" is planned to address the inadequacy or the developer provides a mitigation strategy that is acceptable to the Commission.

The ordinance also requires the County to examine the cumulative impacts of the development pipeline in both the County and in the County's 8 incorporated municipalities. However, the law does not limit the number of building permits the county may issue for projects located within its municipalities. Furthermore, exempted from APFO requirements are commercial and industrial projects, minor residential subdivisions in the county's Agricultural District, and amendments to site plans that do not increase residential density over that already approved.

Schools

An elementary school or a high school serving a proposed project is considered "adequate" if projected enrollment is equal to or less than 109% of the state rated capacity; considered "approaching inadequacy" when projected enrollment is 110% to 119% of the State-rated capacity; and considered "inadequate" when projected enrollment exceeds 120% of the State-rated capacity. A middle school is considered "adequate" if projected enrollment is equal to or less than 109% of the functional capacity; considered "approaching inadequacy" when projected enrollment is between 110% and 119% of functional capacity; and "inadequate" when projected enrollment exceeds 120% of functional capacity.

All Maryland counties are feeling the pressure of a State mandate for full-day kindergarten, effective September 2005. The State rated capacity of elementary school classrooms will decline from 25 to 23 at the same time. The reduction in classroom size means that Carroll County will need to build 1.5 new elementary schools, according to Carroll County school officials (Hare 2004). Each new school costs the County about \$15 million. This means that local governments will face increased pressure to fund school expansions, which could divert funding needed for school repairs and renovations. The State has budgeted \$100 million annually from 2004 through 2008 for school

construction, but received over \$400 million in local government funding requests in 2004.

To assist with funds generation for schools, Carroll County charges impact fees on new development. The impact fee is earmarked for schools and parks only. In June 2005 the County received a draft impact fee analysis from the consulting firm of Tischler and Associates, that stated that the county could justify an impact fee of \$13,745 for single-family homes and \$11,510 for townhouses (Home Builders Association of Maryland website 2005). That fee is more than double the current impact fee for a single family home. Tischler and Associates had been asked by the County to review what additional services could be funded through impact fees, and responded that only senior centers and libraries -- not roads -- could appropriately be funded through such charges.

Table Carr.1: Impact Fee Rates in Carroll County, MD Effective Since July 1, 2002, by Type of Housing Unit

Type of Housing Unit	Impact Fee,
Single-family	\$6,836
Townhouse	\$7,610
Multifamily	\$2,787
Mobile home	\$3,599

As of June 2005 the Carroll County Commissioners have been unsuccessful in convincing the county's Annapolis delegation to impose a 1.0% real estate transfer tax, with which the commissioners hope to use pay capital costs associated with schools, police and fire protection, and roads (Home Builders Association of Maryland website 2005).

Roads

Carroll County's APFO defines roads serving a proposed project as "adequate" if the projected level of service (LOS) for road segments and intersections within the project's traffic impact study area are rated LOS "C" or better, according the County's Dept. of Public Works of by the State of Maryland, as applicable (Sec. 71-5.D (1)(b)). The relevant road segments and intersections are judged to be "approaching inadequacy" if rated at "D" LOS, and are considered "inadequate" if given an LOS of "E".

Most of the major roads in Carroll County -- such as routes 30, 40 and 97 -- are State roads over which the county does not have jurisdiction. According to Jim Piet from Woodhaven Building and Development, most of the road inadequacies have been outside of the county's authority. Developers have been responsible for building all the non-state roads in the county.

Fire and Emergency Medical Services

Carroll County utilizes three criteria in determining whether the fire and emergency services for a proposed development are adequate. The first criterion is that the projected total number of late and non responses is less than 15%, and the total number of non responses is less than 4.0% measured on a quarterly basis. For this criterion, there is no measure for “approaching inadequacy”, but the criterion is classified as “inadequate” if the total number of late and non-responses exceeds the levels defined above for “adequacy”.

The second criterion for adequacy of fire and emergency services for the proposed project is, using an average over the prior 12 months, whether the response time is 8 minutes or less from the time of dispatch to on-scene arrival with adequate apparatus and personnel. This criterion is considered “approaching inadequacy” if the average response time over that prior 12-month period is between 8 and 10 minutes, and considered “inadequate” if the average response time has exceeded 10 minutes.

The third criterion for adequacy of fire and emergency services is that all bridges and roads for the most direct route or an acceptable secondary route to the project are capable of supporting fire and emergency response apparatus. If such is not the case then this criterion is judged “inadequate”.

All three of the above “adequacy” criteria for fire and emergency service must be met in order for the projected to be considered “adequate” for the service. If any one of the three criteria is found to have an “inadequate” rating, then the proposed project is considered to have an “inadequacy” rating for fire and emergency medical services.

Police Services

For purposes of the Carroll County APFO, police services are evaluated on a countywide basis, not in relation to a proposed project. Police services are considered adequate countywide if the projected ratio of sworn law enforcement officers to population is 1.3 per 1,000 population. The ratio is calculated by counting all sworn law enforcement officers with law enforcement responsibility in the unincorporated municipalities and within the County, and by counting total population in both incorporated areas and the unincorporated county area. Police services are determined to be “approaching inadequate” countywide if the ratio of sworn law enforcement officers to population is between 1.2 to 1.3 per 1,000 population, and is considered “inadequate” if the ratio is less than 1.2 per 1,000 population.

Water and Sewer Services

Determination of “adequacy” for water and sewer services is conducted in relation to the specific facilities serving the geographic area encompassing a proposed development.

Water services are analyzed in relation to projected maximum day demand on the water facility. The facility is rated at “adequacy” when that projected demand is less than 85% of the total system production capacity; at “approaching inadequacy” the projected demand is equal to or greater than 85% capacity but less than 95% of the total system capacity; and at “inadequacy” when the projected demand is equal to or greater than 95% of the total system production capacity. For sewer services, the facility is at “adequacy”

if the projected annual average daily flow is less than 85% of the wastewater treatment facility design capacity; at “approaching inadequacy” when the projected flow is greater than or equal to 85% of facility design capacity but less than 95% of capacity; and at “inadequacy” when the projected annual average daily flow is greater than or equal to 95% of the wastewater treatment facility design capacity.

Overview of the Approval Process

Sponsors of a proposed development project undergo concurrency review at the concept application phase, the preliminary plat application phase, and at final plat or site plan review phase. At the concept application phase, the subdivider submits a “concept concurrency application” to the Department of Planning and Zoning (DPZ) that includes such information as the location of the project, the number and type of units and the proposed density, and the public facilities that will be impacted by the project. The DPZ then distributes the Available Threshold Capacity (ATC) form and the concept plan to the appropriate agencies for review and comment. Based on the ensuing comments, the DPZ issues a tentative determination on the adequacy of public facilities. This tentative determination does not, however, constitute a guarantee of adequacy nor is it binding on the Planning Commission. The tentative determination also expires six months after issuance unless a preliminary plan is submitted.

A preliminary concurrency application is filed by a project sponsor at the time a preliminary plan is submitted for review. The application includes the same type of information contained in the concept concurrency application, along with a traffic impact study for roads and intersections completed in accordance with guidelines contained the *Department of Public Works Design Manual, Volume I, Roads and Storm Drains*. The DPZ then distributes the Available Threshold Capacity (ATC) form and the preliminary plan for review and comment from appropriate agencies. Once the DPZ has obtained agency comments, it prepares a written report to the Planning Commission that includes a recommendation as to whether “adequacy” approval should be granted. Among the items included in the report is the DPZ’s assessment of the demand on existing and planned public facilities and services from all existing and approved development in the project’s applicable service area, including residential projects exempted from APF requirements (see above). The DPZ report also indicates what, if any, facilities or services are inadequate, and whether (and the extent to which) any facilities or services are planned in the 6-year CIP or budget that would alleviate the inadequacy.

Based on the DPZ report, the Planning and Zoning Commission can deny the preliminary plan if any public facility or service is “inadequate” or “projected to be inadequate” during the current CIP and if no relief facility is planned in the 6-year CIP to address the inadequacy and no developer-provided mitigation is accepted by the County. The Commission can also grant conditional approval to the preliminary plan if a public facility or service is inadequate but a relief facility is planned in the 6-year CIP to address the inadequacy or the developer-proposed mitigation is accepted by the County. In a situation in which a public service or facility is judged to be “approaching inadequacy” during the CIP, the Planning and Zoning Commission has the option of granting conditional approval for the project to proceed to the final plan state and of issuing a

recordation schedule and building permit reservation, subject to the building cap adopted by the Board of County Commissioners in effect at the time of application for building permits. Once a project has been released from a queue, the project will be re-tested as to the facility or services which were “inadequate” or “projected to be inadequate”.

A final concurrency application for a residential subdivision is filed by the project sponsor at the time of final plat or site plan review. This application has the same categories of information as contained in the preliminary concurrency application and is subject to the same type of review by DPZ and other appropriate agencies. The Planning and Zoning Commission will deny the final plan if a public facility or service is deemed “inadequate” or “projected to be inadequate” during the current CIP and no relief facility is planned in the 6-year CIP to address the inadequacy or no developer-proposed mitigation is accepted by the County. At the developer’s request the final plan may be placed in a queue and be re-tested on an annual basis. If a relief facility is planned in the 6-year CIP to address the inadequacy or developer-proposed mitigation is accepted by the County, the Planning and Zoning Commission can approve the final plan subject to a phasing plan for recordation or can defer the project and place the plan in a queue for retesting on an annual basis. For a project that received conditional approval and a tentative recordation schedule at the preliminary plan stage, the Planning and Zoning Commission then reviews any facility or service that was deemed “inadequate” or “approaching inadequate” at the preliminary plan stage, and has the discretion either to modify the recordation schedule and building permit reservation or to place the project in a queue. If the project had received a recordation schedule and building permit reservation at the preliminary plan stage, the Planning and Zoning Commission informs the developer whether any existing or proposed building cap would be applicable to the project.

Residential Development Database; Annual Concurrency Management Report; Recommended Changes to ATC and Adoption of a Building Cap

The DPZ has a number of responsibilities related to a) maintaining a residential data base; b) preparing an annual concurrency management report for the Board of County Commissioners; and c) making recommended changes to the Available Threshold Capacity figures. The first reporting/recommendation task of DPZ -- the preparation of a residential database to be used by the County, incorporated and municipalities and the public -- is required by Sec. 71-7.A to include the following.

1. The county’s current population and projected population growth.
2. For each school district, fire district, community planning area, incorporated municipality and other designated geographical boundary, the number of projects, lots, and residential units that are, and that are not, subject to the County’s APFO regulations.
3. For each school district, community planning area and other designated geographical boundary, a calculation of the Available Threshold Capacity, for both residential and commercial/industrial land uses, for each type of facility / services included in the APFO. This calculation of Available Threshold Capacity must include the additional capacity of

future public facilities in the CIP “for which funds may be committed within the next 6 years” (Sec. 71-7.A(2)).

4. A list of County and State road segments and intersections with a level of service of D, E, or F.

The annual concurrency management report is to be used by the Planning and Zoning Commission and by the County government in administering the APFO and in reviewing the CIP. The Planning and Zoning Commission makes comments on the annual concurrency management report, in conjunction with its recommendations on the CIP, to the Board of County Commissioners. In addition, the Commission utilizes the report to make recommendations to the Board on area or countywide building permit caps.

A second reporting/recommendation task of the DPZ is preparation of an annual concurrency management report. This report contains an extensive amount data related to the development pipeline, the facilities and services that are needed for that projected new growth, and the funding that will be required for the needed facilities and services. Included in the report are the following.

1. An examination of growth trends in the county, including building permits and use and occupancy certificates issued in the prior 6 fiscal years.
2. An inventory of all subdivisions and site plans approved by the Planning and Zoning Commission, approved lots, units and projects subject to the APFO, and building permits and use and occupancy certificates issued during the year.
3. An inventory of all units, lots and projects that are NOT subject to the APFO requirements, along with an annual average of such units/lots/projects for the last 4 fiscal years. This inventory includes off-conveyances, minor subdivisions in the Agricultural District, pre-existing lots and residential projects located in incorporated municipalities.
4. Facility capacity information for each public facility and service included in the APFO, including capacity projections for each of the 6 years in the CIP.
5. For each school, an inventory of the number and location of portables in use, site limitations for adding portables, space in the school currently under-utilized, functional capacity, state-rated capacity, and any other relevant information.
6. Student populations prepared by the Board of Education and by the County.
7. An evaluation of fire and emergency medical services with regard to late or non-responses, response times, and adequacy of roads and bridges for each volunteer fire department.

8. For each adequacy threshold adopted by the County, a calculation of remaining capacity.
9. An inventory of timing of relief facilities in the CIP to mitigate current and future inadequacies and a staff recommendation for future capital improvements and building permit caps to achieve concurrency.
10. Fiscal information related to the facilities and services covered by the APFO, including estimated revenues from new development, impact fee and other fee projections, and operating budget increases.
11. A cumulative total of all approvals and denials under the APFO.
12. Proposed changes to the boundaries of impact areas for any public facility.
13. Proposed changes to existing or adopted threshold standards.
14. An evaluation of the feasibility of a plan for increasing the adequacy threshold for police services to a projected ratio of 1.5 sworn law enforcement officers to 1,000 of total county population.
15. Proposed changes in concurrency analysis methodologies.
16. Recommended amendments to the concurrency management law, such as changes to the thresholds or to the review process.

A third type of reporting/recommendation responsibility of the Department under Carroll County's APFO is triggered whenever a facility or service approaches inadequacy, as determined by the DPZ or the government agency responsible for funding the facility or service. In such cases, the ordinance mandates the DPZ to recommend to the Board of County Commissioners: a) changes to the Available Threshold Capacity determination; and b) the adoption of a building permit cap, consistent with the regulations in the APFO.

Recent History of APFO Implementation in Carroll County

Prior to a one-year freeze on new development approval that began in June 2003, the prior Board of County Commissioners rarely imposed APFO-related building limits. Table Carr.2, below, shows the Available Threshold Capacity limits, by geographic area, for the years 1998 through 2002.

Table Carr. 2. Number of School Districts or Water Service Area Subject to Concurrency Management Limits on Residential Building Permits, 1998 to 2002, and 2004: Carroll County, MD

Year	# of Districts or Areas w/ limits	Comments on Limits Imposed on Building Permits Allowed Within the 6-Year CIP Timeframe
1998	5 school districts	No moratoria: each of 5 school districts able to have at least

		50 new units / year for each year in 6-yr CIP
1999	3 school districts	No moratoria: each of 3 school districts able to have at least 75 new units /year for each year in 6-year CIP
2000	2 school districts; 1 water district	No moratoria in school districts, and limits only for FY '01. 3-yr. moratorium in Freedom Water Service Area
2001	1 school district; 1 water district	No moratorium in school district; 50-unit limit in each of 6 yrs. 3-yr. moratorium in Freedom Water Service Area
2002	2 school districts 1 water district	1 school with 3-yr. moratorium, another with 2-yr. moratorium 6-yr. moratorium in Freedom Water Service Area
2004	10 school districts 1 water district	6-yr. moratoria on building permits in 10 school districts 6-yr. moratorium in Freedom Water Service Area

Table Carr. 2 indicates the dramatic change in 2004 in the use of the APFO to restrict residential building in Carroll County. From 1998 through 2002, moratoria on issuance of new building permits had been imposed in only two school districts and only in the year 2002. After a change in the composition of the Board of County Commissioners in late 2002 and alterations to the APFO in that year, by 2004 there were 10 school districts under 6-year moratoria.

Jim Piet of Woodhaven Building and Development states that the County has been playing “catch up” with regard to school funding even before the new APFO came into effect. He says the main problem with the APFO is that “it doesn’t place any responsibility on the County to cure any inadequacies.” This is the same observation made by David Bowersox, a land use attorney. While both of these commentators think that, in principle, APFOs are a good idea, they believe the ordinances are easily manipulated to become anti-growth tools. Part of the problem that the commentators identified is the lack of connection between information provided by the APFO (in terms of facilities shortfalls) and the capital budgeting process. Mr. Piet believes that what the county needs is a 10-year plan for capital facilities budgeting. Mr. Bowersox believes that there is no meaningful County staff debate over how to make use of the data base created under the new concurrency management program.

Unlike Anne Arundel and Howard Counties, Carroll County has no time limit on the development delay imposed on a developer by concurrency management. Mr. Piet notes that developers have been paying school impact fees for 15 to 20 years, and yet they are still being held up from developing because of insufficient school capacity, and are still limited to 25 units per subdivision per year. Piet does give credit to the County for being aggressive in forward funding two new schools. Even so, he thinks that the lack of sufficient school capacity has driven developers into the rural conservation zone where school capacity is still adequate.

Ongoing Issues in Carroll County's APFO

Tom Ballentine, director of governmental affairs for the Home Builders Association of Maryland, regards Carroll County as now having the most regulated land market in Maryland (Cho 2004). Stated Ballentine, “You’re going to find individual counties that have more restrictive school standards than Carroll. You’re not going to find other

counties that have more layers of restrictions and regulations on the pace of growth" (as quoted in Cho 2004). Building industry professionals critical of the county's APFO implementation agree that APFO places no responsibility on the county government to fund needed infrastructure, and that elected officials are more interested in maintaining low taxes than in using the taxing power to finance needed infrastructure.

As of June 2005 the Carroll County Commissioners have been unsuccessful in convincing the county's Annapolis delegation to impose a 1.0% real estate transfer tax, with which the commissioners hope to use pay capital costs associated with schools, police and fire protection, and roads (Home Builders Association of Maryland website 2005). Unless the County finds a way (or some say, the will) to raise needed finances, the school-based moratoria will continue until a declining population growth rate results in decreased school enrollments.

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II.D. Harford County

Harford County first adopted its APFO in 1991. The factor prompting APFO adoption was over concern over the strain on the county's infrastructure due to the rapid pace of development in the 1980s. The county's population growth rate during the 1980s was 24.8%, well above the State of Maryland growth rate of 13.4% during that decade. During the 1990s, Harford County population increased by 20.0%, nearly double the State's growth rate (of 10.8%) over the same period. APFO guidelines for schools were established in 1991, while standards for water and sewer were adopted in 1993 and for roads in 1994.

Harford County's APFO is contained in the Growth Management section of the County Code (Part 6, Article XXI "Public Facilities"). The ordinance requires the Department of Planning and Zoning to prepare an annual growth report that outlines growth trends in the county, including demographic and building permit information and projections; and analyzes the current and future capacity and utilization of schools, sewerage facilities, water facilities and roads.

The County is attempting to direct new development to an urban envelope identified in the 1977, 1988, 1996 and 2004 Land Use Plan element. The envelope encompasses an area defined by I-95 / Rte 40 and the route 24 corridor north to Bel Air and Forrest Hill. According to the County's 2004 Master Plan and Land Use Element, from 1990 to 2002 nearly 82% of all 24,262 residential building permits issued were for units inside the development envelope (<http://www.co.ha.md.us/PlanningZoning/LandUsePlan/>). However, the element does not indicate what percentage of the acreage developed during that period was inside the development envelope.

Harford County's APFO is clearly having an impact on the pace of development. According to Shelsby (2005), in mid-June 2005 nearly three-quarters of the county and most of the development envelope was closed to new development because of the APFO. Much of the recent residential building in the county has been senior housing, which is exempted from the law (see below).

Each of the facility areas covered by the County's APFO is discussed below. Discussions with Harford County planner Pete Gutwald indicated that among these facility categories, school capacity is the major one that has led to withholding of County approval of preliminary development plans.

Schools

The test for school adequacy in Harford County applies to any preliminary subdivision plan with more than five lots and any site plan for a multi-family development exceeding five units. Exempted from this review is transient housing, housing for the elderly and continuing care retirement communities (Harford County Code, Article XXI, §267-104 B.(2)(a) [2]).

For proposed subdivisions meeting the above-listed thresholds, the County examines school capacities in the relevant school attendance areas, using county-rated capacities as a base. Review of the available capacity in each elementary, middle school and high school is conducted twice per year, in June and December. The School Board makes the capacity determination based on official school enrollment figures. For County planning purposes, planning staffers make projections of how many students will be generated by a given development, based on the pupil yield ratios for different types of residential development (as outlined in the Annual Growth Report). In areas where the schools do not meet adequacy standards, development proposals are placed on a waiting list until capacity becomes available. The county's APFO specifically excludes "relocatable or portable classrooms" from determination of available school capacity.

Standards for determining whether a school's actual or projected enrollment will result in a moratorium on County approval of preliminary development plans, changed in 2003 and 2004. The changes legislated in 2003 became effective in January 2004, while those legislated in 2004 became effective in January 2005. The following table displays the changes.

Table Har. 1. Changes in Criteria Triggering School-Related Moratoria on County Approval of Preliminary Development Plans: Harford County, MD

Year Implemented	% of Projected School Enrollment vs. County-Rated Capacity Above Which County May Not Approve Preliminary Development Plans
Pre-2004	120% at any time within 2 years (for elementary) or 3 years (for middle / high schools)
2004	115% at any time within 5 years, for each type of school
2005	105% at any time within 3 years
2007 (scheduled)	115% at anytime within 5 years

According to Article XXI of the Harford County Code, if enrollment at any elementary, middle or high school exceeds 105% of state-rated capacity, or is projected to exceed 105% of that capacity within three years, then a moratorium on preliminary plan approval is triggered in that school's attendance area. This standard will be effective until June 30, 2007 when an amendment to the legislation will change the standard to current or projected enrollment greater than 115% of state-rated capacity within five years of the date of capacity determination.

The pre-2004 standards were premised on the difference between County's rated capacity (25 students per elementary classroom) and the State's, which at that time were 30 students per classroom. Accordingly, 120% of County-rated capacity equaled the State-rated capacity. The County appointed a task force in 2004 to examine appropriate standards and make recommendations. In a politically-charged environment in which some County Council members wanted to lower the adequacy standard to 100% of County-rated capacity, the ultimate decision was to lower the standard to 105% of State-

rated capacity (which was reduced to 23 in 2004) within a 3-year projection period. Because the APFO task force pointed out that restrictive standards would lead to more permit denials and push development into the hinterlands, the council decision was to revert to the 115% capacity standard in 2007. Another factor was concern that a denial of new residential projects would result in a loss of impact fees, property taxes and other revenues needed for capital improvements.

Table Har.2, below, lists the elementary, middle and high school attendance areas in Harford County, showing the years in which the APFO regulations prevented the County from approving developers' preliminary plans.

Table Har. 2. Years with Moratoria on Preliminary Plan Approval, by School Attendance Area: Harford County, MD

School, and Years in Which School was in Moratorium
Elementary -- of the 32 attendance areas, the following 9 have been under moratoria: Abingdon (1994-95 and 1997-98); Bel Air (1991); Church Creek (1995-98); Deerfield (2003); Forest Hill (1993-1995); Havre de Grace (1991); Joppatown (1997); Magnolia (1994-5); and Prospect Mill (1991).
Middle -- of the 8 schools attendance areas, the following 3 have been under moratoria: Bel Air (1991); Fallston (1994-97 and 2001-03); Southampton (1994 and 1999-2002)
High -- of the 9 schools attendance areas, the following 4 have been under moratoria: Bel Air (2002-03); C. Milton Wright (1994, 1997, 2000); Edgewood (2001); Harford Technical (1997).

Table Har. 2 indicates that such elementary school attendance area "moratoria" were most frequent from 1991 to 1998. Among the 32 elementary school attendance areas, only one has been in "moratorium" since 1998. Conversely, for the four high school areas that have been under moratoria for preliminary plan approval, only one was under a moratorium prior to the year 1997. Three of those high schools have been under moratorium for at least one year since 2000.

To help generate construction funds for the currently-under-construction Patterson Mill Middle and High School construction and renovation, the County began charging an impact fee, effective July 1, 2005, of \$6,000 for a new single-family home, \$4,200 on a townhouse or duplex, and \$1,200 for mobile homes. The legislation calls for the impact fee to rise, in 2007, to \$8,269 for a single-family detached unit, to \$5,720 for town homes and duplexes, and to \$1,637 for a mobile home.

Charging impact fees to help fund additional school capacity is not the only strategy available to the county to address school congestion. According to Mitchell (2004) the County has, on occasion, resorted to school redistricting to ease crowded school

conditions in a particular school district, but has not done a county-wide school redistricting since the 1970s. However, with the planned opening of a 1,600-student Patterson Mill middle and high school near Bel Air in 2007, the Harford County Board of Education has begun discussing a countywide redistricting plan. With the additional Patterson Mill school and hundreds of additional seats to be added to a newly-renovated North Harford High School, the school board is capable of reducing school overcrowding and thereby enabling developers to formally propose new projects.

According to Pete Gutwald, Chief of Harford County's Comprehensive Planning Division, it is not possible to determine the number of developments that have been prevented due to a lack of adequate school capacity. The reason for this is that property owners / land developers do not submit development plan applications in school attendance areas that they know are closed for plan approvals.

Sanitary Sewer

According to Harford County's APFO, facilities to serve a proposed development -- including collector systems, interceptors, pumping stations and force mains, and treatment plans -- must have sufficient capacity to accommodate ultimate and/or expected peak gravity flows and/or minimum daily loadings from the proposed development and other existing and approved-but-not-yet-constructed development within the relevant drainage area. The sewerage system will be also be considered adequate if the County has committed funds necessary to upgrade sewerage facilities to accommodate the proposed development, or if the developer executes an agreement with the county to pay for the required improvement to the system.

As with the school adequacy measures, the test for sewerage adequacy in the County applies to any preliminary subdivision plan with more than five lots and any site plan for a multi-family development exceeding five units. However, the sewerage adequacy test also applies to all non-residential development. Any development conducted in accordance with a preliminary plan approved prior to passage of the 1993 bill (requiring sewerage adequacy) is grandfathered, unless there was a request by the subdivider after that time to amend the preliminary plan. However, even if a development is grandfathered, execution of public works utility agreements for the development is subject to the availability of capacity in the sewerage system at the time of application for the public works utility agreements.

Water

A County water system or community water system is considered adequate in Harford County if, taking into consideration the demands on the system generated by current and approved-but-not-yet-constructed development: a) the distribution system is capable of providing the required pressures and flows during the maximum daily demand to the proposed development and the minimum required pressures for fire flows, as established in the county's water and sewer design guidelines and plumbing code; b) the booster stations and/or transmission mains in the service area have sufficient available capacity to provide maximum day demand and the minimum day demand and minimum required pressure for fire flow to the proposed development; c) the storage tanks in the service

area have sufficient available capacity to provide peak hour demand in addition to fire flow to the proposed development; and d) the source and treatment facilities in the service area have sufficient available capacity to provide maximum daily day demand to the proposed development.

The water system will be also be considered adequate under Harford County's APFO if the County has committed funds necessary to upgrade water facilities to accommodate the proposed development, or if the developer executes an agreement with the county to pay for required improvements to the system. As with the sewerage adequacy measures, the test for water adequacy in the County applies to any preliminary subdivision plan with more than five lots, any site plan for a multi-family development exceeding five units, and all non-residential development. Any development conducted in accordance with a preliminary plan approved prior to passage of the 1993 bill (requiring water adequacy) is grandfathered, unless there was a request by the subdivider after that time to amend the preliminary plan. However, even if a development is grandfathered, execution of public works utility agreements for the development is subject to the availability of capacity in the water system at the time of application for the public works utility agreements.

Roads

Tests for road adequacy are required for any residential or non-residential development that generates more than 249 trips per day, based on formulae contained in the Institute of Transportation Engineers Trip Generation Manual (current edition). Subdividers of proposed developments meeting or exceeding that threshold must prepare a traffic impact analysis (TIA) study using County TIA guidelines to determine the LOS of road intersections within the relevant study area (defined below).

Standards for road intersections are different for projects proposed inside the County's development envelope from those that are outside envelope. Inside the envelope, the test considers the area encompassed by "...the existing county and state roads in all directions from each point of entrance to the proposed development through the intersection with the first arterial roadway to the next intersecting collector or higher functional classification road as defined by the Harford County Transportation Plan" (Harford County Code, Article XXI, §267-104 B.(2)(d) [3]). The required LOS inside the development envelope is "D" (as defined by the Highway Capacity Manual) or higher. If the existing LOS at an impacted intersection is below this level (i.e. is "E" or lower inside the development envelope) then the developer is required to mitigate only the portion of trips that will be generated by the proposed development.

Outside the County's development envelope, the required LOS is "C" or higher, for existing county and state roads in all directions from each point of entrance of the site to the first intersection of a major collector or higher functional classification road as defined by the Harford County Transportation Plan. If the existing LOS at an impacted intersection is below this level (i.e. is "D" or lower outside the development envelope) then the developer is required to mitigate only the portion of trips that will be generated by the proposed development.

The Harford County APFO limits a study area for roads to either the encompassed areas described above, or to an area two miles in all directions from the entrance to the development, whichever is less. The study areas for road adequacy determination is expanded, however, for developments that generate more than 1,500 trips per day. Non-residential projects located with the Rte. 40 Community Revitalization District that have their primary access directly onto U.S. Route 40 and do not generate more than 1,500 trips per day, are not required to submit a traffic impact analysis.

Whether the proposed development is inside or outside the development envelope, if a tested intersection is already below the minimum standard, then the developer must provide / fund improvements that will maintain the existing LOS. In situations where subdivider are unable to construct road improvements, they are required to deposit 125% of necessary funds for the improvements into an escrow account with the County. According to the County's APFO ordinance, only road projects with 100% of costs allocated in the County's current year CIP or the State's current year consolidated transportation program, may be utilized in the traffic analysis.

Observations from Building Industry Professionals

Frank Hertsch, a consulting engineer with Morris Ritchie Associates, says that the realities of local politics often thwart the Maryland Smart Growth goal of maximizing the utilization of infrastructure. He states that while APFOs purport to require growth to wait for adequate infrastructure, the conveniently-ignored fact is that they do not motivate or generate infrastructure. APFOs end up being a manifestation of "no growth" sentiment. Hertsch asserts that the Board of Education does not care if a school is in moratorium, because it responds to the PTA and parent concerns about school capacity. Counties like Harford and Carroll take a school-by-school approach to determining adequacy, rather than considering adjacent school districts to balance school enrollments (the way Baltimore County does).

Hertsch sees a contradiction between the state priority of funding schools that are over capacity, and local APFO policies that won't allow development unless the schools are under capacity. Temporary classrooms are ignored by nearly all Maryland county APFOs as contributing to capacity. By cutting off development, he says, the Harford County loses the impact fees, property taxes, and other fees and taxes that could produce funding to address the very problem that moratorium is attempting to fix. Mr. Hertsch says that what is needed is a) a policy that does not permit moratoria in Priority Funding Areas; b) additional means of raising funds for school construction (such as real estate transfer taxes); and c) a requirement of a 10- or 20-year inventory of zoned land to meet the demand for housing.

Don Sample (Land Development Services) concurs with Hertsch that Harford County's APFO does not trigger priorities in the County's CIP. He believes that the County is not using the APFO as a signaling system for infrastructure shortfalls, but rather as a growth control tool. He believes that the 105% threshold for school capacity is simply too low. Sample also states that the County should be exploring other funding options for schools,

since he believes that most of the new students are coming from existing houses rather than new houses (that are charged the impact fee).

Ongoing Issues in Harford County APFO Implementation

Major issues that needs to be addressed in Harford County are attaining better coordination between a) the County's APFO, its Comprehensive Plan and its CIP; and b) between the Department of Planning and Zoning the Board of Education. An example of the former issue is the decision by the County Council in a few years ago to budget capital funds for renovation of North Harford High School, outside of the development envelope, instead of funding added capacity to Bel Air High School, inside the envelope. An example of the latter issue is the fact that the Dept. of Planning and Zoning is not involved in school redistricting decisions. Recently, the Board of Education decided to redistrict an area within the Edgewood school district to the Aberdeen school district, even though, at the time, Aberdeen was at over 105% of capacity and Edgewood was under capacity. The Board based its decision on what they saw as transportation efficiency considerations. Finally, as with other counties analyzed in this study, there is considerable political pressure on the County Council (to use the APFO to slow growth) and on the Board of Education (not to redistrict schools).

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II.E. Howard County

Howard County first adopted its APFO in 1992, prompted by school overcrowding and road congestion. Howard County's population growth rate during the 1980s was 58.0%, a rate higher than any other jurisdiction in the Baltimore region and over four times the State's growth rate (of 13.4%) during that decade. In the 1990s the County's population grew by 32.3%, nearly triple the State's growth rate. The county's population was estimated by the Census Bureau to be 266,738 in 2004, a figure that gave the county a relatively more modest growth rate of 7.6% since 2000, compared with the State rate of 4.9% over the four-year period.

Services included in APFO are schools and roads only. The APFO is contained in the Howard County Code, Title 16: Subdivision and Land Development Regulations, Subtitle 11, Sections 16.1100-1110. Amendments to the ordinance were made in 1995, 2000, 2001 and 2003.

Annual Housing Unit Allocations; Relationship to Howard County's APFO

Howard County's AFPO is administered in the context of the county's annual housing unit allocation chart. A housing unit allocation chart is prepared each year by the county's Department of Planning and Zoning (DPZ), with final decision on the chart made by the County Council. There are five planning areas in Howard County, with a given number of housing units allowed in each area per year (originally for an average total of 1,500 new units per year for 20 years). This number was derived from the estimate that 2,500 new units were being built in the county each year in the 1990s, and from determination that the county had about 30,000 units left under its current zoning. When the County devised its APFO in 1992 it divided 30,000 by the 20 years in the Comprehensive Plan timeframe (years 2000 to 2020), to get 1,500 units per year. The 1,500 unit figure was to be a rolling average.

Of the 1,500 housing units allocated each year, 250 must be senior units. Also, the system favors "comprehensive" (e.g. new towns, mixed-use developments) over "conventional" developments. A comprehensive development can use 50 percent of the allocation for an area (Brown 2004). In 2003 the county amended the ordinance to allow 1,750 units that year, with the extra 250 units allocated to the State Route 1 corridor (to encourage mixed-use, infill development as part of a revitalization strategy).

Table Ho.1 shows the housing unit allocations for the years 2007 to 2010. A 3-year time frame is usually required for projects to undergo subdivision and site plan review and the construction process. Thus, the chart is organized so housing unit allocations granted in any given year are for proposed build-out 3 years later. Following the table is Figure Ho.1, which shows the five planning areas and major roads in the county.

Table Ho. 1. Housing Unit Allocations for the Years 2007 to 2010, by 5 Planning Areas , Plus Senior Housing and the Route 1 Corridor: Howard County, MD

Planning Area	Housing Unit Allocations, by Year			
	2007	2008	2009	2010
Columbia	577	421	297	220
Elkridge	96	91	97	130
Ellicott City	308	330	334	348
Rural West	188	239	235	250
Southeast	176	190	240	302
Senior East	255	237	220	250
Route 1 Corridor	334	333	333	250
Total	1,934	1,841	1,756	1,750

Source: Howard County website (2005)

In mid-2005 Howard County officials were considering reducing housing allocations in the rural West by 100 per year and reallocating them. One possibility being considered is to reassign those allocations to a newly-created Affordable East area so that 100 affordable housing units can be constructed. The potential reallocation is motivated by escalating housing prices in the county, as well as by criticism that the county has received in recent years -- particularly from the Maryland Agricultural Land Preservation Foundation (MALPF), the Maryland Department of Planning from and conservation groups -- for not being sufficiently aggressive in using planning and zoning to restrict development on farmland. MALPF has urged the County to implement 50-acre zoning in the Rural West, to replace the current 4.5-acre zoning.

Howard County's APFO tests are applied at the time of initial plan submission. For major subdivisions (more than 4 lots), this means that the APFO testing is done at the sketch plan phase. For minor subdivisions (4 lots or less) the testing is done at the final plan phase, while for projects not requiring subdivision the testing is done at the site development plan phase. Exempt from the school tests are multifamily projects that cannot generate children, such as age-restricted adult housing. Nursing and residential care facilities are exempt from the schools tests as well as from housing allocations requirements.

Prior to undergoing APFO review, each proposed project needs to get a housing unit allocation based on the County's General Plan. The allocation test is done at the initial proposal stage (sketch plan). If housing unit allocations are available in the planning area where the proposed project would be located, then DPZ assigns the project tentative allocations. If there are not sufficient allocations remaining for a given project for the year the subdivider is requesting them (i.e., for the 3rd year after submission of the sketch plan), then the subdivision review process is temporarily halted until a sufficient number of allocations are available in a later year. In such cases, the project is placed on a waiting list for housing unit allocations, on a first come, first served basis.

Under the ordinance, projects can be held for up to 6 years before they get an allocation. However, after receiving an allocation the project still has to pass the test for school adequacy in order to move forward. If a project receives allocations then the subdivider can present a preliminary plan and be tested for adequacy of schools. After receiving an

allocation, if schools are not adequate in the developer's area the development can be held up for a period of up to four years. After that time, the subdivider can proceed with the project even if the schools are not built. Thus, the longest period that a subdivider need wait to begin construction is 10 years (6 for the allocation and 4 for school adequacy).

Determination of School Adequacy

School adequacy is determined for elementary districts, middle schools, and for elementary regions (6 regions, each with approximately 5 or 6 school districts). In 1999 the school board reduced the class size considered "at capacity" for planning purposes, with first and second grade classes going from 24 to 19 students. The APFO capacity threshold for schools used to be 120 percent, but this was changed in 2001 to 115 percent as a result of parents' pressure on the school board.

The county school board (an elected body) does the school capacity projections. In the last three years this process has been revised. The planning dept. provides the school board with data on subdivisions, building permits, building completion and sales of existing units. The latter is included because empty nesters often sell existing homes to families with school-aged children (i.e. neighborhoods get recycled). The school board then does the projections, prepares an "open/closed" chart, and presents it to the County Council. The open/closed chart indicates which elementary school districts, elementary school regions and middle school districts are open for new residential development and which are closed, for each year over a 10-year period.

For proposed project, if the open/closed chart indicates that the relevant elementary or middle school district, or elementary school region, is closed, then the project is temporarily delayed until all three become open. The project can move forward under any one of three scenarios: a) the County builds a new school or adds capacity to an existing school; b) the Board of Education does a redistricting that results in available school capacity for the project; or c) the project is delayed for three years, after which it may proceed even if the school adequacy standards have not been met. In summary, even in a worst case scenario, a project applicant will be able to proceed with the development after three years. As one developer commented, "builders agreed to live with this straightjacket in return for predictability" (as quoted in Burrel 2003).

Unlike Anne Arundel County, Howard County has some done school redistricting every year as new schools are built. This policy has generated consternation among many parents of school-aged children, as reported by Texeira (1998), Mui (2004), and Cho (2004a, 2004b). Redistricting has been tied to school construction; 25 schools were constructed in the 15-year period from 1989 to 2004 (Mui 2004).

Roads

Major subdivisions and site development plans are required to pass tests for road adequacy, except for the following types: a) parcel divisions or re-subdivisions that do not increase the number of lots or units allowed; b) minor subdivisions and re-subdivisions that create the potential for only one additional dwelling unit from a lost

existing on April 10, 1992; and c) agricultural preservation subdivisions. Applicants for all other projects must submit a traffic study in accordance with the *Howard County Design Manual*. The County DPZ's Development Engineering Division reviews the applicant's traffic study during the initial plan review.

If the site is located in the eastern metropolitan area of the county, then the road test must analyze the impact of the proposed development on the first major road intersection in all directions within 1.5 road miles of the property entrance. In this eastern metropolitan area, the intersections that are evaluated are those where major collector or higher classification roads meet. In the County's western rural area, the road test must analyze the impact of the proposed development on the first major road intersections in all directions within 2.0 road miles from the project entrance. In that area, the intersections that are evaluated are those where minor collector or higher classification roads meet.

In conducting the traffic analysis, the applicant must consider the following traffic as existing at the time the subdivision or land development is completed: a) traffic generated by the proposed project; b) traffic existing at the time of project application; c) "background" traffic growth; and d) traffic that will be generated by development proposals and site development proposals that have already passed adequate road facilities tests.

Road facilities that can be considered as "existing" in a proposed project's scheduled completion year include: a) road facilities already existing by the time of project application submission; b) new roads or improvements to existing roads for which sufficient funds have been included in the Howard County Capital Improvement Program or the Maryland Consolidated Transportation Program so that the facilities will be "substantially completed" before or during the scheduled completion year of the project, unless the DPZ Director, after consulting with the Director of Public Works, demonstrates that the needed facilities / improvements are not likely to be completed by that time; c) new roads/improvements that have been included in the developers' mitigation plans submitted for approval to the DPZ on a date prior to the project that is under review; d) new roads / improvements that are "scheduled to be substantially completed before or during the scheduled completion year of the proposed project"; and e) the mitigation proposed by the developer (Howard County Code, Title 16, Subtitle II, §16.1101(d)).

To be considered adequate, the major intersections must function at a level of service (LOS) "D" or above for County roads, and at an LOS of "E" or above for State roads. If the measured LOS is below the required level, the applicant must mitigate for the additional traffic generated by the project. Examples of mitigation are adding a turn lane, making an in-lieu payment to the County for the needed improvement(s), or reducing the scope of the project so that less traffic is generated. In the event that multiple projects are attempting to mitigate a particular road facility, the APSO allows the DPZ Director (after consultation with the Director of Public Works) to apportion the mitigation requirements among the various developers. When this type of mitigation is used, The DPZ director assigns each of the development projects its prorated share of the construction costs.

Howard County's APFO requirements for roads do not appear to be stringent. A developer is required to mitigate for roads so the level of service of roads in that development's impact areas is "equal to the level of service if the project had not been built, but not more than the minimum level of service" (Howard County Code, Title 16, Subtitle II, §16.1101(f)(2)). Also, in the event that the mitigation to an intersection would require the construction of "improvements of interchanges or grade-separated intersections or improvements to the through lanes of intermediate arterials and higher classified roads", the mitigation required to pass the test for road adequacy is limited to those improvements that increase the capacity of the intersection "to the fullest extent possible without constructing such improvements" (Howard County Code, Title 16, Subtitle II, §16.1101(f)(3)). Since residential projects must go through allocations and a schools test, the County's relatively lenient adequacy requirement for roads means that the APFO, overall, favors commercial development. As noted by Whoriskey (2004), jurisdictions in the Washington/Baltimore area strive to attract jobs more than housing, because commercial/office/industrial uses provide more in tax revenue than they require in expenditures for facilities and services (especially schools).

Ongoing Issues with Howard County's APFO

Development proposals are never really "denied" for lack of facilities in Howard County, and there are no moratoria. Instead, development proposals are put on hold, with a waiting period than can be as long as 9 years (6 years for the growth allocation and the end of three years for the schools test once the allocation is given). Projects must either wait for school redistricting, the construction of a new school, or the end of the three-year waiting period for school capacity improvements. So a residential developer may proceed even without passing the school adequacy test in the fourth year after receiving an allocation. Even in the worst case scenario, (s)he will be able to proceed with the development. As one developer commented, "builders agreed to live with this straightjacket in return for predictability" (as quoted in Burrel 2003).

Developers of non-residential projects are not affected by the housing allocation chart process, and may proceed with development once any road mitigation requirements are met. As described above, these requirements are not particularly onerous.

An important and volatile issue in school APFO implementation is that of using school redistricting to prevent building moratoria caused by school overcapacity. Parents opposed to redistricting frequently assert that they chose to buy a home in a particular subdivision because of the schools' quality. This attitude was criticized by Jane Schuchardt, a Howard County school board member, who stated at a March 1998 redistricting hearing: "I get tired of hearing complaints from parents who say, 'Well, my real estate agent told me I would be in such-and-such a school district. I hate to see the unprofessionalism of agents who say things like that. They know how much things can change" (as quoted in Texeira 1998).

As in other Maryland counties, developers can mitigate for road congestion in Howard County through construction or by paying in lieu of fees, but may not do so for school standards. In 2003 and 2004 there were legislative attempts in the county to get a real

estate transfer tax to pay for schools, but those attempts were unsuccessful. In 2003 the State General Assembly passed legislation specifically for Howard County, enabling the County to levy a school excise tax of \$1.00 per sq. foot *for new houses only*. The Howard County Council passed the measure, but it was not the revenue-raising measure recommended by the County's planning department. The County's planning staff had argued that a property transfer tax could have spread the burdens between existing housing sales and new housing sales, rather than placing the burden only on new housing. They asserted that the transfer tax would have cost about \$1,000 per house rather than \$5,000 to 6,000 per house with the excise tax (which includes garage and basement, even if unfinished).

Howard County's DPZ is not allowed to grant more than 300 allocations in one year in a single elementary school district if the elementary school region within which the district is located exceeds 100% of capacity. Some observers believe that this policy needs reconsideration because the school regions are not related to school redistricting decisions. The Board of Education does school redistricting on a countywide basis, not on the basis of school regions.

Unlike most Maryland counties, Howard County's APFO does not have different road LOS standards for the Rural West and other planning areas. Some critics contend that lower standards should be allowed for designated growth areas.

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II.F. Queen Anne's County

Queen Anne's County adopted an "Interim Adequate Public Facilities Ordinance" in 2001, in order to have some temporary public facilities in effect while the county updated its comprehensive plan and zoning code and established an impact fee ordinance and APFO. The interim ordinance applies to schools and roads, and to water and sewer facilities. The interim ordinance is contained in the County Code, Title 28, Sections 28-101 through 28-604.

Of the counties in Maryland that have passed APFOs, Queen Anne's County is the least populated. Its population in the year 2000 was 40,563. By way of contrast, the next least populated county with an APFO is St. Mary's (pop. 86,211). Nevertheless, the Queen Anne's population in 2000 represented a 19.5% increase since 1990, a rate nearly double the state growth rate. At the time the APFO was implemented, the county had nearly 6,000 lots pending review (Ellliot-Rossing 2005). County planners feared that market demand would outpace the county's ability to provide sufficient infrastructure.

For the past few years Queen Anne's County has limited residential building permits to 400 units per year in order to be able to manage the demand on facilities and services. According to Rodger Weese, Chairman of the Queen Anne's County Planning Commission, by mid 2005 the county now as a volume of only 200 units of development to review. The county has eight towns, only two of which had over 420 residents in the year 2000 (Centerville with 1,970 and Queenstown with 617). None of these eight towns has an APFO. However, when the County analyzes potential impact of development proposals for the unincorporated area, it includes the impact of existing and in-the-pipeline development within the towns.

The following is a summary of the key provisions of the county's interim APFO ordinance.

Projects covered under the APFO

Queen Anne's County's APFO applies to any sketch plan application, or subdivision application, for 20 or more lots or units. Faith Elliot-Rossing, County Planning Director, states that since implementation of the APFO the county has been getting a large number of 19-lot subdivisions (Elliot-Rossing 2005). However, she adds that since APFO implementation in the county there has been a larger total number of houses constructed in subdivisions of 20 or more units than there had been in smaller-sized subdivisions.

The County's APFO also applies to development and site plan applications for mixed use projects and non-residential uses that will generate 25 or more peak hour trips and that require an amendment to the County's Master Water and Sewer Plan. Public services uses are exempt from the APFO requirements.

Preparation of An Adequate Public Facilities Study

The sponsor of any proposed project that meets the above thresholds must submit an Adequate Public Facilities Study (APFS) to the County's Department of Planning and zoning (DPZ) prior to the review of their development application. The APFS must contain the following information.

1. The schools that will be attended by students living in the proposed development.
2. For each school district affected by the proposed project, the existing enrollments and the enrollments expected to be generated by all other proposed developments in the school district (as forecasted by the Queen Anne's County Board of Education) by the time of project completion. For this calculation, the County assumes that each new single-family house will generate 0.5 students (comprised of 0.24 elementary school students, 0.13 middle school students and 0.13 high school students). Apartments and condominiums are assumed to generate a total of 0.24 students.
3. A traffic impact study of the public roads owned and maintained by the State or County. Prior to preparing the traffic impact study the applicant has a meeting with staff members of the Department of Public Works to determine the parameters of the study. At a minimum, the traffic study must include information on the condition of pavement, drainage, traffic control devices, budes and culverts, existing service levels at impacted intersections, and projected service levels (including traffic to be generated by other, pending development projects). The applicant can include in the APFS a proposal for improving road conditions in order to achieve adequacy of service (as defined below).
4. An assessment of the adequacy of wastewater systems serving the proposed project and any improvements that will achieve adequacy of that service.
5. An assessment of the adequacy of water systems serving the proposed project and any improvements that will achieve adequacy of that service.

Process for Determining Adequacy of Facilities

Once (s)he determines that an APFS is complete, the Planning Director forwards the APFS to the Department of Public Works (DPW), the Board of Education and other appropriate agencies for review and comment. The APFS and the agency comments are then reviewed by a Technical Review Committee (TRC), comprised of the County Administrator and the directors of the DPW and DPZ. If the TRC determines that any essential public facility will not be adequate to serve the proposed development, then the applicant must submit a mitigation plan. The mitigation plan can include any one or more of the following: dedication of land to the county; front funding payment of impact fees; in lieu of fees for necessary public facilities improvements; participation in public/private partnerships; developer agreements; off-site improvements; and other mechanisms identified by the TRC. If approved by the Planning Commission, the

mitigation plan is contained in a binding Adequate Public Facilities Agreement between the applicant and the County.

Adequacy Standards for each of the facilities covered under Queen Anne's County's APFO are as follows. For public schools, the service area of the proposed development is considered adequate if any of the following conditions are met:

- a) the existing and projected school population, combined with the student population expected to be generated by the proposed project, is 120% or less of state-rated capacity; or
- b) the County is scheduled to initiate construction, within the first two (2) years of the adopted six-year CIP, the additional schools or improvements necessary to lower student population to below 120% of state-rated capacity; or
- c) the applicant agrees to undertake school construction or make improvements necessary to meet the adequacy standard in a) above; or
- d) the applicant agrees to fund necessary improvements in conjunction with the CIP to meet the school adequacy standard.

School capacity has been a growth-limiting facility in the county in recent years. The county has two high schools, of which one (on Kent Island) has been at overcapacity on occasion, leading the County to deny several subdivision proposals from moving forward.

The roads serving a proposed development are considered adequate if:

- a) in growth areas, the projected level of service (LOS) for intersections after buildout is "C" or above for peak hours, although the Planning Commission can allow an LOS of "D" for peak hours if the applicant submits and gets approval for a mitigation plan that will result in "an overall improvement to either road capacity or LOS in the vicinity of the proposed development" (Queen Anne's County Code, 28-502(b)(1));
- b) outside of designated growth areas, the projected road LOS for intersections affected by the project -- after the proposed project's buildout -- is "B" for peak hours;
- c) within the first two years of the six-year CIP, the County is scheduled to begin construction on roads and/or road improvements that will bring the relevant area impacted by the project in compliance with the appropriate LOS standard above;
- d) the applicant agrees to construct roads and/or road improvements that result in compliance with the relevant LOS standard; or

- e) in conjunction with the six-year CIP, the applicant agrees to contribute to financing of specific improvements that result in compliance with the relevant LOS standard.

For wastewater systems (whether a community sewage system, a multi-use system, or an individual sewage disposal system), Queen Anne's County's APFO identifies a proposed project as meeting adequacy standards under the following criteria.

- a) A community sewage system is adequate "if the lateral systems, interceptors, pumping stations, force mains and treatment plant have sufficient unreserved or uncommitted available capacity to accommodate expected or ultimate peak flows from the proposed development" (Queen Anne's County Code, section 28-502(c)(1)). However, even if the current system does not meet these criteria, the system "may" be considered adequate if improvements, expansion or construction of facilities needed to comply with the above standards are scheduled within the first four (4) years of the six-year CIP, and the applicant agrees to contribute to financing specific improvements in conjunction with the six-year CIP that will bring the project in compliance with the standards.
- b) Multi-use and on-site sewage disposal systems are considered adequate if their design is approved by appropriate State and County authorities.

For water systems, a proposed development meets adequacy standards if the community water system's source facilities, storage tanks, pumping stations and distribution systems have sufficient unreserved capacity "to provide the average flow required in addition to minimum fire flow the proposed project," or if improvements, expansion or construction of facilities needed to comply with the above standards are scheduled to be constructed and operating within the first two (2) years of the six-year CIP. The community water system "may" be considered adequate if improvements, expansion or construction of facilities needed to comply with the above standards are scheduled within the first four (4) years of the six-year CIP, and the applicant agrees to contribute to financing specific improvements in conjunction with the six-year CIP that will bring the project in compliance with the standards. Multi-use and individual water supply systems are considered adequate if the design is approved by appropriate State and County authorities.

Impact Fees in Queen Anne's County

Queen Anne's County implemented impact fees in 2003 that are applied to residential and non-residential projects. The fee is earmarked for public schools and fire protection. Table QA.1, below, lists the fees by type of residential land use.

Table QA.1. Residential Impact Fees Per Dwelling Unit by Type of Land Use, Queen Anne's County, MD

Land Use, by Type	Public Schools	Fire Protection	Total
Single family detached	\$4,730	\$1,014	\$5,744

Other residential	\$2,569	\$828	\$3,397
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Source: Queen Anne's County Code, Section 18:3-16

Impact fees for non-residential land uses are charged only for fire protection. The county's ordinance divides non-residential land uses into the categories of a) commercial/shopping; b) office; c) business park; d) light industrial; e) warehousing; and e) institutional. The office and business park uses are each divided into 4 sub-categories by square footage, with fees ranging, for example, from \$0.76 per square foot for an office building of 200,000 or more square feet, to \$1.08 per square foot for an office building of 50,000 square feet or less. The other non-residential uses have fees ranging from \$0.30 per square foot for institutional land uses to \$1.20 per square foot for a business park (Queen Anne's County Code, Section 18:3-16).

There are two noteworthy aspects of the County's impact fees. First, the Queen Anne's County Code stipulates that the impact fees apply to all new development in the county, including municipalities (Queen Anne's County Code, Section 18-3-2). Second, the impact fee structure for non-residential uses is designed to favor new development in the designated growth areas and the municipalities. The non-residential fees mentioned above are standard fees. However, the impact fees for new non-residential development *within* designated growth areas and the municipalities is 50% below those that are established in the ordinance, while non-residential development *outside* of designated growth areas and municipalities is only 25% below those listed in the ordinance (Queen Anne's County Code, Section 18:3-5D(4)).

Observations of Development Industry Professionals

Two professionals in the building industry were interviewed for their perspectives on Queen Anne County's APFO: John Wilson (Coastal South) and Mike Burlbaugh (Elm Street Development). Both contend that there is much more political interference with APFO application than there should be. Mr. Wilson believes that there should be more of an effort by public officials to educate the public on various aspects of the APFO, such as: a) what "120% of state-rated capacity" means in the context of the ebb and flow of school populations over time and the cost of school construction; and b) what the trade-off is in terms of a 5-second longer wait at an intersection versus the cost of widening the road to add a turn lane. He said there is political pressure being exerted to reduce the school capacity threshold from 120% to 100%, and to tighten the road LOS standards in designated growth areas from a "D" to a "B" requirement.

Mr. Wilson states that water and sewer has been the development-limiting APFO factor in the county rather than schools. However, the county officials have responded to anti-growth sentiment within targeted growth areas and have not approved large scale developments in which the developers (such as Elm Street Development) have offered to expand water and sewer facilities that serve a larger area than simply the proposed project. Mr. Wilson asserts that there is ambiguity in the county with regard to the dimension of water and sewer use in the County. He said that commercial land users have to purchase 150% to 200% of the water that they actually need, and that water use is

often tracked by how much has been purchased rather than how much is actually being used. While he believes that groundwater is a truly limiting factor in development in some parts of the county, the practice of looking at water purchases rather than actual use leads to an overstatement of groundwater withdrawals. He asserts that the County's APFO has not been steering development to PFAs but sending it to other areas.

When asked about the degree of coordination between the County's planning department and the school board, Mr. Wilson responded that the two departments do not trust the numbers that they get from each other.

Issues in Queen Anne's County APFO Implementation

County planners believe that their APFO is neither designed nor utilized to stop growth, but to help county services keep pace with new development. They point to the fact that the school capacity standard is 120% of State-rated capacity. While there have been proposals on the Board of Commissioners to lower the standard to 100% of State-rated capacity, Planning Director Elliot-Rossing points out that the majority of the commissioners have recognized so far that lowering the threshold would be a "stop growth" measure, and have refused thus far to consider it.

Queen Anne's County's APFO and its impact fee structure have provisions that favor development being proposed within designated growth areas and the eight municipalities. While none of the 8 municipalities in Queen Anne's County has an APFO, Elliot-Rossing sees this as a positive situation because it makes it more desirable to develop in those towns. However, according to County Planning Commission Chairman Rodger Weese, little development is taking place in the county's PFAs, partly because higher density (i.e. 3.5 unit-per-acre development is not typical of the County. Mr. Weese said that nearly all new development is taking place in the county's agricultural district. Also, political pressure in Queenstown has led to County restrictions on new development (such as that proposed by Elm Street Development) that would have augmented water and sewer service in that PFA.