

February 14, 2003

Memorandum

To: The Montgomery County Planning Board

From: Karl Moritz, Research Manager, 301-495-1312

Re: Impact of the Annual Growth Policy on the Pace of New Development

Introduction

In preparing for the "top-to-bottom" review of the Annual Growth Policy, one of the questions that Montgomery County Department of Park and Planning staff attempted to answer is: to what extent did the imposition of subdivision moratoriums impact the pace of development in Montgomery County? More specifically, how much more development would Montgomery County have now if the moratoriums had not been in place?

Staff's analysis indicates that the moratoriums did have an effect on the pace of development, that the AGP moderates both the peaks and the valleys of the development cycle, and that this effect was most pronounced from the mid-1980s to the early 1990s when growth pressures peaked and there were few options for getting an approval in a moratorium area. After the 1991 recession, the pace of growth never again reached the same heights as the 1980s, and was therefore more easily accommodated under the ceilings. The mid-to-late 1990s also saw the introduction of various "pay-and-go" provisions that allowed development to be approved in moratorium areas. Although most of the pay-and-go provisions have sunset, projects approved under the provisions continue to be completed.

Summary of Methodology

Staff approached the question, "how much more development would Montgomery County have now if the moratoriums had not been in place?" in two ways; what we called the "top-down" approach and the "bottom-up" approach. The study time frame was 1985-1999.

Estimated Changes in Residential and Non-Residential Development Due to AGP Subdivision Moratorium 1985-1999

| Residential Dev't | 1985-89 | 1985-94 | 1985-99 |
|---|------------|------------|--------------------|
| Actual completions | 44,443 | 61,856 | 80,426 |
| No AGP "Bottom-up" Approach "Top-down" Approach | 45,920 | 68,984 | 86,331 85,628 |
| in units | | | <u> </u> |
| Non-Residential Dev't (Jobs) | 1985-89 | 1985-94 | 1985-99 |
| Actual completions | 91,131 | 123,634 | 152,841 |
| No AGP "Bottom-up" Approach "Top-down" Approach | 96,304 | 139,008 | 158,222 179,872 |

in jobs

Source: M-NCPPC Research & Technology Center, Feb 2003

The "bottom-up" approach identified individual subdivision applications that were delayed by a moratorium and made assumptions about how quickly the subdivision would have been approved and completed if the moratorium had not been in place. Later in this report staff will elaborate on why this method yields a conservative estimate of the number of housing units and jobs that would have been built if the moratoriums had not been in place.

The "top-down" approach is an attempt to develop a statistical relationship between the imposition of a moratorium and the pace of development. The equation developed by Park and Planning staff uses three factors: moratorium status, number of previous approvals (size of pipeline), and an economic indicator (mortgage interest rates for housing and the Washington PMSA's wage and salary employment for jobs), to develop an equation to "explain" the pace of development, represented by completed projects.

Summary of Findings

Staff feels that this exercise highlights the fact that the moratorium is an effective constraint on the pace of growth when development pressures are strong and there are few ways around the moratorium. On the other hand, an area can be in moratorium but still maintain a relatively normal pace of growth if the pipeline of approved development going into the moratorium is large enough to continue to meet demand, if a recession or other conditions reduce demand for new development, or there are exceptions to moratorium that allowed approvals to continue.

Over the 15-year period that we studied, the "bottom-up" approach estimates that without the moratoriums, there would have been about 5,900 additional housing units and non-residential development equivalent to 5,400 jobs built in Montgomery County. For

the same period, the "top-down" approach estimates that there would have been 5,200 additional housing units and 27,000 jobs built during 1985-1999. The additional residential development would have generated between 14,700 and 16,700 additional residents and between 2,400 and 2,700 additional school students. The additional jobs would be equivalent to between 1.6 million and 8.4 million square feet of non-residential development.

However, if we focus on the first decade of AGP-imposed moratoriums, roughly 1985-1994, the "bottom-up" approach estimates that there would have been 7,100 additional housing units and 33,000 more jobs built in Montgomery County by 1994 if there had been no moratoriums imposed. The additional residential development would have generated approximately 20,200 additional residents and 3,300 additional school students. The additional jobs would be equivalent to approximately 10.3 million square feet of non-residential development.

Staff does not believe the "top-down" approach is useful for looking at time periods smaller than 15 years.

In other words, the moratoriums had a greater impact on the pace of development prior to the mid-1990s. After that, economic conditions resulted in a slower pace of development that the AGP's Policy Area Transportation Review Test could accommodate. In addition, the AGP was more able to "accommodate" the market pace of development due to AGP provisions that allowed development approvals in moratorium areas upon payment of a fee or tax.

Conclusions and Findings

The main finding of staff's analysis is that **the moratoriums imposed by the Annual Growth Policy did have an effect**. Over the fifteen-year period from 1985 to 1999, the number of new housing units in the County was 5,000 to 6,000 units less than would have been produced during the period if there had been no moratoriums in place. The reduction in the amount of non-residential development, expressed in jobs, over that same period was about 5,400, which is equivalent to 1.6 million square feet of development. This is a conservative estimate, for reasons that will be discussed later.

From 1985 to 1999, Montgomery County added 80,426 housing units and 152,841 "jobs" worth of non-residential development (47.7 million square feet of non-residential development). Without the AGP, staff estimates that figure would be approximately 86,000 housing units and between 158,200 and 179,600 jobs.

A second important finding is that the moratoriums were most effective during periods of rapid growth and strict moratoria. The pace of development in Montgomery County peaked in 1985-88, averaging 10,000 housing units and 6,000,000 square feet of non-residential space (able to accommodate a little over 20,000 jobs) per year.

There were a number of factors for this. The 1980s development boom was fed by demand created by a rapidly-expanding job base, the baby boom's great demand for housing, and a flood of cheap money into commercial real estate. Half of all of Montgomery County's office buildings were constructed in the 1980s. In addition, Montgomery County had significantly more land available for "green field" development in the 1980s than it does even today.

The pace of growth in any locality typically resembles an "S" curve. In Montgomery County the "S" curve is illustrated by a long initial period of slow growth that began to accelerate in the 1940s. The growth continued to speed up into the 1970s and, peaking in the 1980s, began moderating in early 1990s. Although there is still room for considerable additional growth in Montgomery County, the period of the most rapid absolute and percentage growth is behind us.

Staff estimates that during the peak growth years of the mid-1980s to the early 1990s, the AGP's moratoriums effectively slowed the pace of development by 7,100 housing units and 36,300 "jobs" – the equivalent of 11.3 million square feet of non-residential development. On the residential side, the 7,100 housing units that were not built, but would have been, is about 11.5 percent of what was actually built: 61,856 units. On the non-residential side, the 11.3 million square feet that was not built, but would have been, is about 31 percent of the growth that actually occurred: 36.7 million square feet.

At third finding is that when economic factors slow the pace of development, and policies are enacted to make the AGP ceilings less strict, then ceilings are less of a factor in controlling the pace of development.

By 1999, the gap between what actually happened and what would have occurred with no moratoriums narrowed to 5,900 housing units and 5,400 jobs. There are several reasons for this.

First, the early 1990s recession helped slow the pace of development to within AGP ceilings. Montgomery County did not recover all of the jobs it lost in the 1991 recession until 1995. When jobs are created, new buildings are needed to house the jobs and new houses are needed for the additional employees. Without the push provided by new jobs, the demand for new space was modest and easily accommodated by the already approved development or development that could be approved under the AGP's ceilings.

Second, the County increased staging ceilings during that period due to the programming of new roadway capacity. This was what the AGP has always done; however, during the mid-1990s AGP ceilings increased faster than the pace of non-residential construction. When the pace of development can be accommodated by existing ceilings, the ceilings do not act as a brake.

Third, in the 1994-1995 period there were changes to the Annual Growth Policy's procedures that meant that the AGP controlled the pace of growth less strictly. For

several of these changes, moderating the AGP's grip on the pace of growth was an explicit goal in reaction to the slow economic recovery. Other changes were perhaps more technical in nature but also had the effect of lifting ceilings. Among these were two procedures which permitted approvals in moratorium areas upon payment of a fee or tax: the Alternative Review Procedure for Limited Residential Development (1994), a.k.a. the "Adams Amendment," and the Alternative Review Procedure for Expedited Development Approval (1995) a.k.a. "pay-and-go." These provisions were limited in duration; pay-and-go for housing was in effect for less than 6 months, pay-and-go for non-residential development was in effect until 1999; the Adams Amendment sunset in 2001. The County has previously reviewed the utility of these procedures and this report does not revisit that analysis. Rather, staff is noting that these procedures had the effect of making approvals in moratorium areas easier.

Fourth, in 1994 changes were made to the method of setting staging ceilings. A change in how freeway congestion is counted had the effect of raising ceilings in several areas along I-270, particularly R&D Village, which went from a substantial deficit to a having capacity for thousands of jobs in new approvals. Prior to the change, the AGP divided freeways into segments, and the congestion on those segments was assigned to whatever policy area the freeway segment was located in or adjacent to. That method overstated the effect of any one policy area's development on freeway congestion. The change also represented a policy shift to discount part of the freeway traffic not generated by Montgomery County development. Another change in the procedures – changing the method of factoring in the availability and usage of transit – raised ceilings in some areas and lowered them in others, but the increases were larger than the decreases, so the overall effect was to raise ceilings somewhat.

It is staff's finding that the gap between what actually occurred and what would have occurred without moratoriums narrowed in the second half of the 1990s, and we offer several reasons why this happened. The ability of development to "catch up" suggests that the AGP's influence on the pace of development not only moderates the peaks but also the valleys in the development cycle. Our analysis was not geared toward providing strong statistical evidence as to which of the reasons had the most impact, but we believe that overall economic conditions were far and away the most important. It is clear to us that in the 1990s there was not the same upward pressure on growth ceilings that there was in the 1980s.

Findings and Housing Affordability

In the decades since the passage of the adequate public facilities ordinance, there has been concern that growth management systems that regulate the pace of residential development have the effect of restricting supply of housing. Rudimentary economic theory suggests that restricting the supply of anything puts upward pressure on its price. Park and Planning staff believe that these findings indicate that the effect of moratoriums on the pace of production of residential development is probably insufficient to have had a measurable impact on the price of market rate housing.

Since the adoption of the first AGP, interest in this subject has grown and there have been a half-dozen or so major studies of the effect of growth management systems on the price of housing. The objective studies (that is, studies completed by universities or organizations that do not have a strong position for or against growth management) have found that growth management has only modest impacts on home prices, and any price increase may simply reflect the added value provided by an orderly pace of growth. Moreover, these studies typically focus on the effect of urban growth boundaries (usually Portland's), which differ in substantive ways from adequate public facilities ordinances.

Of the factors that undercut the AGP's potential to increase housing prices, the most important are the temporary nature of the moratoriums and the fact that the areas in moratorium are a small subset of the Washington metropolitan area housing market. Housing built in an area that has been in moratorium for several years must compete price-wise with areas that have not been in moratorium.

Policy Area Profiles

Capturing the effect of the AGP on the pace of development, as distinct from the effect of other simultaneously occurring factors, is difficult for several reasons. These can be illustrated by looking at the experience of some individual policy areas, the history of moratoriums and pace of development.

On many occasions, policy areas built up a big pipeline of approved development before going into moratorium. The area then draws on this reserve of approved development during the period that the moratorium was in place. In theory, the pace of construction in a policy could continue, at least temporarily, even though approvals have been halted. So there will likely be a lag time between the imposition of a moratorium on subdivision approvals and a reduction in the pace of construction. Factors affecting the length of this lag will include the size of the pipeline when the moratorium was declared and the demand for construction in the policy area, among other factors.

Other factors that affect the pace of development that have little or nothing to do with the AGP include: demand created by local and regional job growth, the health of the national economy, interest rates, the availability of credit, the relative performance of real estate compared to other investments, perceptions that certain areas are "hot" or not, and availability of land for development.

Kensington/Wheaton is an example of an area where the pace of development has been moderate and declining over the past 15 years even though the AGP has never imposed a moratorium. Housing completions in the area averaged 300 units per year in the second half of the 1980s, a little less than 100 units per year in the first half of the 1990s, and about 50 units per year in the second half of the 1990s. Non-residential development activity averaged 550 jobs per year in the second half of the 1980s and 70 jobs per year thereafter. These figures include the Metro station policy areas of Glenmont and Wheaton CBD.

The historically modest pace of development in the area is due not to AGP limitations but to market conditions and a lack of large undeveloped parcels. The pace will likely pick up in this decade, again not due to the AGP but because of successful redevelopment efforts.

Cloverly is an example of an area where the imposition of a moratorium was followed by a reduction in the pace of development. Cloverly was in moratorium for new residential approvals from 1985 to 1994. The pace of construction, which averaged about 250 units per year in the late 1980s, fell to less than 50 units per year in the 1990s. The moratorium was lifted in 1995 (briefly re-imposed in 1996) but the pace of construction has remained at around 50 units per year. Cloverly also had a moratorium on jobs approvals from 1989 to 1994; jobs construction during the moratorium was zero but increased slightly to an average of 120 jobs per year after the moratorium was lifted.

Clarksburg is an example of an area that has never been out of moratorium, but subdivisions approvals have been substantial. Clarksburg currently has the County's largest housing pipeline at over 9,100 units. The Clarksburg Town Center was approved prior to the creation of the Clarksburg Policy Area in 1995; approvals since then have either provided the transportation infrastructure needed for their development or used the AGP's "alternative review procedures" when they were available. Developer-funded infrastructure in Clarksburg is expected to bring the area out of moratorium; these transportation improvements are significant and would not have been required without the Annual Growth Policy.

The Fairland/White Oak area has been in moratorium since 1983 for housing and 1986 for jobs. Housing completions, which average 1,400 units per year in the second half of the 1980s, fell to about 250 per year in the first half of the 1990s and to about 100 units per year during the second half of the decade. The policy area saw several housing approvals during the late-80s/early-90s period under the AGP's Special Ceiling Allocation for Affordable Housing, resulting in that area's becoming ineligible for that procedure. An approval window was briefly opened when "pay-and-go" was available for housing approvals for approximately 4 months in 1996. Fairland/White Oak was one of the areas where "pay-and-go" for housing was used the most. Recent housing approvals have been limited to projects that were grandfathered or projects with very limited transportation impact, such as certain senior housing projects.

On the jobs side in Fairland/White Oak, non-residential completions averaged 2,000 jobs per year in the second half of the 1980s, dropping to 1,300 per year in the early 1990s and to about 1,000 jobs per year in the late 1990s. The continued non-residential construction in Fairland/White Oak during the moratorium was primarily due to a large pipeline of approved non-residential development initially approved in the early 1980s.

Montgomery Village/Airpark is an example of an area where growth was slowing even before the moratorium was imposed, and slowed to near zero afterwards. The current housing moratorium went into effect in 1995. Residential completions, which

averaged 700 units per year in the late 1980s, fell to an average of 300 per year before the moratorium went into effect and to under 100 per year after. Residential completions have been near zero for the past two years. On the jobs side, non-residential completions were averaging almost 1,000 jobs per year in the late 1980s. A moratorium on new approvals was imposed in 1988; two years later, completions fell to an average of 200 jobs per year and then fell further to 100 jobs per year by the end of the 1990s.

North Bethesda appears to be an example of a close relationship between moratorium status and pace of construction for both housing and non-residential development. Residential completions were averaging 300 per year in the late 1980s; a moratorium on approvals was imposed in 1989 and the pace of construction fell to about 100 units per year soon thereafter. The moratorium was lifted in 1993 and the pace of residential construction rose two years later to pre-moratorium levels. A similar relationship occurs for non-residential development: completions were averaging almost 3,500 jobs per year in the 1980s when a moratorium on housing approvals was imposed. A few years later, non-residential completions fell by almost half (on average) during the next five years. However, the moratorium was lifted in 1992 but the pace of non-residential didn't immediately increase; rather, completions continued to decline through the rest of the 1990s.

Our last example is North Potomac. In this policy area residential completions declined just as a moratorium was imposed. North Potomac averaged over 700 housing units per year in the second half of the 1980s and 200 housing units per year in the 1990s. The moratorium on new housing approvals was imposed in 1990, lifted in 1991, and then imposed again from 1992 through 2000. Construction of non-residential development has been virtually zero over the entire 15-year period; the area was in moratorium for new non-residential development approvals for four years and out of moratorium for nine.

These examples suggest that there is no simple pattern for the relationship between pace of development and moratorium. As a result, staff was challenged to develop ways of analyzing the effectiveness of moratoriums on the pace of growth.

About the Methodology

There isn't an established methodology for measuring the impact of subdivision moratoriums on the pace of development. During staff's review of literature on growth management around the country, we looked for examples of similar assessments and found none that were applicable. This was due both to the fact that few localities impose moratoriums on subdivision approvals in the way that Montgomery County does and to the fact that few localities have attempted to assess how well their growth management systems affect the pace of growth.

As reviewed earlier in this report, the issue is complicated by the fact that there are factors other than the AGP which affect the pace of growth and, staff would argue, affect the pace of growth to a greater extent than the AGP does, and perhaps should. This uncertainty meant that any single approach would probably be flawed; rather than try to

develop one perfect approach, staff decided to look at the issue from two perspectives. The first method was called the "bottom-up" approach because we attempted to describe the overall amount by which the pace of development was slowed by adding together the delay experienced by individual subdivision applications. The second method was called the "top-down" approach because staff developed equations to describe the effect various factors, including the AGP, on the pace of development in each policy area.

Bottom-up Approach

The "bottom-up" approach focused on preliminary plan applications that were delayed or had no Planning Board action. A plan was considered "delayed" if the time between submission and board action was longer than one year; the average is much less than one year so staff felt comfortable describing these plans as delayed.

For example, suppose there is a subdivision application that was submitted in Year 1 and which was acted on by the Planning Board in Year 5. The "bottom-up" methodology would calculate that the subdivision application was delayed by four years. That means that we are also assuming that without a moratorium in place, the subdivision would have been approved four years earlier. In order to calculate the amount of development that would have occurred without a moratorium, the approval of the delayed plan would be accelerated by four years; which is to say that Planning Board action would be in Year 2.

The bottom-up method then requires that we estimate how quickly completions follow approvals. Using the actual experience in Montgomery County, staff determined that the rate of completion of approved plans varied over time. The average time of completion of an approved residential subdivision was four years if the subdivision was approved in 1980-84, five years if approved during 1985-94, and three years if approved in 1995-99.

So in our example of a subdivision with a four-year delay, we are assuming that without a moratorium it would have been approved in Year 2. We then assume that it would have been completed by Year 6 (if approved 1980-84), by Year 7 (if approved in 1985-94), or by Year 5 (if approved in 1995-99).

The results of the bottom-up approach are that without moratoriums, Montgomery County would have seen 1,500 more housing units completed from 1985 to 1989; 7,100 more units if the time period is lengthened to 1985-1994; and 5,900 more units for the full fifteen-year period (1985-1999). The 5,900 additional housing units translates into 16,700 more people and 2,700 more school students.

For non-residential construction, a similar approach was used. The bottom-up approach estimates that without moratoriums, Montgomery County would have seen 3,300 more "jobs" worth of non-residential development during the 1985 to 1990 period. For the 1985 to 1994 period, the amount of delayed non-residential development increases to 33,000 jobs worth, but for the full fifteen-year period of 1985 to 1999, the

total amount of non-residential development delayed is 5,400 jobs, or approximately 1.6 million square feet.

There are a couple of important caveats to the bottom-up approach. One important one is that it assumes that all delay in moratorium areas was due to the moratorium, and not to other factors. Of course, there are likely other reasons for a subdivision to be approved more than one year after the application was submitted that are unrelated to the AGP.

A second, possibly more important caveat is that the bottom-up method assumes that developers submit applications irrespective of whether the policy area is in moratorium. In fact, there is evidence that developers have learned to do the opposite – to delay the submission of applications until the moratorium has been lifted or is anticipated to be lifted. For example, preliminary plan applications for which there was no Planning Board action declined to near zero in the early 1990s.

A third, less important caveat is that this analysis assumes that there is plenty of available capacity in areas that are not in moratorium. In some cases, an area may be "officially" out of moratorium because there is some capacity remaining, but the amount of capacity is small. In one case, a policy area was "out of moratorium" for several years, but the amount of available capacity was less than that required by the first preliminary plan application in the queue of pending development. This meant that the area was, practically speaking, in moratorium for new approvals since none of the projects in the queue could move forward.

To summarize, some of the assumptions driving the bottom-up approach may tend to overstate the effect of the AGP while others would tend to understate it. Overall, staff believes that the bottom-up approach would understate the effect of the AGP because it misses all of the preliminary plan applications that were not submitted, or submitted later, because of moratoriums.

Top-Down Approach

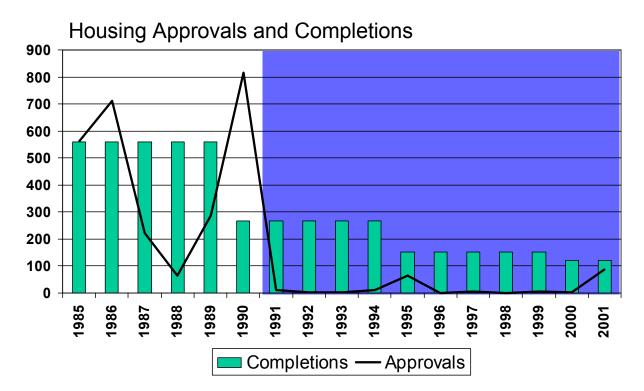
The "top-down" approach is an attempt to develop a statistical relationship between the imposition of a moratorium and the pace of development. The equation developed by Park and Planning staff uses three factors: moratorium status, number of previous approvals (size of pipeline), and interest rates, to develop an equation to "explain" the pace of development, represented by completed projects. The goal was to determine the relative importance of the "moratorium status" in predicting the pace of construction, if one knows the size of the area's pipeline and prevailing interest rates.

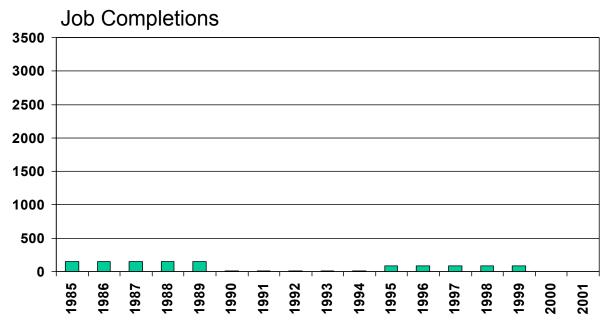
Like the bottom-up approach, the top-down method includes within it assumptions or approximations necessary to simplify the problem to be solvable. For example, interest rates represent stages in the development cycle. Unlike the bottom-up method, the top-down approach does not assume that delays are entirely due to a moratorium, nor does it assume that developers continued to submit preliminary plan

applications even when an area was in moratorium. The top-down approach instead tries to develop equations that model what actually happened, then looks at what would happen if one coefficient were changed – that one coefficient being moratorium status. The moratorium effect for each policy area is estimated and applied. For example, the residential moratorium coefficient for Aspen Hill was estimated by the top-down approach as 40 units per year; that is, for every year that the area was in moratorium, residential completions were reduced by 40 units.

Staff's main caveat to the top-down method is that the statistics from the regression equations indicate that the 95 percent confidence interval around this estimate is much larger than we'd have liked. One reason may be that top-down approach does not handle well those instances where approvals and completions occur even when an area is in moratorium, such as Fairland/White Oak and Clarksburg. A more refined approach could have taken into consideration the availability of alternative review procedures, or instances where developers provide capacity by building road improvements.

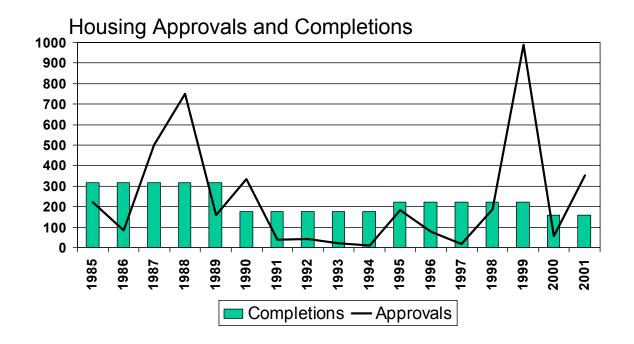
Aspen Hill

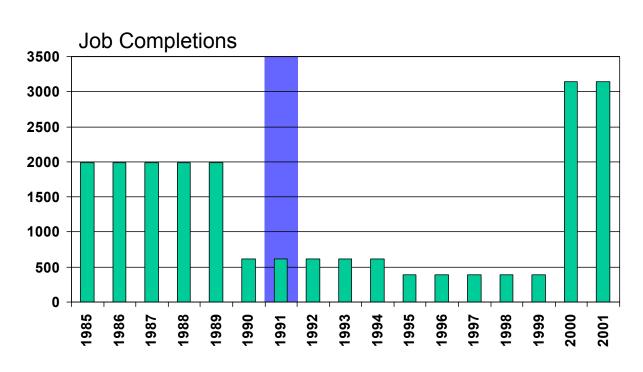




Bethesda/Chevy Chase

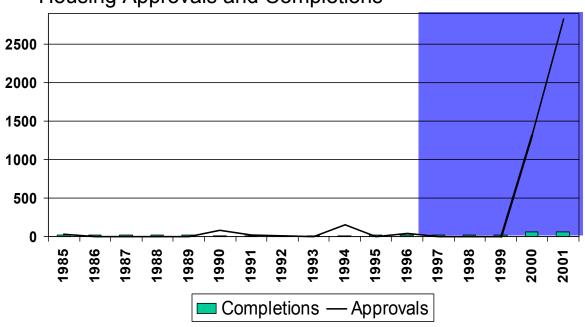
including Bethesda CBD and Friendship Heights

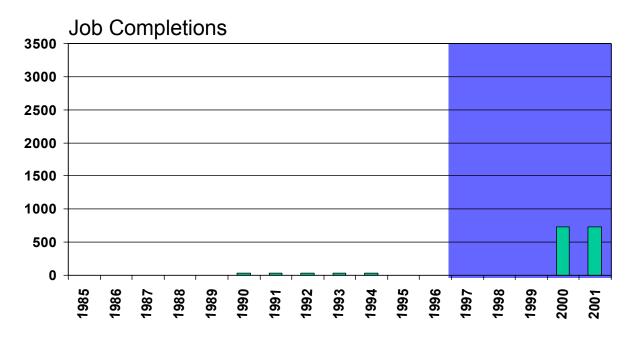




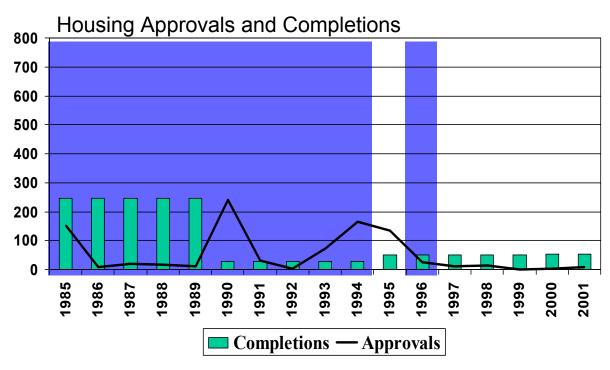
Clarksburg

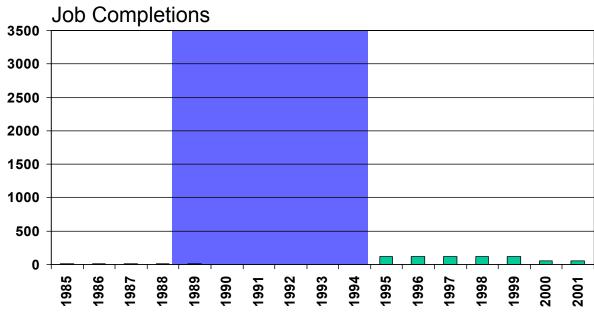
Housing Approvals and Completions



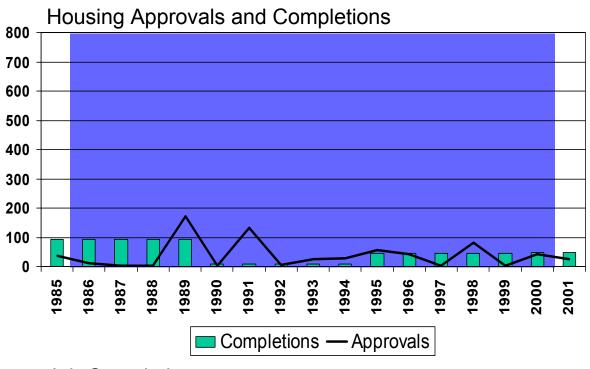


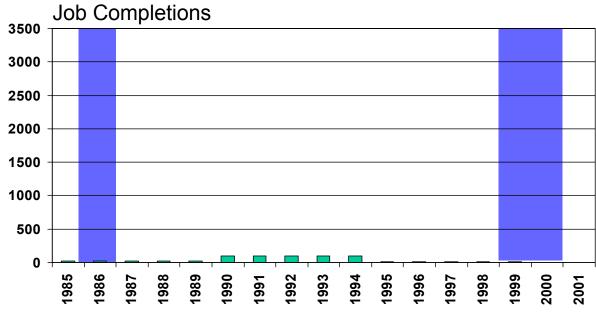
Cloverly





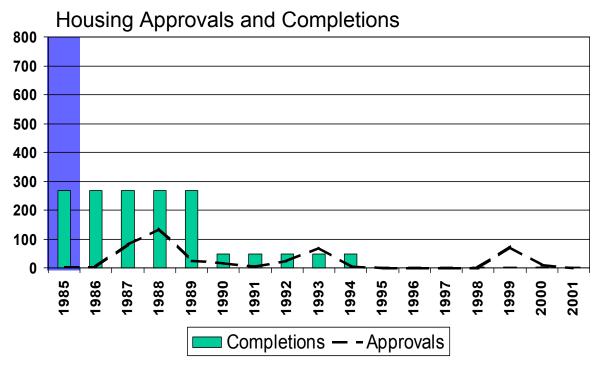
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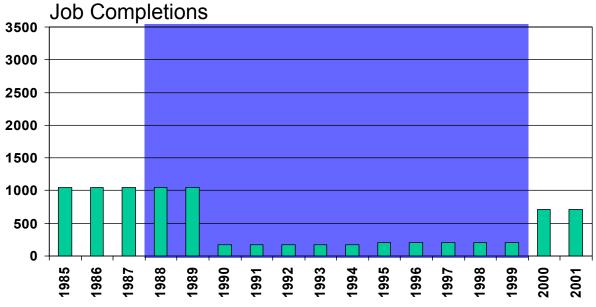




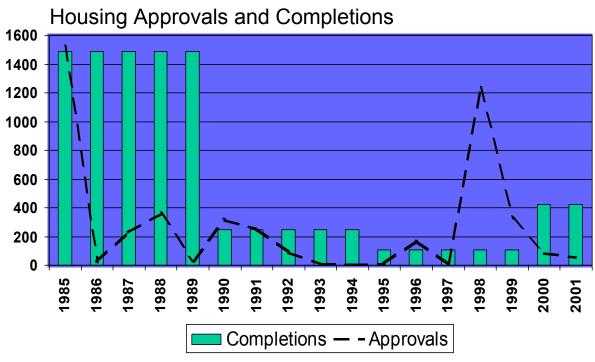
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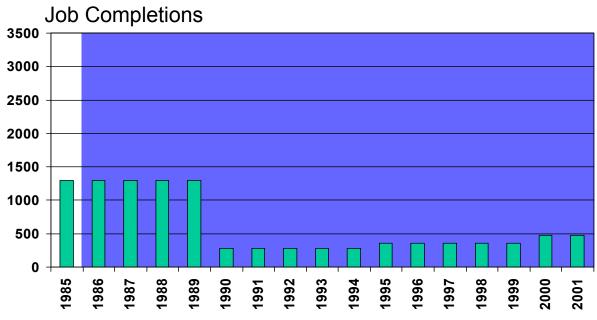
including Shady Grove



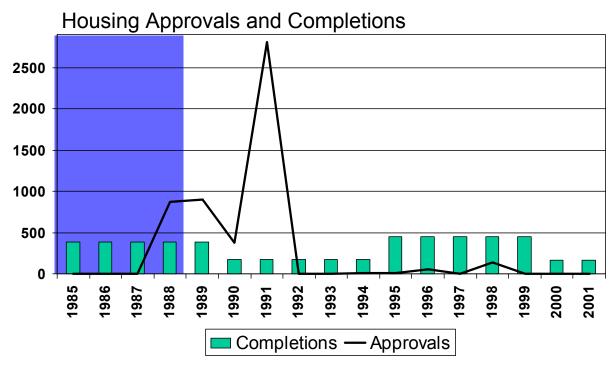


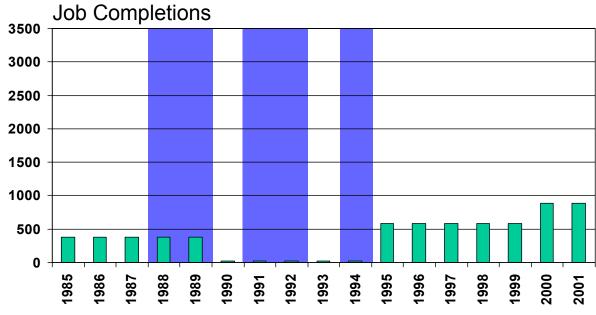
Fairland/White Oak





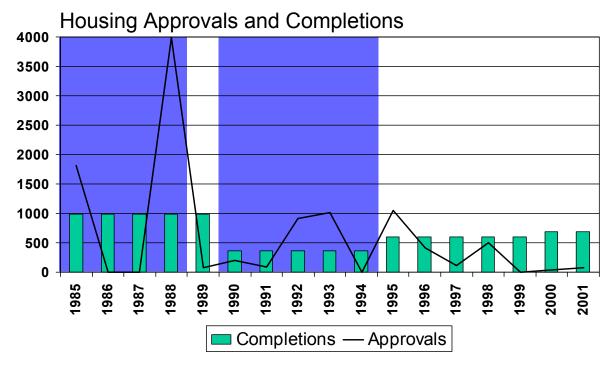
Germantown East

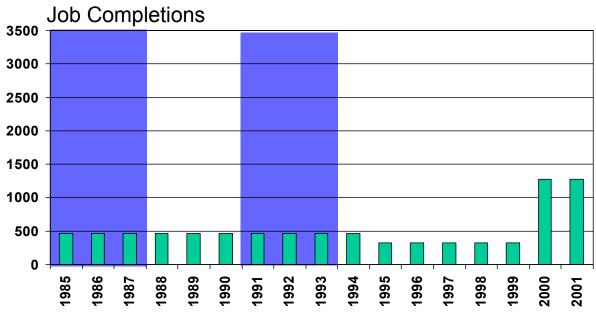




Germantown West

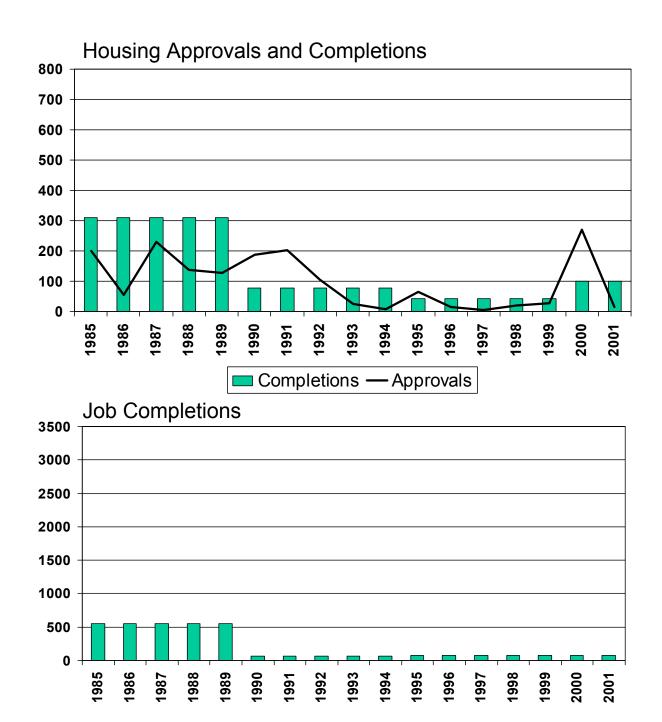
Including Germantown Town Center



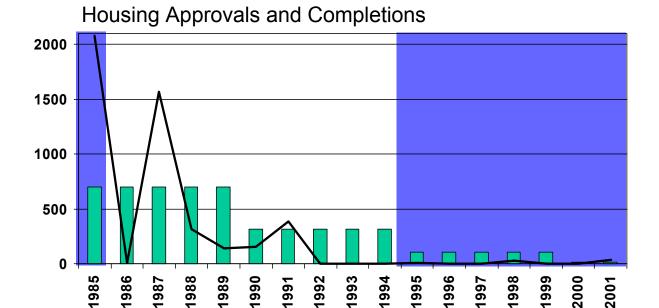


Kensington/Wheaton

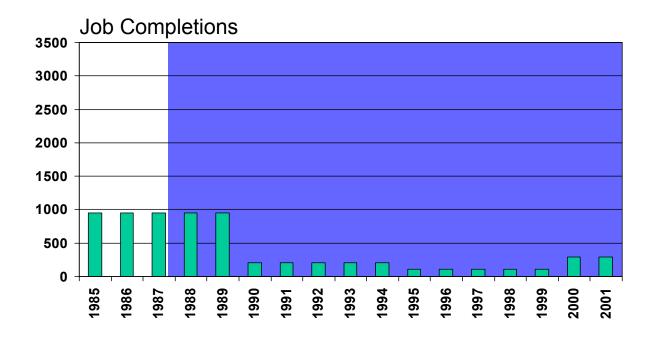
Including Glenmont and Wheaton CBD



Montgomery Village/Airpark



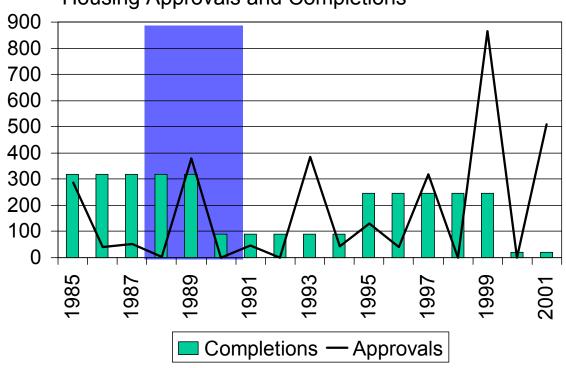
Completions — Approvals

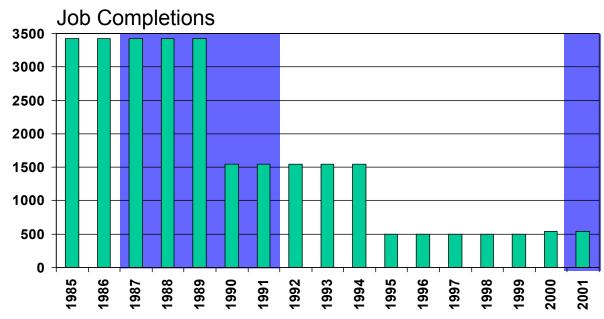


North Bethesda

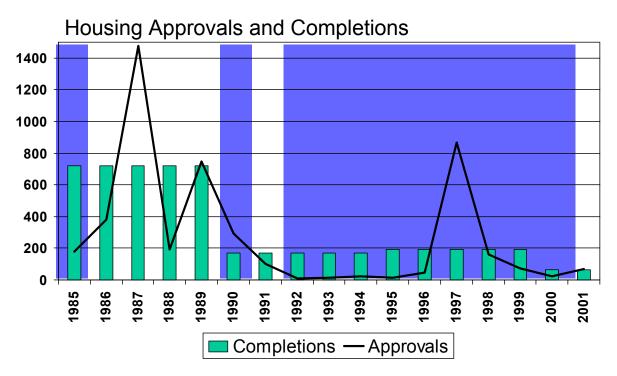
Including Grosvenor, Twinbrook, and White Flint

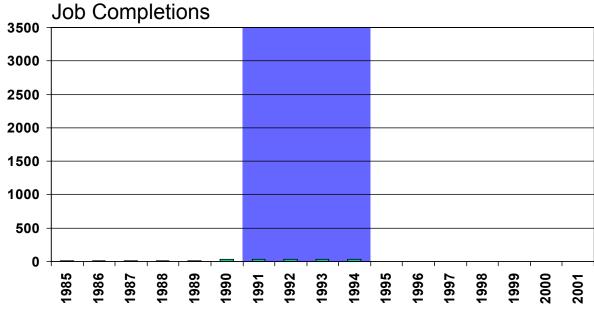
Housing Approvals and Completions



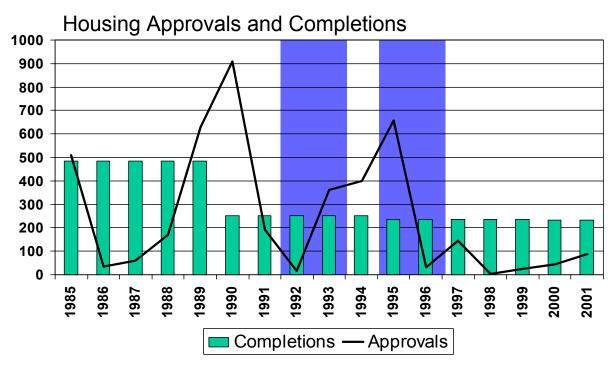


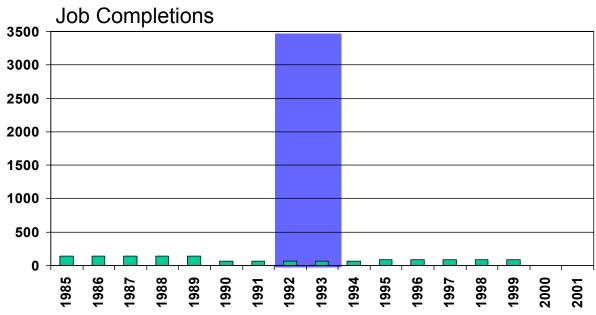
North Potomac



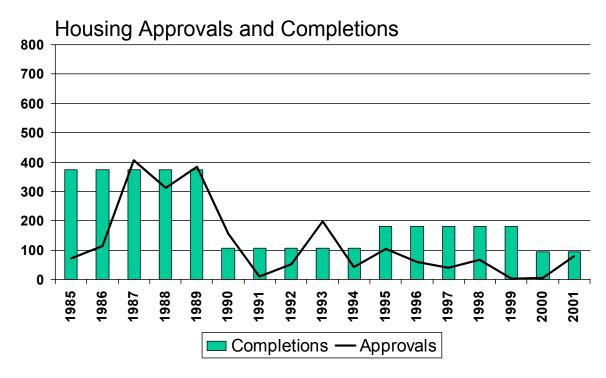


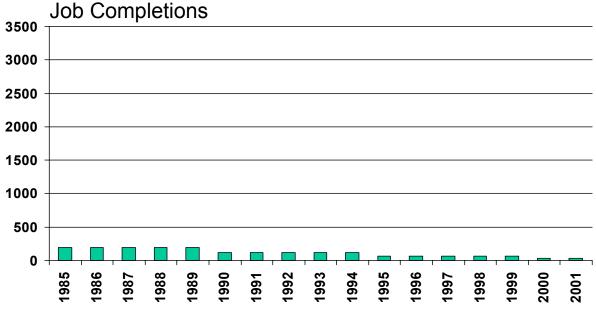
Olney



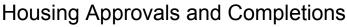


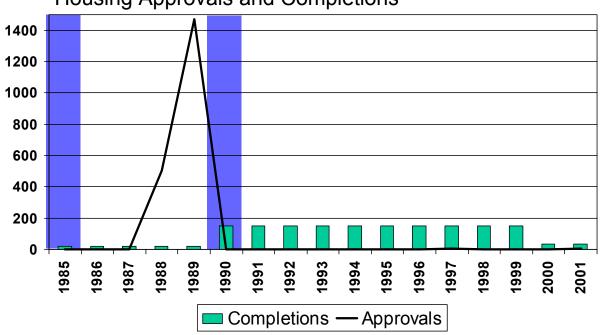
Potomac

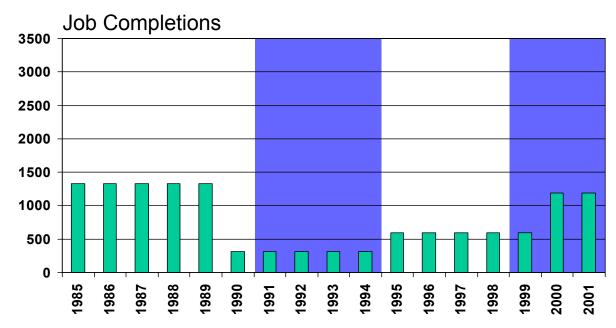




Research & Development Village







Silver Spring/Takoma Park

including Silver Spring CBD

