

# Residential Development in Charlottesville and Albemarle



A Report by  
the Piedmont Environmental Council

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## Residential Development in Charlottesville and Albemarle

### **Summary:**

Driving around the Charlottesville/Albemarle area, it is hard not to notice the amount of residential development occurring. However, the recently completed housing units, as well as those under construction, are only a fraction of the new housing that has been approved or is currently under review by City and County officials. Since 2000, there have been approvals granted or applications submitted for approximately 17,832 housing units (or Dwelling Units, DUs) for the City and the County Growth Areas. Specifically, these units have been proposed or approved through rezonings, site plans, or subdivisions. It is important to point out that this is not a list of building permit approvals nor does it include existing by-right development potential or unbuilt units from proposals approved prior to 2000. This represents the largest short-term burst of residential development in Charlottesville's and Albemarle's history. This raises several questions for local decision-makers and local residents as to the wisdom of approving development proposals years, even decades ahead of anticipated need by our community.

Despite these unprecedented approvals and submitted applications that have occurred since 2000 in the Albemarle County Growth Area and the City of Charlottesville, there is no evidence of subsiding development pressure on the Albemarle County Rural Area. Residential development in the Rural Area has remained fairly constant over the past few decades. Between 1983 and 2005, an average of 312 new Rural Area DUs were permitted annually. Under the maximum population forecast and with a continuation of this current Rural Area development trend, the 17,832 DUs in the residential pipeline would accommodate Growth Area and City growth through the year 2039. At the lower range of the growth projections and with a continuation of the Rural Area trend, the 17,832 DUs would accommodate projected City/County Growth Areas development through 2053.

These projections are based on City and County population forecasts available from the Virginia Employment Commission (VEC), from the Virginia Department of Transportation (VDOT), from two studies completed for the community's water supply planning (VHB in 1997 and Gannett Fleming in 2004), and from a recent County staff modification of the VEC projections. These forecasts predict that between the years 2000 and 2026, the City and County will grow by roughly 31,700 to 39,300 new residents; by 2055 the City and County will grow by roughly 83,000 to 113,000 new residents.

It is important to note that while no population projection is guaranteed, these forecasts are currently being used by federal, state and local officials for the planning of new roads and infrastructure, school construction, and even the public drinking water supply. Consequently, the weight they are given in other critical planning processes should be equally applied in local land-use planning. Given the decades it will take to realize the completion of all 17,832 proposed units, these findings suggest several important questions for the community and local decision-makers:

- 1) Is it prudent planning to approve a development pipeline that potentially outpaces the 20-year Comprehensive Planning period?
- 2) Is it fiscally prudent to approve projects and accept proffers for developments that may take decades to be realized? That is, will a dollar proffered in 2006 have the same buying power in 2026, when that dollar is finally used for public improvements?
- 3) Is it good planning to make decisions that will limit land-use and planning options for future decision-makers? That is, will a backlog of early approvals result in later *stale zoning*? For example, will transportation improvements proffered in 2006 still be valid for circumstances that will not be realized until 2026, or even later?
- 4) Why are there not guarantees that what has been approved will actually be built? Given that Albemarle's Comprehensive Plan calls for growth to go into the Growth Areas, local officials need to

ensure that those approved units are realized in a manner consistent with the approved densities. As evidence of this concern, Biscuit Run has recently dropped from 4,970 proposed units to 3,500.

Given that these 17,832 dwelling units have been submitted and many approved and based on their conformance with the community's Comprehensive Plans, it is troubling that the voting public and decision-makers lack the information necessary to determine if recent and past approvals have actually contributed, as promised, to the realization of those Plans. Projects that only result in a fraction of the residential units that were approved or projects that will take years or even decades after approvals to be completed raise serious questions about the decision-making process.

### **Facts and Figures**

Since 2000, residential development proposals in the City of Charlottesville and the Albemarle County designated Growth Areas represent a "pipeline" of approximately 17,832 new Dwelling Units.

This pipeline represents both submittals and approvals for rezonings, special use permits, and subdivisions between early 2000 and today. This is not a list of building permit approvals; it does not include all possible by-right proposals; it does not include unbuilt units from older, previously approved subdivisions.<sup>i</sup> Development applications indicate approximately 14,577 new dwelling units have been proposed in Albemarle County's designated Growth Areas. An additional 3,255 have been proposed in the City of Charlottesville. A total of 17,832 new residential units are proposed for the City and the County's Growth Areas. Of this total, approximately 7,241 remain under review for rezoning and other necessary approvals. [See Table 1]

### **Looking Back: Historic Development Trends**

Between 1983 and 2005, Albemarle County approved residential building permits for 19,707 new dwelling units. A dwelling unit is any residential unit: single family home, townhouse, apartment, condominium, mobile home, etc. Of these, 12,529 were approved in the designated Growth Areas; the remaining 7,178 in the Rural Areas. This represents an annual average of 857 residential building permits--545 for the Growth Areas and 312 for the Rural Area.<sup>ii</sup> In the City of Charlottesville, between 1990 and 2005 there were building permits issued for 1,957 new dwelling units and 50 demolition permits issued for residential units—a net of 1,907 new DUs during that period and an annual average of 119 new units per year.<sup>iii</sup> [See Table 2]

### **Looking Ahead: Population Projections**

The population projections employed here were derived from widely accepted, statistically valid processes. These projections are used by public and private agencies to predict a range of possibilities to be used for planning and decision-making. In Virginia, population projections from the Virginia Employment Commission (VEC) have long been held as the benchmark estimates. The 2000 census determined that the City of Charlottesville and Albemarle County had a combined population of 124,285.<sup>iv</sup> The University of Virginia's Weldon Cooper Center estimated the City and County in 2005 had a combined population of 130,300.<sup>v</sup>

The latest VEC projections forecast the following for the combined City and County population:

- By 2010, a population of 136,802.<sup>vi</sup>
- By 2020, a population of 147,000.<sup>vii</sup>
- By 2030, a population of 156,999.<sup>viii</sup>

A 2003, a Virginia Department of Transportation study, VTrans 2025, projected Charlottesville and Albemarle's combined 2025 population at 158,730.<sup>ix</sup>

In recent discussions on the public water supply for Charlottesville and Albemarle, consultants projected the population growth for the City and the County. In both studies, as with the VEC projections, Charlottesville population was projected to decline.<sup>x</sup>

- The 2004 Gannett Fleming report projected a combined City County population of 160,220 by 2025, and by 2055 a population of 205,498.<sup>xi</sup>
- The 1997 VHB report estimated only the County population, projecting 116,295 by 2025, and 200,163 by 2055. Adding to this the 2000 Census count for the City, we can estimate a combined population of 156,394 by 2025, and a population of 240,262 by 2055.<sup>xii</sup>

On October 4, 2006, County staff suggested to County officials that for planning purposes, they use the VEC projection with an additional “10% error factor that considers other potential growth impacts.”<sup>xiii</sup> The result was to modify the VEC’s projections as follows:

- By 2010, a County population of 106,900; adding to this the VEC’s 2010 City projection suggests a combined total of 146,500.<sup>xiv</sup>
- By 2020, a County population of 118,100; adding to this the VEC’s 2020 City projection suggests a combined total of 157,700.<sup>xv</sup>
- By 2030, a County population of 129,100; adding to this the VEC’s 2030 City projection suggests a combined total of 168,700.<sup>xvi</sup>

All of these population projections are reasonably similar; however they do represent a range of possibilities. Organizing the projections into three discrete data sets allows a representation of the *maximum*, the *average*, and the *minimum* ranges of the estimated growth for the period between 2000 and 2055. From these three data sets was determined a 2<sup>nd</sup> degree polynomial equation that represents each of the projected trend lines.<sup>xvii</sup> These equations allow a projection of the annual population change for each year between 2000 and 2055. While the available projections all forecast a declining City of Charlottesville population, it is clear that the City is growing. So as to assume no net loss of local population, in combining the City and County projections, the trend line representing the maximum population forecast assumes the City population will be maintained at the year 2000 US Census count. Under this assumption, some of the County’s projected growth will be accommodated by new residential development in the City.<sup>xviii</sup>

### **Future Residential Development**

From the 2000 Census data, in Albemarle County there was an average of 2.3 persons per Housing Units (Dwelling Units, DUs). The City average was 2.6 and 2.4 for the combined City/County data.<sup>xix</sup> As this ratio represents the most conservative of the values, it allows a conservative measure of how many Dwelling Units will be necessary to accommodate the projected growth. For example, a population of 25,000 people would need 10,869 DUs at 2.3 persons per DU, but only 10,000 DUs at 2.5 persons per DU.<sup>xx</sup>

For each of the three projected population trend lines, it is possible to convert the annual growth into an estimate of new dwelling units needed to accommodate the projected growth from the year 2000. However, there is no way to determine where those units will be built—in the City, in the Growth Areas or in the Rural Area. Therefore, to account for continued Rural Area development, a second data set was created which assumed the continuation of the average rate of Rural Area residential development—approximately 312 units per year—and subtracted these totals from the three trend lines.<sup>xxi</sup> These adjusted projections thus represent the lower range of new dwelling units needed in the City and County Growth Areas.

## **Findings**

Using the 2000 Census as a starting point, assuming 2.3 persons per dwelling unit and assuming Rural Area development continues at the historic rate, the trend lines indicate the following about the 17,832 DUs in the current City and County Growth Areas pipeline:

- ❑ At the maximum growth projection, these units would accommodate growth for the City and County Growth Areas through 2039.
- ❑ At the average growth projection, these units would accommodate growth for the City and County Growth Areas through 2044.
- ❑ At the average growth projection, these units would accommodate growth for the City and County Growth Areas through 2053.

[See Table 3]

## **Resource Material**

This analysis was based on several sources of information on development proposals. Albemarle County issues periodic memos which identify development proposals submitted to the County; more specifically, those proposals which require action by either the Planning Commission or the Board of Supervisors. The County's web site has a page which summarizes those proposals requiring either a rezoning (ZMA), a Special Use permit (SP), or a Comprehensive Plan Amendment (CPA). The County also posts the agendas for all Planning Commission and Board of Supervisors meetings. Charlottesville planners recently presented to the City Council a detailed summary of development proposals in the City.

Sources such as the University of Virginia's Weldon Cooper Center, the Virginia Employment Commission, and the City and County web sites offer detailed information on population projections and past development trends. The Rivanna Water and Sewer Authority posts all of the water demand studies on their web page, [www.rivanna.org](http://www.rivanna.org).

All efforts have been made to eliminate duplicate entries and to account for what has been approved and what is still pending. It is acknowledged that the information may be imperfect; it certainly may be incomplete. It is also acknowledged that the dwelling units proposed are not an indication of what may—or may not—actually be built. In Albemarle County, it is not uncommon for approved projects to “build out” with fewer units than were actually approved in the rezoning. It is understandable that as the details of a project are clarified, some units may be eliminated, however questions should be asked when final developments result in significantly fewer units than were approved in the rezoning process. However, it must be understood that what is approved represents the potential for what can be built. It requires flawed logic to argue for approval of a proposed development with the statement, “all of these units will never be built.” Such an admission suggests a dismissal of the Comprehensive Plan.

## **Discussion**

The findings in this report do not argue that these units should not be approved or built. It does, however, suggest that citizens and decision-makers should take a critical look at the timing of these proposals and request information on the cumulative impact of all the units currently in this pipeline. Decisions that are based on the Comprehensive Plan and made in the specific interest of the public's “health, safety and welfare” should not defer the results of these decisions to the long-term whims of the local housing market. If there is a valid, public purpose to approve a 20 to 30-year inventory of new dwelling units, then it should be stated. The community's interest is not being served if approvals are granted with no assurances that what was approved will be built in a timely manner, or when ultimately built will be in compliance with the community's vision that informed the approval, or if over time until build out, the proffers do not retain their value or relevance.

The Comprehensive Plan Amendments and rezoning requests that result in the community's major and minor residential developments include critical analysis by staff and often a contentious and difficult decision-making process. Quite simply, the numbers and the details matter. To ensure good planning, and to provide valuable information for consideration in other major proposals, it would seem prudent to know what exactly has happened with previous approvals.

Additionally, the fact cannot be ignored that the City and County are relying on these very population projections in contemplating a projected \$130.5-million expansion of the community water supply. Either these projections are to be used for planning purposes or they are not. That is, they cannot be selectively applied to water supply planning, but somehow ignored or deemed unreliable when attributed to land use planning.

Some might ask why we should be concerned about approving "too much" housing or enough inventory for 10, 20 even 30 years into the future. Many argue that approvals do not "attract" growth, only facilitate it. All of this may be true, however we do know that the approval of a project that may not be realized for years or even decades can seriously erode a community's ability to react to future change. The market will take care of a lot of things, but if the old zoning would still allow a profitable project, few developers would be expected to ask the County for a rezoning—and offer to revise an *old plan*--simply to "help" the community meet its planning objectives.

The October 18, 2005 statements to the Albemarle Planning Commission by Madison County Supervisor David Jones offer a stark warning about allowing approvals to get too far ahead of the market: "*the accumulation of inbuilt [sic] lots that has been the pain for a lot of people. If you look at your neighbor in Greene that is what has killed them. It was the lots that they created in the 60's and the 70's.... If you look at Loudoun [sic] County, in 1992 [they had] created enough residential for another 40 million people.*"<sup>xvii</sup>

Approving a 500 unit—or a 250 unit or a 5,000 unit--CPA or rezoning does not assure those units and the approved densities will be realized. Far worse than the accumulation of vacant, approved building sites is the actual use of those parcels for development at a far lower density than was proposed or approved.

To illustrate this point, imagine that Biscuit Run rezoning is approved at the proposed 3,500 dwelling units. [It was previously a request for 4,970 units.] However, as development proceeds, assume that the market indicates it will take decades to sell these homes. Should this prove unacceptable to the financial expectations of the investors, it is conceivable that a lower density project—fewer homes on larger lots—might be pursued.

### **Conclusions**

Given the enthusiasm with which the mantra "growth in the Growth Areas protects the Rural Area" is used to approve projects, is it OK, for example in the case of Biscuit Run, to approve 3,500 but get far fewer? If 3,500 are approved years before the units are "needed," then what is wrong with finding some means to require that what is approved is what actually gets built. If the argument for early approval is that these new units must be approved so as to reduce development in the Rural Area, then should the County not, at least, make sure that the result is, actually, reduced Rural Area development? If these concerns are dismissed or the expectation of a build-out that is NOT significantly less than what was approved is deemed impractical or implausible, then how can there be such certainty on the assumptions under which approval was granted?

Granting such *premature* approvals may increase the development potential and the density of the Growth Areas--at least on a particular parcel--however granting approval "too early" or without significant and stringent conditions may accomplish little more than assure the developer a full range of options while

handcuffing the locality's ability to respond to any speculative revisions to the approved project; revisions which might be inconsistent with the planning objectives of the community.

The intent of presenting these findings is not to propose a limit on future development potential. In fact, the intent is quite the opposite. The intent is to raise questions about how well these projects—presumably approved with the Comprehensive Plan as a guide—are in fact generating the results that were promised in those deliberations. Furthermore, it is hoped that in generating further discussion and debate on the level of residential development currently proposed, the community and local officials will take a very hard look at:

- the timing of these approvals relative to the community's ability to adequately account for the costs and consequences of future transportation impacts and increased burdens on public infrastructure;
- the cumulative impact of all proposals in the pipeline, not just individual projects;
- the land use consequences of projects which develop at far fewer units than approved;
- the actual results of completed projects versus the results promised in approval deliberations;
- the potential for present-day land-use and growth management decisions to result in stale zoning, limiting the options available to future residents and local officials;
- the wishes of the entire community versus the speculative interests of the development community; and
- the symbiotic relationship between the City and County. How the accommodation of well-planned and designed development within the City benefits the City while positively contributing to the County's planning objectives.

Finally, it has been argued that the reason to approve such an extended inventory of potential housing is to reduce residential development trends in the Rural Area. Realizing that the current County Board of Supervisors lacks the political will to take the recommended actions towards Rural Area protection, this community should only accept these Growth Area approvals after it has been demonstrated that such actions have previously been effective in protecting the Rural Area. Unfortunately, development trends for the past 20 years indicate there is no such correlation.

**Table 1: City and Growth Areas Residential Proposals**

Area	Approved Proposals	DU's	Proposal	Approved
Pantops	Pantops Place**(Cottages at Jefferson Hgts)	100	ZMA-1999-001	1/12/2000
Glenmore	Glenmore Associates	114	ZMA-1999-016	4/19/2000
Crozet	Stonegate at Western Ridge	-	ZMA-1999-017	6/7/2000
Rio Road	Dunlora Phase 4B Rivercreek	13	ZMA-2000-008	2/14/2001
Growth Area South	Mill Creek North Village Homes II	36	ZMA-2000-007	5/16/2001
Pantops	Avemore	406	ZMA-2000-010	6/20/2001
Crozet	Western Ridge Phase 5C	18	ZMA-2001-002	7/6/2001
Growth Area South	Redfields Phase 4	14	ZMA-2001-001	9/19/2001
Pantops	Pantops Place**(Cottages at Jefferson Hts)	-	ZMA-2001-011	10/3/2001
Crozet	Clover Lawn	24	ZMA-1999-011	12/12/2001
Crozet	Bargamin Park	43	ZMA-2001-016	3/6/2002
250 West	White Gables	76	SP-2002-023	3/19/2003
29 North	Hollymead TC - Area D*	370	ZMA-2002-02	8/6/2003
29 North	Hollymead TC - Area C*	120	ZMA-2001-20	9/8/2003
29 North	Albemarle Place	650	ZMA-2001-07	10/22/2003
Crozet	Poplar Glen (Stillfried Lane TH)	26	ZMA-2003-12	6/9/2004
Growth Area south	Avon Park	61	ZMA-2004-03	7/14/2004
Crozet	The Meadows Expansion	56	ZMA-2003-05	11/6/2004
29 North	Briarwood	4	ZMA-2004-14	2/2/2005
29 North	Glenwood Station	78	ZMA-2004-16	3/16/2005
Pantops	Cottages at Jefferson Hgts **	4	ZMA-2004-09	4/20/2005
250 West	Kenridge	66	SP-2004-052	9/14/2005
250 West	Fontaine Avenue Townhouses	61	ZMA-2004-002	9/14/2005
Crozet	Old Trail	2,275	ZMA-2004-017	9/14/2005
Rio Road	Belvedere	775	ZMA-2004-07	10/12/2005
Crozet	Wickham Pond I	107	ZMA-2004-17	1/4/2006
29 North	Woodbrook Station	8	ZMA-2003-008	1/11/2006
Crozet	Cross Property (Liberty Hall)	53	ZMA-2005-005	6/14/2006
Crozet	Poplar Glen - Phase 2	28	ZMA-2005-014	7/5/2006
29 North	North Pointe	893	ZMA-2000-009	8/2/2006
Pantops	Cascadia	330	ZMA-2002-004	8/2/2006
Crozet	Wickham Pond - Phase II	106	ZMA-2005-018	9/13/2006
Crozet	Westhall Phase V	36	ZMA-2006-001	9/13/2006
Crozet	Upper Ballard Field	43	SUB-2004-102	Approved
Crozet	Ballard Field	63	SUB-2004-136	Approved
Crozet	Old Trail Creekside	24	SUB-2004-288	Approved
Crozet	Ballard Field Townhouses	79	SUB-2005-017	Approved
Crozet	Old Trail Creekside II - Phase 1	35	SUB-2005-391	Approved
29 North	Oakleigh Townhomes	60	SDP-2005-062	Approved
Crozet	Parkside Village	60	SDP-2003-080	Approved
Crozet	Westhall Phase IV	36	SDP-2005-90	Approved
Crozet	West End at Western Ridge	17	SUB-2004-134	Approved
Crozet	Westhall I & II (SF)	49	SUB-2005-113	Approved
Crozet	Westhall Phase III	9	SUB-2005-146	Approved
Crozet	Clayton	27	SUB-2005-229	Approved
Hollymead	Cedar Hill MHP	32	SP-2003-006	Approved
	Rio Square	22	ZMA-2001-003	Approved
completed 2003 - 06	City of Charlottesville	625		
	<b>Total</b>	<b>8,132</b>		

**Table 1: City and Growth Areas Residential Proposals (cont'd)**

Area	Site Plans & Subdivisions under review (assume approvals are expected)	DU's		
250 West	University Village	48	SDP-2003-086	Assume Pending
29 North	Solomon Road	30	SDP-2005-025	Assume Pending
29 North	Briarwood Phase 1A, 1B, part of 5	173	SDP-2005-055	Assume Pending
29 North	Hollymead TC Abingdon Place	56	SDP-2005-098	Assume Pending
29 North	Stonewater	48	SDP-2005-241	Assume Pending
29 North	Bending Branch	10	SUB-2004-097	Assume Pending
29 North	Woodbriar	4	SUB-2004-270	Assume Pending
29 North	Larry and Barry Wood	2	SUB-2005-018	Assume Pending
29 North	Olson	2	SUB-2005-126	Assume Pending
29 North	Montgomery Ridge - Phase III	8	SUB-2005-289	Assume Pending
Crozet	Meslar	2	SUB-2004-328	Assume Pending
Growth Area south	The Woodlands	303	SDP-2005-123	Assume Pending
Growth Area south	Oak Hill Section 3	14	SUB-2004-152	Assume Pending
Growth Area south	Country Green Cottages	16	SUB-2005-258	Assume Pending
Lanetown Road?	Central Virginia Capital Lots A,B,C,D	4	SUB-2005-314	Assume Pending
Pantops	Parkview Low/Mod Income	90	SDP-2004-001	Assume Pending
Pantops	Avemore Ph II	92	SDP-2004-117	Assume Pending
Pantops	Luxor at Pantops	206	SDP-2005-117	Assume Pending
Pantops	Ashcroft West	28	SUB 2005-00091	Assume Pending
Pantops	Fontana Phase 4B	29	SUB-2005-123	Assume Pending
Pantops	Lake Ridge	95	SUB-2006-00163	Assume Pending
Crozet	Foothill Crossing (Crozet)	75	SUB-2006-0315	Assume Pending
	City of Charlottesville	1,124	projects under way -	
	<b>Total</b>	<b>2,459</b>		

Area	CPAs, SPs, and ZMAs (under review or status uncertain)	DU's		
Pantops	Fontana Phase 4C	31	ZMA-2004-018	awaiting resubmittal
29 North	Hollymead TC - Area A-2	960	ZMA-2005-15	awaiting resubmittal
Growth Area South	Avinity	113	ZMA-2006-005	Awaiting resubmittal
Growth Area south	Biscuit Run (Breedon/Forest Lodge)	3,500	ZMA-2005-017	Awaiting resubmittal.
Crozet	Haden Place	34	ZMA-2005-007	Deferred
Crozet	Jarman Hill	96	ZMA-2006-003	Deferred
29 North	Treesdale Park	99	ZMA-2004-022	Under review
29 North	Pine Ridge	17	ZMA-2004-06	Deferred
Glenmore	Glenmore Section S5, Livingood	42	ZMA-2006-015	to PC 12/12/2006
Glenmore	Glenmore Section K2, Leake	110	ZMA-2006-016	to PC 12/12/2006
29 North	Forest Ridge Lots 1 & 22	4	ZMA-2006-018	to PC 12/12/2006
Glenmore	Rivanna Village	495	ZMA-2001-008	Under review
	Willow Glen	234	ZMA-2006-019	Under review
	City of Charlottesville	1,006	projects in review	
	City of Charlottesville	500	in discussion	
	<b>Total</b>	<b>7,241</b>		
	<b>Total in "pipeline"</b>	<b>17,832</b>		

<b>Table 2: Residential Building Permits</b>				
	<b>Albemarle County</b>			
<b>YEAR</b>	<b>Rural Area</b>	<b>Growth Areas</b>	<b>Total</b>	<b>Charlottesville</b>
1983	357	706	1,063	n/a
1984	378	347	725	n/a
1985	391	323	714	n/a
1986	393	344	737	n/a
1987	427	227	654	n/a
1988	395	278	673	n/a
1989	347	962	1,309	n/a
1990	335	469	804	85
1991	242	372	614	57
1992	264	602	866	112
1993	268	537	805	85
1994	239	700	939	74
1995	253	343	596	33
1996	231	604	835	31
1997	272	633	905	35
1998	286	588	874	81
1999	336	434	770	70
2000	281	369	650	64
2001	253	622	875	152
2002	316	1,404	1,720	116
2003	298	781	1,079	356
2004	281	318	599	271
2005	335	566	901	285
<b>Total</b>	<b>7,178</b>	<b>12,529</b>	<b>19,707</b>	<b>1,907</b>
<b>Annual Average</b>	<b>312</b>	<b>545</b>	<b>857</b>	<b>119</b>

**Table 3: New Dwelling Units per Projected Population Growth**

Year	Max	Average	Min	Max Less Rural Area	Average Less Rural Area	Min Less Rural Area	DUs in Pipeline
2025	16,283	14,762	13,055	8,171	6,650	4,943	17,832
<b>2026</b>	<b>17,110</b>	15,552	13,800	8,686	7,128	5,376	<b>17,832</b>
2027	17,956	16,352	14,546	9,220	7,616	5,810	17,832
<b>2028</b>	18,821	<b>17,162</b>	15,294	9,773	8,114	6,246	<b>17,832</b>
2029	19,704	17,981	16,043	10,344	8,621	6,683	17,832
2030	20,607	18,809	16,794	10,935	9,137	7,122	17,832
<b>2031</b>	21,528	19,648	<b>17,547</b>	11,544	9,664	7,563	<b>17,832</b>
2032	22,468	20,496	18,301	12,172	10,200	8,005	17,832
2033	23,427	21,354	19,056	12,819	10,746	8,448	17,832
2034	24,404	22,222	19,814	13,484	11,302	8,894	17,832
2035	25,401	23,099	20,572	14,169	11,867	9,340	17,832
2036	26,416	23,986	21,333	14,872	12,442	9,789	17,832
2037	27,450	24,882	22,094	15,594	13,026	10,238	17,832
2038	28,503	25,789	22,858	16,335	13,621	10,690	17,832
<b>2039</b>	29,575	26,704	23,623	<b>17,095</b>	14,224	11,143	<b>17,832</b>
2040	30,665	27,630	24,389	17,873	14,838	11,597	17,832
2041	31,775	28,565	25,157	18,671	15,461	12,053	17,832
2042	32,903	29,510	25,927	19,487	16,094	12,511	17,832
2043	34,050	30,465	26,698	20,322	16,737	12,970	17,832
<b>2044</b>	35,216	31,429	27,471	21,176	<b>17,389</b>	13,431	<b>17,832</b>
2045	36,401	32,403	28,245	22,049	18,051	13,893	17,832
2046	37,604	33,387	29,021	22,940	18,723	14,357	17,832
2047	38,827	34,380	29,798	23,851	19,404	14,822	17,832
2048	40,068	35,384	30,577	24,780	20,096	15,289	17,832
2049	41,328	36,396	31,357	25,728	20,796	15,757	17,832
2050	42,607	37,419	32,139	26,695	21,507	16,227	17,832
2051	43,904	38,451	32,923	27,680	22,227	16,699	17,832
2052	45,221	39,493	33,708	28,685	22,957	17,172	17,832
<b>2053</b>	46,556	40,544	34,494	29,708	23,696	<b>17,646</b>	<b>17,832</b>
2054	47,911	41,605	35,282	30,751	24,445	18,122	17,832
2055	49,284	42,676	36,072	31,812	25,204	18,600	17,832

## Endnotes

<sup>i</sup> Albemarle County's 2005 Residential Development Index. In the summary of Approved Developments are listed approved Growth Areas and Rural Area subdivisions representing 11,214 total dwelling units. Of these, 4,669 are identified as "built," suggesting the potential for 6,545 new dwelling units. In comparing the projects on this Index with those in the current pipeline list, there are approximately 1,000 unbuilt Growth Areas units that are not related to proposals in the pipeline. If these approximately 1,000 units are added to the pipeline list, at the maximum growth projection and 2.3 persons per DU and assuming Rural Area development continues at the historic rate, these [approx.] 19,000 units would accommodate all of the projected City and County population growth beyond 2041.

<sup>ii</sup> Albemarle County Development Activity reports

<sup>iii</sup> Annual Building Permit Data, Weldon Cooper Center VaStats

<sup>iv</sup> The Census counts used are as posted on Weldon Cooper's *2004 Final & 2005 Provisional Population Estimates, Virginia Cities & Counties*, which includes "all official corrections to the 2000 Census counts." The City of Charlottesville 2000 population was 40,099; Albemarle County's 2000 count was 84,186, for a combined total of 124,285. [http://www3.ccps.virginia.edu/demographics/estimates/2005/2005\\_estimates\\_Virginia.xls](http://www3.ccps.virginia.edu/demographics/estimates/2005/2005_estimates_Virginia.xls)

<sup>v</sup> *2005 Virginia Population Estimates*, May 2006, Weldon Cooper Center. 90,400 Albemarle County's estimated 2005 population was 90,400, Charlottesville's estimated 2005 population was 39,900.

<http://www.coopercenter.org/demographics/sitefiles/documents/pdfs/popestimatescities&counties/2005vapopestimates.pdf>.

<sup>vi</sup> Virginia Employment Commission. Albemarle 97,202 and Charlottesville 39,600, <http://velma.virtuallmi.com>

<sup>vii</sup> Virginia Employment Commission, Albemarle 107,400 and Charlottesville 39,600, <http://velma.virtuallmi.com>

<sup>viii</sup> Virginia Employment Commission, Albemarle 117,399 and Charlottesville 39,600, <http://velma.virtuallmi.com>

<sup>ix</sup> VTrans 2025, *Expected Changes in Virginia Transportation Demand by 2025*, March 31, 2003

<sup>x</sup> Gannett Fleming's 2004 study suggests that between 2000 and 2055, the Charlottesville population will drop from 39,912 to 38,381. The Virginia Employment Commission 2000 to 2030 projections forecast Charlottesville will drop from 40,099 to 39,600.

<sup>xi</sup> Gannett Fleming 2004 Report. 2030 population is extrapolation from linear regression equation presented in study. For Albemarle,  $y = (1537.1 * X) + 36,463$ , where  $X = \text{Year} - 1970$ , for Charlottesville,  $y = (-27.835 * X) + 40,469$ , where  $X = \text{Year} - 1980$ . The GF projections include increased enrollment at the University of Virginia, however this is for water supply planning only. In overall population projections and census counts, University of Virginia students are included in the count of City and County residents.

<sup>xii</sup> VHB 1997, polynomial equation:  $y = 20,835 * (e^{(0.0181 * X)})$ , where  $X = \text{Year} - 1930$ ; 2000 Census count for Charlottesville, Virginia Employment Commission

<sup>xiii</sup> County Staff to BoS, October 4, 2006, from *Guidelines for Growth in the Development Areas*. "According to population projections from the Virginia Employment Commission (VEC), the population is projected to grow to 97,200 in 2010, 107,400 in 2020 and 117,400 in 2030. Recent VEC projections have been approximately 3% to 6% lower than the actual population realized, meaning that the actual growth will probably be somewhat greater. Using a more liberal 10% error factor that considers other potential growth impacts, such as NGIC, the County's population would grow to approximately 106,900 in 2010, 118,100 in 2020 and 129,100 in 2030. This population growth would translate to close to 650 dwelling units per year over the next 25 years." [emphasis added]

<sup>xiv</sup> County Staff to BoS, October 4, 2006; VEC projection for Charlottesville.

<sup>xv</sup> County Staff to BoS, October 4, 2006; VEC projection for Charlottesville.

<sup>xvi</sup> County Staff to BoS, October 4, 2006; VEC projection for Charlottesville.

<sup>xvii</sup> Polynomial for maximum population projection:  $y = (21.654 * X^2) + (797.69 * X) + 128261$ , where  $X = \text{Year} - 2000$ . Polynomial for average population projection:  $y = (11.132 * X^2) + (1249.5 * X) + 120,043$ , where  $X = \text{Year} - 2000$ . Polynomial for minimum population projection:  $y = (1.7807 * X^2) + (1622.2 * X) + 112,643$ , where  $X = \text{Year} - 2000$ . In generating polynomial equations from any data set, the "R-squared" (R<sup>2</sup>) value is used to determine how well the equation "fits" the data set. An R<sup>2</sup> of 1 or -1 suggests a "strong" fit and an R<sup>2</sup> of 0 represents a data set with a "weak" fit, an unreliable trend line. For the data sets above the R<sup>2</sup> for the maximum was 0.990; the R<sup>2</sup> for the average was 0.999; the R<sup>2</sup> of the minimum was 0.994. Each indicates that the polynomial equation trend line is a near "perfect fit" of the data.

<sup>xviii</sup> In lieu of assuming some of the County's projected population growth will go into the City, it might be argued that the City will experience independent population growth—versus the currently projected decline—in addition to the County's projected population growth. In such a scenario, a complete reevaluation would be necessary for the approved Community Water Supply Plan, which currently relies on an assumption of a declining City population.

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<sup>xix</sup> US Census data; value represents total population per total “housing units,” not per “household” which is a measure only of occupied housing units.

<sup>xx</sup> According to the 2000 Census, in Charlottesville and Albemarle there were 51,311 Housing Units (DUs) with 48,727 occupied DU's. (Occupied Housing units are referred to as Households by the Census.) For all Housing Units, there was a 95% occupancy rate and a 5% vacancy rate. The 2.3 persons per Housing Unit (per DU) from the 2000 Census is a count of all units. Were the 17,832 units in the pipeline all built and 95% occupied, for the maximum 2026 population of 39,354 the projected 17,110 DUs needed would yield 16,264 OCCUPIED DUs; a ratio of 2.4 persons per Household; still lower than the County's 2000 rate of 2.5 persons per Household and the City's 2000 rate of 2.7 persons per Household. Therefore, while it was not intended as such, the calculations based on 2.3 persons per DU allow for an assumed level of vacancy for the proposed DUs in the pipeline.

<sup>xxi</sup> Albemarle County Development Activity reports

<sup>xxii</sup> From: ALBEMARLE COUNTY PLANNING COMMISSION – OCTOBER 18, 2005, Minutes

Page 8: Mr. Jones: “I have been on the Board of Supervisors for 18 years this year. . . . . But, zoning wise we did not have the accumulation of inbuilt [sic] lots that has been the pain for a lot of people. If you look at your neighbor in Green that is what has killed them. It was the lots that they created in the 60's and the 70's. If you look at Loudon [sic] County, in 1992 they had 125 people on the planning staff. They had a 6 million dollar planning budget. They had 60,000 people in the County. And yet they had created enough residential for another 40 million people. They had created and approved enough commercial that was bigger than metro Richmond. And he asked one of the planners, why you don't all just go home. You know just quit. If you don't do anything else you are looking at 300,000 people. You could save the 6 million dollars a year. Of course, they didn't and they are not. But, who knows how big they will get.”