Demand Analysis

Executive Summary

Due to the positive employment outlook for the region, the population in Charleston County is expected to grow more rapidly between now and 2020 compared to the previous decade. Understanding the impacts of the growth ahead positions the County to direct land use planning efforts most effectively.

A summary of population, housing, and employment growth estimates are presented below.

- Assuming an annual growth rate of 1.7%, Charleston County can reasonably expect 85,000 new residents during the projection period resulting in a 2020 population of 425,000.

- Based on the municipal population capture analysis, 70%, or 60,000 people, will live in the incorporated areas of the County, and 30%, or 25,000, will live in the unincorporated areas.

- In terms of population growth rates, an annual rate of 1.54% is expected for the municipalities; whereas, a relatively higher annual rate of 2.24% is projected for the unincorporated areas. However if annexation activity increases significantly, these estimates will shift accordingly.

- This population growth will stimulate housing demand in Charleston County. In total, the County will need approximately 42,000 new housing units by 2020. Growth in the municipalities will drive housing demand for 30,000 units. In the unincorporated areas, 12,000 new housing units are anticipated through 2020.

- Assuming product-type preferences are consistent with recent County trends, the majority of the new units, 30,000 or 70%, will be single-family residences. Within the municipalities approximately 21,000, or 69%, are expected to be single-family units. However, in the unincorporated areas, approximately 9,000, or 77%, are expected to be single-family homes.

- Although Charleston County's annual employment growth rate is projected to be 1.9%, our research indicates that the majority of the demand for new commercial square footage is likely to occur within the municipalities. However, a special land assemblage along with targeted economic development efforts could directly affect employment estimates for the unincorporated areas.

Introduction

The quantity and distribution of population and jobs in Charleston County will influence the potential land and service demands in the County over the years ahead. A critical step in updating the Comprehensive Plan for Charleston County is the development of population, housing, and employment forecasts for the planning period (2008 – 2020).

This report shares research and analysis designed to help the County assess potential growth, for land-use planning purposes, by developing projection scenarios which:

- Estimate the population and employment growth rates for Charleston County over the projection period

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- Estimate the population and employment growth expected in Charleston County's incorporated and unincorporated areas by:
    - Determining the municipal capture percentage of the projected countywide population growth
    - Determining the employment capture percentage of the projected countywide employment growth
    - Generating the net result which represents the projected population and employment growth estimate for the unincorporated portions of Charleston County

- Estimating housing unit demands for the incorporated and unincorporated portions of the County based on the assumed population growth rate and assessing future commercial square footage demands for the unincorporated areas

Ultimately, many factors will affect population and employment growth in the County – annexation, policy decisions, land use regulations, and market forces will all play a vital role in the County's future growth. As with any projections, this analysis should be revisited from time to time to determine its current applicability.

Regional Growth Trends

When contemplating Charleston County's growth forecast over the next decade, it is important to examine the County in relation to the growth anticipated for the entire region. According to the May 2007 article by AngelouEconomics, "Economic Development Opportunities for U.S. Mega-Regions," the Regional Plan Association, in its America2050 initiative, defined mega-regions as "large networks of metropolitan regions that are linked by environmental systems and geography, infrastructure systems, economic linkages, settlement patterns, and shared history and culture." The mega-regions include Cascadia, Florida, Great Lakes, Northeast, Northern California, Piedmont Atlantic, and Southern California. Over the next 45 years, "U.S. mega-regions will account for 50% of the nation's population growth and 66% of the economic growth." As such, these seven regions will experience more pronounced growth than other parts of the country.

In the recent publication, "Emerging MegaRegions: Studying the Southeastern United States," Georgia Tech's Center for Quality Growth and Regional Development (CQGRD) describes the core metropolitan areas within Piedmont Atlantic Mega-Region (PAM) as being characterized by the greatest density of people and highest intensity of travel and economic interaction. The core areas consist of Birmingham, Atlanta, Charlotte, and Raleigh-Durham. Major gateway cities include the sea port cities of Charleston, Savannah, Jacksonville, and Mobile as well as major rail and airport cities like Nashville and Atlanta. CQGRD estimates the population in PAM will grow by 68% in the next five decades, from 34 million people in 2000 to more than 57.2 million in 2050.

Annual population growth rates for key areas within PAM are shown in the graph below. As illustrated, the Charleston area has not grown as rapidly since 1970 as other areas within PAM. For example, Charlotte, Raleigh, and Atlanta have experienced higher levels of sustained growth since the 1970's. However looking ahead, the Charleston-North Charleston MSA, which includes Charleston, Dorchester and Berkeley Counties, is expected to be one of PAM's fastest growing subareas. The positive economic outlook for PAM, in terms of employment opportunities, suggests that population forecasts for the region's subareas should factor in the likelihood of net in-migration.

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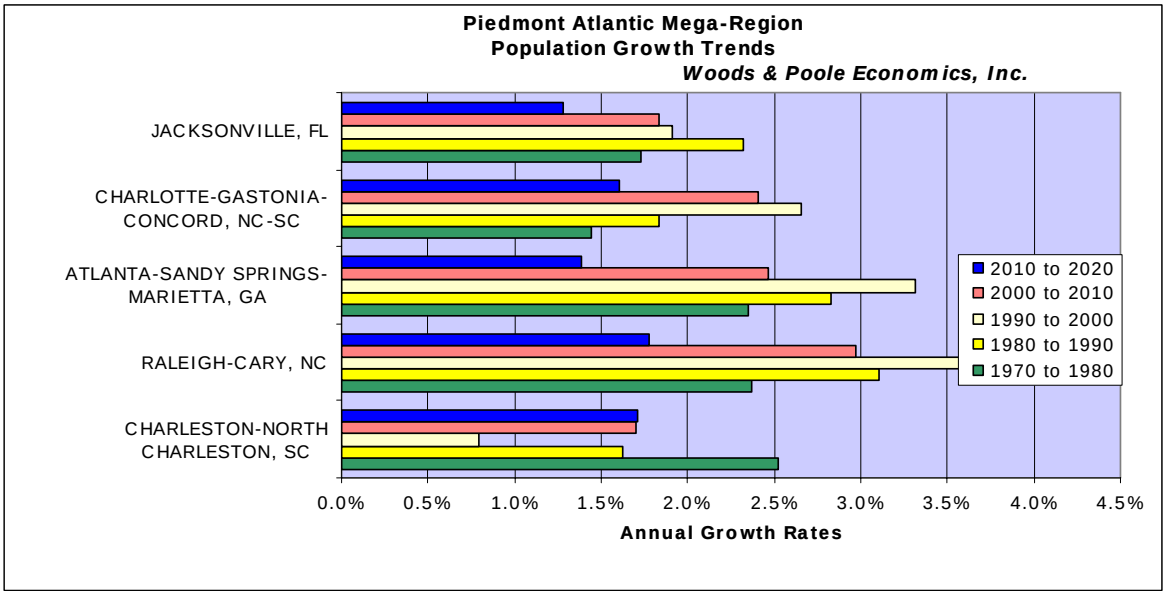

Piedmont Atlantic Mega-Region Population	1980	1990	2000	2010	2020
Jacksonville, FL	741,000	932,000	1,126,000	1,351,000	1,534,000
Charlotte-Gastonia-Concord, NC-SC	859,000	1,031,000	1,340,000	1,701,000	1,993,000
Atlanta-Sandy Springs-Marietta, GA	2,340,000	3,091,000	4,282,000	5,462,000	6,268,000
Raleigh-Cary, NC	404,000	549,000	804,000	1,078,000	1,285,000
Charleston-North Charleston, SC	433,000	509,000	551,000	652,000	772,000

In Table 1 and the accompanying graphs below, annual historical and projected growth rates for Charleston County are compared to Dorchester and Berkeley Counties as well as other S.C. coastal counties. Horry and Beaufort Counties are expected to continue growing at the historical pace and will likely grow more rapidly than the Dorchester-Charleston-Berkeley area.

As illustrated in Table 1, annual growth rates must be evaluated in context with the population base. For example, Charleston County is expected to grow by 69,000 people during 2010 to 2020 at a growth rate of 1.8%. Whereas, the much smaller Berkeley County is expect to grow more rapidly at 2.2% over the same decade with an increase in population of 42,000.

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Table 1

Charleston County, SC

South Carolina County Population Comparisons

	Population				
	1980	**1990**	**2000**	**2010**	**2020**
Tri County Area - Counties					
Dorchester, SC	60,000	84,000	97,000	123,000	133,000
Berkeley, SC	96,000	129,000	143,000	169,000	211,000
Charleston, SC	**278,000**	**296,000**	**311,000**	**360,000**	**429,000**
SC Coastal Counties					
Horry, SC	102,000	145,000	198,000	267,000	339,000
Beaufort, SC	66,000	87,000	122,000	161,000	209,000
Georgetown, SC	43,000	47,000	56,000	64,000	73,000
Colleton, SC	32,000	35,000	38,000	41,000	44,000
Charleston, SC	**278,000**	**296,000**	**311,000**	**360,000**	**429,000**

	Annual Population Growth Rates				
	1970 To 1980	**1980 to 1990**	**1990 to 2000**	**2000 to 2010**	**2010 to 2020**
Tri County Area - Counties					
Dorchester, SC	6.2%	3.5%	1.4%	2.4%	0.8%
Berkeley, SC	5.4%	3.1%	1.0%	1.7%	2.2%
Charleston, SC	**1.1%**	**0.6%**	**0.5%**	**1.5%**	**1.8%**
SC Coastal Counties					
Horry, SC	3.7%	3.5%	3.2%	3.0%	2.4%
Beaufort, SC	2.5%	2.8%	3.4%	2.8%	2.6%
Georgetown, SC	2.4%	0.9%	1.9%	1.4%	1.3%
Colleton, SC	1.4%	0.8%	1.1%	0.6%	0.8%
Charleston, SC	**1.1%**	**0.6%**	**0.5%**	**1.5%**	**1.8%**

Georgia Tech CQGRD January 2006 and Woods & Poole Economics, Inc.

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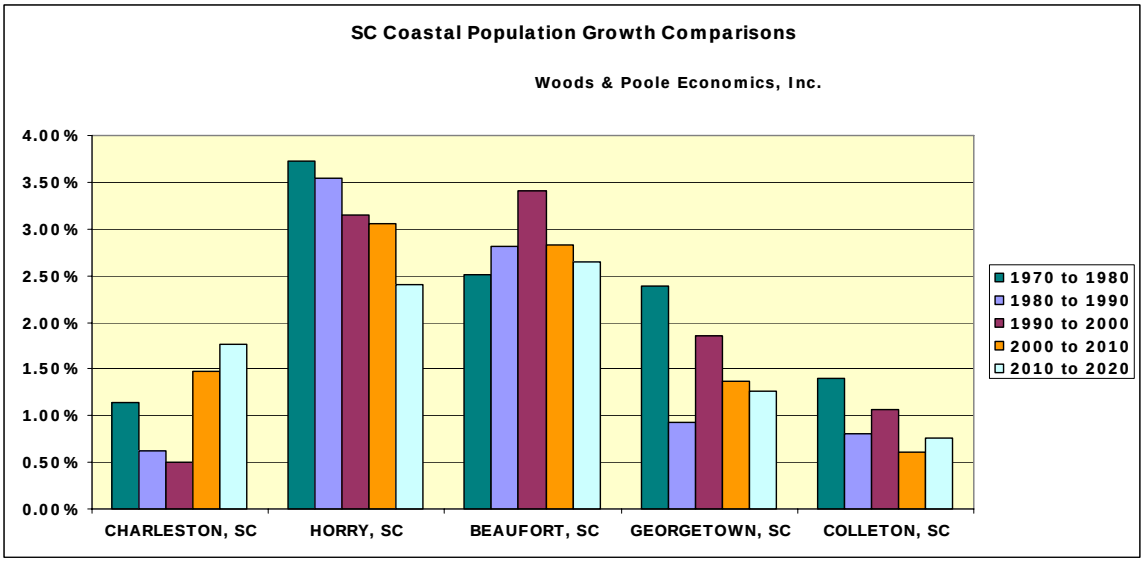

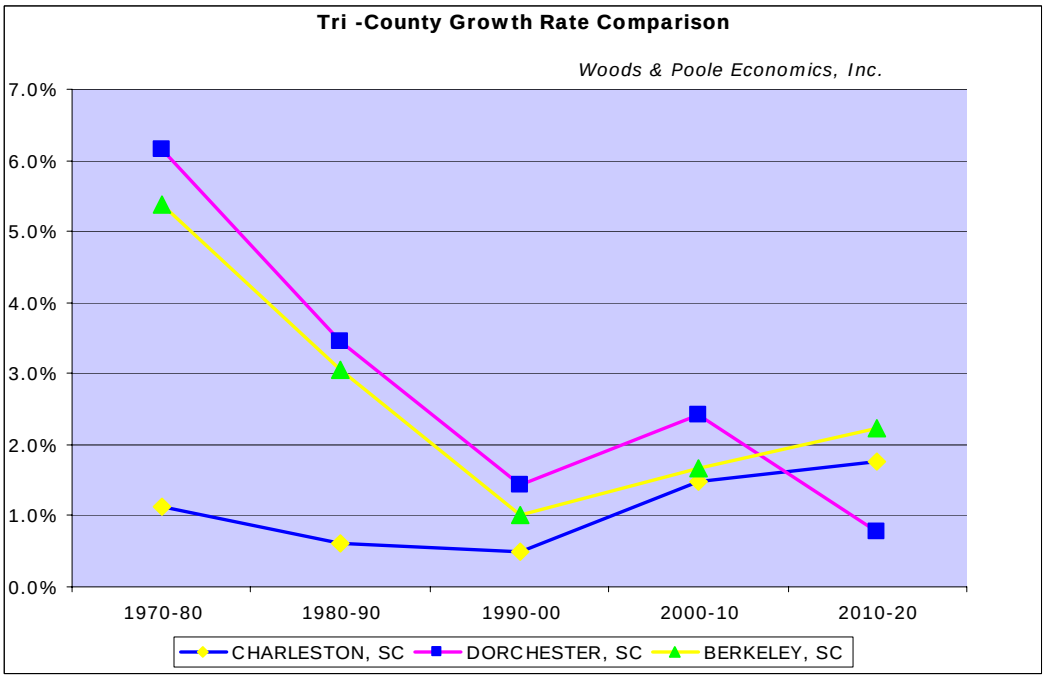

Population

Assembling population estimates to support Charleston County's comprehensive planning process prompts several challenging questions. Seven years have elapsed since the 2000 Census, so what source(s) provide the best estimate for the population in the County today? How are municipal boundaries, that reflect the most recent annexations, taken into account in estimating the population in the County's municipalities today? What growth forecasts explicitly address in-migration for employment opportunities? Growth variables for the

unincorporated and incorporated portions of the County may be different – how are those variables addressed? To assist in tackling these issues, we compiled data from:

- Berkeley-Charleston-Dorchester Council of Governments (BCDCOG)
- Charleston Metro Chamber of Commerce
- Charleston Regional Development Alliance (CRDA)
- S.C. Office of Research and Statistics (ORS)
- S.C. Employment Security Commission
- S.C. Department of Commerce
- S.C. Department of Labor
- U.S. Bureau of Labor Statistics (BLS)
- U.S. Bureau of Economic Analysis (BEA)
- Woods & Poole Economics, Inc.
- ESRI

Although useful for baseline comparisons, county-level population forecasts prepared by the ORS and U.S. Census are more time-series oriented and do not provide detailed assumptions for underlying the variables. Based on research performed on the region's projected growth, we determined that the econometric model used by Woods & Poole Economics, Inc. (W&P) would be very useful in this analysis. W&P produces a well-respected database containing more than 900 economic and demographic variables for every county in the U.S. for every year from 1970 to 2030. Regional projection techniques are used by W&P to link counties together to capture regional flows and constrain the results to a projected U.S. control total. This methodology avoids common pitfalls in regional projections. In fact, after extensive research of competing models, the National Oceanic and Atmospheric Administration (NOAA) chose W&P as the data source for their population forecasts in the *Coastal Trends Report Serie*s because of the conservatism integrated into the W&P approach.

W&P generates county projections in a four-stage process. First, forecasts to 2030 of total U.S. personal income, earnings by industry, employment by industry, population, inflation and other variables are made. Next, the country is divided by 179 Economic Areas (EAs) as defined by the U.S. Department of Commerce, BEA. For each EA, a projection is made for employment using an "export-base" approach. These employment projections are then used to estimate earnings in each EA. The employment and earnings projections become the principal explanatory variables to estimate population and households in each EA. During the third stage, the population for each EA is projected by age, sex and race based on net migration rates projected from employment opportunities. For steps two and three, the U.S. projection is the control total for the EA projections. Step four replicates the process for steps two and three except the analysis is performed at the county level using EAs as the control total.

Selecting a credible data source for spatially generated, small area population forecasts was also necessary since determining appropriate municipal population and employment capture ratios, based on current municipal boundaries, are key assumptions in the demand analysis. ESRI, founded in 1969 as Environmental Systems Research Institute, Inc., is a privately held consulting firm that specializes in land-use analysis projects. Using the ESRI database, current estimates and five-year demographic projections can be obtained for states; census tracks; places; county subdivisions; ZIP codes; DMAs; or any user-defined site, circle or polygon.

To build the demographic reports, ESRI uses the center of each Census block as the base level of analysis to integrate spatiality into the model. To measure the population change by block group, ESRI models the change in households from three primary sources: InfoBase database from Acxiom Corporation; residential delivery statistics from the U.S. postal service, and

residential construction data from Hanley Wood Market Intelligence. The ESRI housing unit methodology applies the change in households estimated from address counts, delivery counts, and new housing construction to update household population by block group. The spatial features of the ESRI software allow for the uploading of current municipal boundary, "shape", files which establish the custom geography needed to retrieve population estimates and projections reflecting the most recent municipal annexations. Other data sources, which are not spatially oriented, would most likely reflect population forecasts derived from municipal boundaries in place for the 2000 Census.

Once the data sources were researched and selected and the necessary data was collected, the projection model and scenarios were created through the following steps.

Step 1 – Estimate Charleston County Population in 2007

Determining the best estimate of the population in Charleston County today was the first step in the analysis. The most recent population estimate published by the ORS is 331,917 which was prepared by the Bureau of the Census based on 2006 post-Censal estimates. However, W&P and ESRI published the following County population estimates for 2007:

Table 2
2007 Charleston County Population Estimates

ESRI	345,447
W&P	339,516

Based on the difference between the estimates, further analysis was performed in Table 3 to assess which provides the better estimate. Since W&P estimates the number of households but not the number of housing units, a housing unit estimate was needed to properly evaluate the W&P result. Because Charleston County cannot extract the inventory of housing stock from either its GIS or ad valorem tax database, the housing unit total provided by ESRI was assumed to be representative of the actual count.

Table 3
2007 Charleston County Population Comparisons

	ESRI	W&P
2007 Housing Units	164,011	164,011
Vacancy Rate (W&P imputed)	13.3%	15.16%
2007 Households	142,198	139,147
Persons Per Household	2.34	2.35
Household Population	332,742	326,995
Group Quarters – Estimated	12,705	12,521
2007 Population	345,447	339,516

Closer analysis of the vacancy rate trends reveals the implied W&P vacancy rate estimate is probably more reflective of the current real estate downturn. This assumption is consistent with the fact that the W&P model includes historical data for population through 2006 whereas the historical data included in the ESRI model is through 2005.

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Table 4
Charleston County Vacancy Rates
Source: American Community Survey

	2006	2005	2004	2003	2002	2001
For rent	20%	22%	31%	32%	24%	29%
Rent, not occupied	6%	8%	0%	0%	0%	0%
For sale only	15%	8%	6%	7%	13%	8%
Sold, not occupied	3%	3%	5%	5%	0%	0%
For seasonal, recreational or occasional use	31%	27%	39%	42%	39%	36%
Other vacant	24%	31%	19%	14%	24%	27%
Total vacant units	100%	100%	100%	100%	100%	100%
Vacancy rate	17%	15%	16%	17%	13%	10%

With the 2007 population estimate for Charleston County established at 339,516, we move on to Step 2.

Step 2 – Determine Annual Countywide Population Growth Rate

Our research reveals a fairly wide range of annual growth rates for Charleston County as seen in Table 5.

Table 5
Comparison of Annual Population Growth Rate Estimates for Charleston County

Data Sources	Projection Period	Annual Growth Rate	2008-2020 New Population Growth
U.S. Census	1990 to 2000	0.49%	22,502
S.C. Office of Research & Statistics	2006 to 2020	0.51%	23,302
BCDCOG	2003 to 2010	1.09%	51,313
ESRI - 2007 to 2012 Forecasts	2000 to 2007	1.42%	68,427
ESRI - 2007 to 2012 Forecasts	2007 to 2012	1.26%	60,018
ESRI - 2007 to 2012 Forecasts	2000 to 2012	1.35%	64,748
Woods & Poole Economics, Inc.	2000 to 2010	1.47%	71,105
Woods & Poole Economics, Inc.	2010 to 2015	1.83%	90,447
Woods & Poole Economics, Inc.	2010 to 2020	1.77%	86,908
Woods & Poole Economics, Inc.	2007 to 2020	1.81%	89,058

In reviewing the results, it appears estimating the County's population for the projection horizon based on (1) growth over the last decade of 0.49% (U.S. Census), or (2) by applying the ORS growth rate of 0.51% would most likely understate the County's future population. Both of these percentages are probably skewed by the impacts of the Charleston Naval Base closure in the mid-1990's.

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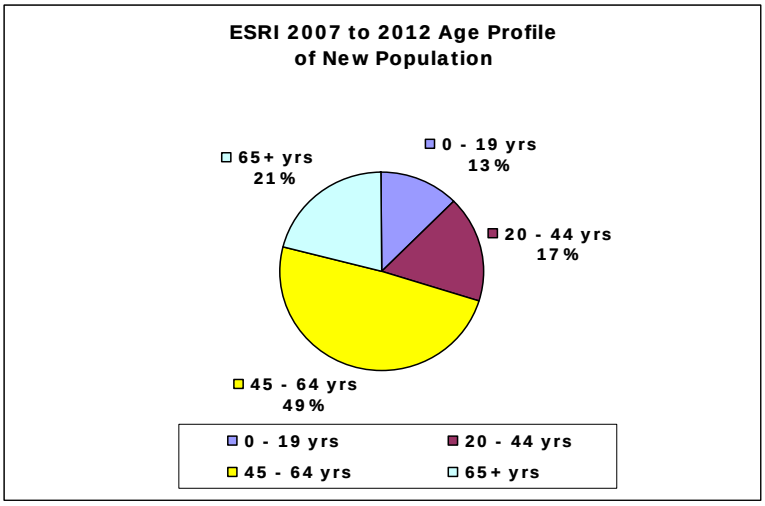
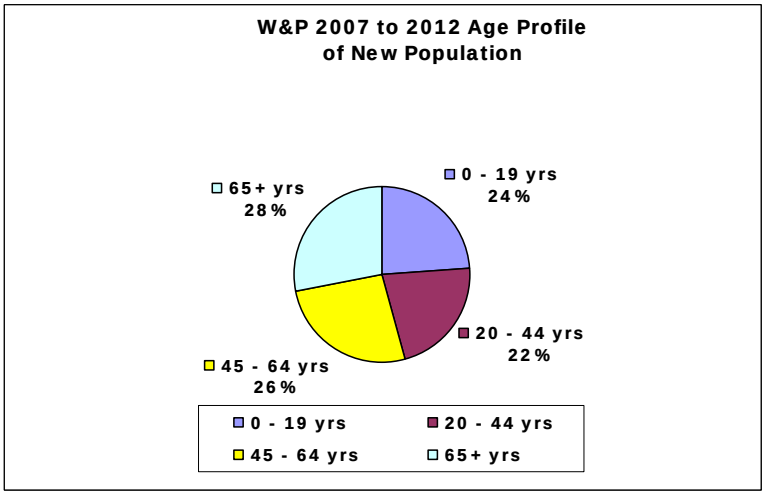
Consultants for the BCDCOG have just begun the demographic study which will update the tri-county projections. So we ruled out using the 1.09% annual growth rate since new rates will be established in upcoming months. Therefore, two data sources remained for further analysis – ESRI and W&P.

To better understand the assumptions contained in the models, we first compared the age profile of the new population expected in Charleston County as illustrated in the graphs below. The ESRI model predicts a lower growth rate more heavily weighted in the middle-age segment; whereas, W&P assumes a higher growth rate more evenly distributed amongst all age segments.



ESRI Annual Growth Rate 2007 – 2012 1.26%



W&P Annual Growth Rate 2007 – 2012 1.91%

Table 6 compares the ethnicity profiles of the new population. W&P is predicting a significantly higher increase in the White population (19,818) than forecasted by ESRI (9,018). This 10,000 person variation accounts for the majority of the difference in the results.

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Table 6
Comparison of ESRI and W&P Ethnicity Growth Projections

ESRI	2007 Change	2007 -2012 Change	2007 -2012 Change
White Alone	9,018	40.6%	41%
Black Alone	8,496	38.2%	38%
American Indian Alone	434	2.0%	
Asian Pacific Islander Alone	1,459	6.6%	
Some Other Race Alone	1,782	8.0%	
Two or More Races	1,047	4.7%	21%
	22,237	100.0%	100%
W&P	**2007 Change**	**2007 -2012 Change**	**2007 -2012 Change**
White	19,818	58.8%	59%
Black	9,557	28.4%	28%
Native American	28	0.1%	
Asian/Pacific Islander	858	2.5%	
Hispanic	3,442	10.2%	13%
	33,703	100.0%	100%

As previously described, the age and ethnicity growth assumptions in the W&P econometric projection model are intrinsically linked to employment projections, so we evaluated the profiles from the two models in light of employment forecasts for Charleston County.

Historical and projected (W&P) annual employment growth rates for the U.S., South Carolina, Dorchester-Berkeley-Charleston Counties, and Charleston County are detailed in Table 7. The W&P model reflects sustained job growth for Charleston County over the next 13 years. The model predicts particularly strong performance in the services sector. Based on data from the BEA and W&P, of the 37,000 new jobs generated in the County from 2000 – 2007, approximately 20,000, or 54%, were in the services sector. Although job growth is expected in manufacturing and other sectors, the service sector will remain strong.

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Table 7
Annual Employment Growth

	U.S.	S.C.	Dorchester-Charleston-Berkeley Counties	Charleston County
1970-80	2.3%	2.5%	3.3%	2.6%
1980-90	2.0%	2.3%	3.3%	3.1%
1990-00	1.8%	1.8%	1.1%	0.7%
2000-10*	1.2%	1.2%	2.3%	2.0%
2010-20*	1.4%	1.6%	1.9%	1.9%

**Woods & Poole Economics, Inc.*

Because anticipated job growth is clearly important to population projections, we considered these rates in relation to studies performed by the Charleston Metro Chamber, the CRDA and the S.C. Employment Security Commission. On December 2007, the Berkeley-Charleston-Dorchester Council of Government reported that 186,000 new jobs are expected in the tri-county region between now and 2030. The W&P model projects 189,000 new jobs for Dorchester, Charleston and Berkeley Counties thereby indicating job growth estimates through 2030 from local sources are comparable to those of W&P. In the 2004 – 2014 biannual jobs forecast prepared by the S.C. Employment Security Commission, annual employment will grow by 1.5% across the state. It is appropriate to assume the employment growth rate for Charleston County will exceed the state average.

Based on the reasonableness of the employment projections, we determined an annual population growth rate closer to the W&P longer term range was more realistic than the five-year ESRI projection. After a final comprehensive review of data from all sources, we recommend using an annual population growth rate of 1.7% for Charleston County for the 2008 – 2020 planning period.

Applying an annual growth rate of 1.7% to the estimated 2007 population of 339,516 results in over 83,000 new Charleston County residents by 2020. Table 8 reflects the annual population changes.

Table 8
Charleston County Population 2007 - 2020
Assuming Annual Growth Rate of 1.7%

	Population	Annual Growth	Cumulative Growth
2007	339,516		
2008	345,288	5,772	5,772
2009	351,158	5,870	11,642
2010	357,127	5,970	17,611
2011	363,199	6,071	23,683
2012	369,373	6,174	29,857
2013	375,652	6,279	36,136
2014	382,038	6,386	42,522
2015	388,533	6,495	49,017
2016	395,138	6,605	55,622
2017	401,855	6,717	62,339
2018	408,687	6,832	69,171
2019	415,635	6,948	76,119
2020	422,700	7,066	83,184

Step 3 – Determine Municipal Capture Percentage of Countywide Population Growth

Since the County's land-use planning efforts are primarily directed towards the unincorporated portions of the County, the next step in the analysis focuses on the proportion the incorporated areas will grow relative to the unincorporated areas. Since the 1970's, municipalities within Charleston County have experienced not only natural population growth but also substantial growth from the expansion of municipal boundaries by annexation. For example, in 1972 North Charleston had an area of 7 square miles. Today, North Charleston encompasses more than 73 square miles. Similarly, the physical size of Charleston increased from 16.7 square miles in 1975 to almost 104 square miles today.

Table 9 reflects the remarkable population shifts created by annexation policies over the last 30 years. The historical data implies annexation activity peaked in the 1990's with incorporated/unincorporated capture ratios of 298%/-198% (1990 – 2000). From 2000 to 2007, the capture ratio dramatically declined to 66%/34% indicating population growth via annexation slowed considerably. Accordingly, net population gains resulted in the unincorporated areas of the County. It is important to note the ratio for 2000 – 2007 is based on the actual municipal boundaries in place during 2007, a distinct advantage of a spatial projection model. Based on the uploaded 2007 boundary files, the ESRI model predicts the capture ratio to settle at 70%/30% during 2007 to 2012.

The complete analysis supporting Table 9 was shared with the County's Planning Department. Based on our discussions, these trends fairly represent the growth patterns experienced in the County over the stated time frame. Furthermore, the 70%/30% municipal capture ratio appears reasonable assuming relative stability in future annexation policies by the municipalities. However, aggressive shifts in policy will materially affect future capture ratios.

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Table 9
Municipal Population Capture Rates 1970 – 2012

Source:					
US Census:	**Population Growth**				
1970 -2000	**1970 to**	**1980 to**	**1990 to**	**2000 to**	**2007 to**
ESRI 2007 and 2012	**1980**	**1990**	**2000**	**2007**	**2012**
Charleston	6,812	6,657	18,477	6,835	5,063
Mount Pleasant	11,580	12,373	19,861	11,502	7,604
North Charleston	12,752	4,537	7,898	1,230	1,559
Isle of Palms	-	735	3,835	22	118
Other Incorporated	4,781	1,448	3,386	1,839	1,215
Incorp. County	35,925	25,750	53,457	21,428	15,561
Unincorp.County	(6,601)	(7,686)	(35,545)	11,072	6,627
Total Charleston County	29,324	18,064	17,912	32,500	22,188
	Capture	**Capture**	**Capture**	**Capture**	**Capture**
Charleston	23%	37%	103%	21%	23%
Mount Pleasant	39%	68%	111%	35%	34%
North Charleston	43%	25%	44%	4%	7%
Isle of Palms	0%	4%	21%	0%	1%
Other Incorp.	16%	8%	19%	6%	5%
Incorp. County	**123%**	**143%**	**298%**	**66%**	**70%**
Unincorp. County	**-23%**	**-43%**	**-198%**	**34%**	**30%**

For this analysis, the projection model will assume a municipal population capture ratio of 70%/30%.

Step 4 – Apply Growth Rate and Municipal Capture Rate

In the final step of the population projection portion of the model, the annual growth rate of 1.7% and the municipal capture ratio of 70%/30% are applied to estimate the growth expected in the municipalities and the unincorporated areas of Charleston County.

Table 10 reveals the County is expected to grow by 83,000 people from 2008 to 2020. Approximately, 58,000 new residents will live in the municipalities, and the remaining 25,000 will reside in the unincorporated areas.

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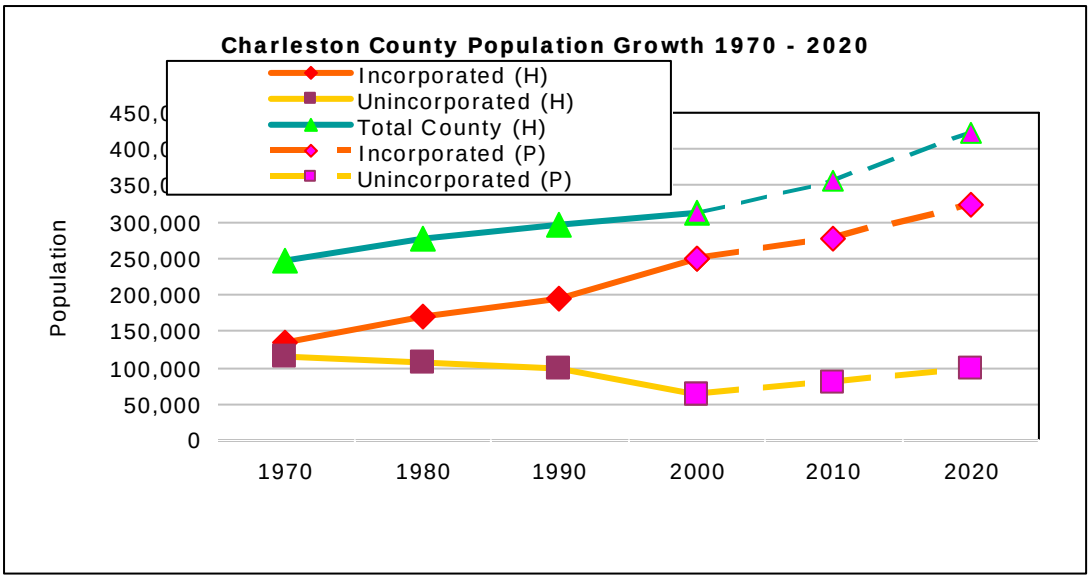
Table 10
Charleston County Incorporated-Unincorporated Population Projections
Key Assumptions: 1.7% Annual Growth Rate and 70%/30% Municipal Capture Ratio

	Incorporated			Unincorporated			Countywide		
	Pop.	At 70% of Total	Annual Growth Rate %	Pop.	At 30% of Total	Annual Growth %	100% Total Pop.	Annual Change 100%	Annual Growth %
2007	264,944			74,572			339,516		
2008	268,992	4,048	1.53%	76,296	1,724	2.31%	345,288	5,772	1.70%
2009	273,108	4,117	1.53%	78,049	1,753	2.30%	351,158	5,870	1.70%
2010	277,295	4,187	1.53%	79,832	1,783	2.28%	357,127	5,970	1.70%
2011	281,553	4,258	1.54%	81,646	1,813	2.27%	363,199	6,071	1.70%
2012	285,883	4,330	1.54%	83,490	1,844	2.26%	369,373	6,174	1.70%
2013	290,287	4,404	1.54%	85,366	1,876	2.25%	375,652	6,279	1.70%
2014	294,765	4,479	1.54%	87,273	1,907	2.23%	382,038	6,386	1.70%
2015	299,320	4,555	1.55%	89,213	1,940	2.22%	388,533	6,495	1.70%
2016	303,952	4,632	1.55%	91,186	1,973	2.21%	395,138	6,605	1.70%
2017	308,663	4,711	1.55%	93,192	2,006	2.20%	401,855	6,717	1.70%
2018	313,454	4,791	1.55%	95,233	2,041	2.19%	408,687	6,832	1.70%
2019	318,327	4,872	1.55%	97,308	2,075	2.18%	415,635	6,948	1.70%
2020	323,282	4,955	1.56%	99,418	2,110	2.17%	422,700	7,066	1.70%
	Total	**58,338**	**1.54%**	**Total**	**24,846**	**2.24%**	**Total**	**83,184**	**1.70%**

The graph below visually reflects the impacts of these projection assumptions. By modifying the future trend lines, it is easy to see the sensitivity of the population distribution to annexation assumptions.

Demand Analysis



(H)-Historic Trend
(P)-Projected Growth

Housing Unit Demand

This report assumes the demand for future housing units is dependent on the population projection shown in Table 10. The analysis which follows estimates the number of single-family, multi-family, and mobile homes demanded by the projected growth in the County's population. The model also goes a step further and estimates the housing unit demand, by housing type, in the incorporated and unincorporated areas of the County. Understanding the future housing unit demand in the unincorporated areas is a focal point for the County's land-use planning.

Step 1 – Apply Annual Population and Municipal Capture Assumptions 2008 - 2020

As with the population projections, the housing unit demand analysis proceeds in a series of steps. In Table 11, the analysis begins with the 2007 County population and extends the growth over time by applying the 1.7% annual growth rate and 70%/30% municipal capture ratio. However, these assumptions pertain solely to the population in households. To properly estimate housing unit demand, the population in group quarters (GQ) must be separately considered.

Step 2 – Estimate Group Quarters Population 2008 - 2020

The group quarters population consists of individuals living in retirement homes, college dormitories, military quarters and prisons. The Charleston Naval Base closure significantly impacted the Charleston County GQ population during the 1990's. Time series analysis would tend to understate the County's GQ population over time if the military rate was not separately considered. We compared the County's GQ population of 11,398 (2000 Census) to the GQ population estimate in the 2006 American Community Survey of 13,217 to compute an annual GQ growth rate of 2.5%. As reported in the 2000 Census, approximately 98% of the GQ population lived in Charleston, North Charleston and Mount Pleasant. Since it is unlikely

the distribution of the GQ population has changed significantly, 100% of the GQ population is assigned to the municipalities for purposes of this analysis. In addition, Table 11 reflects the annual GQ growth rate of 2.5%. The result is a slightly higher increase in total County population over the projection period. Consequently, the countywide population is expected to grow by a total of 85,000 after considering the GQ population.

Step 3 – Develop Vacancy Rate Assumptions 2008 - 2020

Once the population in households was determined, assumptions regarding vacancy rates and persons per household are necessary. The vacancy rate in the incorporated areas will be higher than that of the unincorporated areas due to the seasonal housing stock. Based on six-year historical trends, a countywide vacancy rate of 14.5% is assumed. Using the ESRI database, a 15.8% vacancy rate is projected for the municipalities, and a 9.7% rate is projected for the unincorporated areas. Persons per household are based on W&P estimates which reflect the national trend of declining household sizes due to the aging population and general changes in family structure. As expected, persons per household in the unincorporated areas are slightly higher than in the municipalities because the housing stock includes a higher percentage of single-family homes.

Step 4 – Calculate Housing Unit Demand 2008 - 2020

As noted in the table, the 2007 housing unit totals are derived from ESRI. Housing unit demand for 2008 to 2020 is calculated through an imputation process that allocates the projected household population to households based on estimates of persons per household and applies vacancy rates to derive total housing units. Approximately 42,300 new housing units are expected in the County through 2020.

A similar calculation is performed to estimate the unit demand in the municipalities and unincorporated areas with the countywide results as the control totals. Of the 42,300 new housing units demanded, 30,300 are projected for the municipalities and 12,000 for the unincorporated areas.

Step 5 – Calculate Housing Unit Demand By Product Type 2008 - 2020

In the next step, the housing unit demand is allocated to various product types assuming future demand will be consistent with single- and multi-family building and mobile home permit data collected from 2001 to second quarter 2007 (which represents the extent of data available for the County and its municipalities). Countywide, approximately 70% of housing unit demand will be single-family, 24% will be multi-family and 6% will be mobile homes. Product demand in the incorporated areas will be similar with 69% single family, 28% multi-family and 3% mobile homes. In the unincorporated areas, a higher level of single family homes will be demanded (77%). The multi-family demand will be 5%, and mobile home demand will be 18%.

Demand Analysis

Table 11
Charleston County Housing Unit Demand Analysis

Annual County-Wide Population in Households Growth Rate	1.70%
Annual County-Wide Group Quarters Annual Growth Rate	2.50%

	Capture	2007	2008 - 2010	2011 - 2015	2016 - 2020	2008 - 2020
County Population	100%	339,516	357,466	389,534	424,505	424,505
Growth			*17,950*	*32,068*	*34,971*	*84,989*
Incorporated Population	70%	264,977	277,542	299,990	324,470	324,470
Growth			*12,565*	*22,448*	*24,480*	*59,493*
Unincorporated Population	30%	74,539	79,923	89,544	100,035	100,035
Growth			*5,385*	*9,620*	*10,491*	*25,497*
Countywide						
County Population		339,516	357,466	389,534	424,505	424,505
Population in Group Quarters*		13,547	14,588	16,504	18,671	18,671
Population in Households		325,969	342,877	373,030	405,834	405,834
Housing Units (2007 ESRI) (2008 - 2020 Imputed)		164,066	172,092	188,847	206,347	206,347
Vacancy Rate (2008-2020 ACS 6 Year Avg)		15.5%	14.5%	14.5%	14.5%	14.5%
Households (2008-2020 Imputed)		138,710	147,158	161,485	176,450	176,450
Persons Per Household (W&P)		2.35	2.33	2.31	2.30	2.30
New Housing Units			8,026	16,755	17,500	42,281
SF-MF Allocation Based on 2001 - QTR2 2007 Building Permits						
New SF Housing Units	70.0%		5,618	11,729	12,251	29,598
New MH Housing Units	5.7%		460	960	1,002	2,422
New MF Housing Units	24.3%		1,948	4,066	4,247	10,260
Incorporated						
Incorporated Population		264,977	277,542	299,990	324,470	324,470
Population in Group Quarters*		13,547	14,588	16,504	18,671	18,671
Population in Households		251,430	262,954	283,486	305,799	305,799
Housing Units (2007 ESRI)		131,020	136,623	148,764	161,373	161,373
Vacancy Rate (2008-2020 6 Yr Avg)		16.7%	15.7%	15.8%	15.8%	15.8%
Incorporated Households		109,080	115,115	125,274	135,820	135,820
Persons Per Household – Imputed (2007 agrees to 2007 ESRI)		2.305	2.28	2.26	2.25	2.25
New Housing Units			5,602	12,141	12,609	30,353
SF-MF Allocation Based on 2001 - QTR2 2007 Building Permits						
New SF Housing Units	68.5%		3,836	8,312	8,633	20,781
New MH Housing Units	3.2%		179	388	403	969
New MF Housing Units	28.3%		1,588	3,441	3,574	8,603

Demand Analysis

Table 11 - Continued
Charleston County Housing Unit Demand Analysis

Annual County-Wide Population in Households Growth Rate	1.70%
Annual County-Wide Group Quarters Annual Growth Rate	2.50%

		2007	2008 - 2010	2011 - 2015	2016 - 2020	2008 - 2020
Unincorporated						
Unincorporated Population		74,539	79,923	89,544	100,035	100,035
Population in Group Quarters*		-	-	-	-	-
Population in Households		74,539	79,923	89,544	100,035	100,035
Housing Units (2007 ESRI)		33,046	35,469	40,083	44,974	44,974
Vacancy Rate (2008-2020 6 Yr Avg)		10.3%	9.7%	9.7%	9.7%	9.7%
Unincorporated Households		29,630	32,043	36,211	40,629	40,629
Persons Per Household - Imputed (2007 agrees to 2007 ESRI)		2.516	2.49	2.47	2.46	2.46
New Housing Units			2,423	4,614	4,891	11,928
SF-MF Allocation Based on 2001 - QTR2 2007 Building Permits						
New SF Housing Units	77.1%		1,869	3,558	3,772	9,200
New MH Housing Units	17.5%		423	805	854	2,082
New MF Housing Units	5.4%		131	250	265	646

Commercial Square Footage Demand

No current data is available delineating the number of employees working in unincorporated areas versus the municipalities; therefore, alternative data sources were used to draw some conclusions about future square footage demands.

The U.S. Department of Transportation Bureau of Transportation Statistics produces a decennial Census Transportation Planning Package (CTPP). From the special tabulations contained in the database, information about workers by place of work can be extracted. Other Census tabulations are limited to providing information about workers by place of residence. Table 12 reflects the results. Estimates of workers in 1990 for certain municipalities were inferred based on 2000 relationships since 1990 Summary File 3 (SF3) data was not readily available.

Based on this data, the municipal employment capture ratio grew from 81%/19% in 1990 to 90%/10% in 2000. This increase makes sense on several fronts: annexation, the Charleston Naval Base closure, economic development recruitment, etc.

Historical building permit data provided by Charleston County reveals a ratio of 92%/8% - relatively consistent with the findings above. Based on these ratios, the municipalities are likely to capture the majority of future employment growth and the accompanying commercial square footage demand. Based on these trends, relatively low rates of commercial square footage will be demanded in the unincorporated areas. However, a special land assemblage along with targeted economic development efforts in unincorporated areas could directly affect these demand estimates.

Table 12
Workers By Place of Work – CTPP 2000 and CTPP 1990

Incorporated:	2000 Workers		1990 Workers	
CTPP National Tabulations				
(Population > 2,500) - All Workers by Place of Work				
City of Charleston	77,620		77,174	
Hollywood	760		-	
Isle of Palms	1,750		1,327	
Mount Pleasant	18,810		10,875	
North Charleston	66,390		64,553	
	165,330		153,929	
Census 2000 SF3				
Working In Place of Residence - As Proxy				
Proxy of All Workers by Place of Work				
Awendaw	41			
Folly Beach	210			
Kiawah Island	123			
Lincolnville	11			
McClellanville	66			
Meggett	55			
Ravenel	81			
Rockville	8			
Seabrook Island	132			
Sullivan's Island	164			
	891	0.54%	*830*	*0.54%*
		2000 Capture %		**1990 Capture %**
Total Incorporated Charleston County	166,221	90%	154,759	81%
Estimated Unincorporated Charleston County	*18,144*	*10%*	*36,244*	*19%*
Total Charleston County	184,365	100%	191,003	100%