

## BASIS FOR PROJECTIONS

This section of the *Comprehensive Plan* applies the trends from Section 310 to project the Daviess County work force as well as jobs to the years 2010, 2020, and 2030. The primary purpose of these projections is to assure that adequate acreage is provided in the land use plan to accommodate the future needs of existing and new businesses, industries, and workers.

## WORK FORCE & TOTAL EMPLOYMENT PROJECTIONS

The labor force participation rate gradually increased between 1970 and 1990. During the 1990s the rate held relatively constant at approximately 65%. Historically, persons in the 16-24 and 65+ age cohorts have participated in the labor force to a lesser degree than 25-64 year olds. Also, some females choose not to work for child rearing or other reasons. Therefore, 70% appears to be a reasonable cap on the labor force participation rate for the purposes of our economic forecasting.

Exhibit 321-T1 provides estimates of the projected work force and total employment for Daviess County through the year 2030. The projections are based on over 16 population projections from the KY State Data Center, an assumed 70% participation rate and a 5% unemployment rate. The unemployment rate is derived from an average of the last five years and could substantially increase or decline in the projected time period. The Daviess County work force is forecast to increase by 18% by 2030.

The shaded items in the table provide forecasts for population and total employment for Daviess County, by Woods & Poole Economics, Inc., an economics consulting firm in Washington, D.C. Woods & Poole has developed a model that projects population and economic indicators for U.S. regions, states and metropolitan statistical areas. There are significant differences between the projections of this plan and those of Woods & Poole.

The differences arise in several factors, including:

- ◆ Higher labor force participation rates by Woods & Poole ;
- ◆ Higher population projections (16 and older) for the community by Woods & Poole;
- ◆ Daviess County is the smallest unit of analysis in the Woods & Poole projections and thus must fit into the controls established at other levels of the hierarchy (state, region, and U.S.).

The purpose of including the Woods & Poole projections is to show a possible range for our work force and employment, as well as to serve as a check. By viewing the Woods & Poole projections as a maximum and this plan's projections as a minimum, adequate land use acreages can be projected for the Land Use Plan.

## PROJECTIONS FOR THE 3 COMPONENTS OF THE CLF

As discussed above, the civilian labor force (CLF) comprises the number of workers employed in non-agricultural wage and salary industries, workers employed in either agricultural or other pursuits, and the unemployed. By applying a 5% unemployment rate to the CLF and assuming that non-

agricultural employment will capture the same 98% of total employment as it did in 2004, we project each component of the CLF. This method will yield projections that may be somewhat high since 5% unemployment and 98% of all jobs going to the non-agricultural sector may not be sustained.

**Exhibit 321-T1: Forecast of Civilian Labor Force Components**

PROJECTIONS			
	2010	2020	2030
Pop. 16+	74,454	79,571	82,829
Partic. Rate (%)	70.0	70.0	70.0
Civ. Labor Force	52,118	55,700	57,980
Unemployed	2,606	2,785	2,899
Unempl. Rate	5.0	5.0	5.0
Total Employ.	49,512	52,915	54,991
Non-Agri Employ.	48,522	51,857	53,891
<i>Based on Population Projections from KY State Data Center (July 2005), assumed 5% unemployment rate based on average of years 2000-2004 actual annual unemployment rate, and 98% non-agricultural employment based on 2004 percentage of non-agricultural employment</i>			
Woods & Poole Projections			
W&P Population 16 & older <sup>3</sup>	87,780	90,002	93,640
W&P Total Employment Projection <sup>3</sup>	70,060	78,970	87,930
% Participation	79.8	87.7	93.9

## FORECASTING METHODS

The forecast for the employment of the civilian labor force provides the control for distributing future employment projections for wage and salary industry classifications. Three different projections are made for total wage and salary employment. The control (65% participation rate of projected population 16 years and over) remains the same in each of the projections. The three methods are:

### 1. Straight-Line Projections

The percent of the total wage and salary employment each industry classification held in 2000 is applied to the total projected wage and salary employment for the years 2010, 2020, 2030. See shaded numbers in Exhibit 323-T1.

### 2. Ten-Year Trend Projections

The difference in total wage and salary employment is calculated for each period, then the percent of the total change that each industry classification represented between 1990 and 2000 is applied to the difference and added to the 2000 industry totals respectively.

### 3. Manufacturing Stable – Remaining at 10-Year Trend

The projected percentage of manufacturing employment is held stable at 12.6% as for the Straight-Line Projections in number 1 above. The remaining industry classifications are forecast using their proportionate share of the Ten-Year Trend (1989-1999), like number 2 above, but discounting manufacturing. For example, while the ten-year increase of 3,400 in the service sector represents 32.4% of the overall 10,500 ten-year increase, the same 3,400 increase represents 34% of the 10,000 increase discounting the 500-job increase in manufacturing. See shaded numbers in Exhibit 323-T1.

These three methods provide a range of possibilities for each industry classification.

### **WAGE AND SALARY EMPLOYMENT PROJECTIONS**

Exhibit 323-T1 displays the results of the three forecasting methods that are described above. It also shows the projections of Woods & Poole. Except for the “Ten-Year Trend” and “Manufacturing Stable” projections, employment is expected to increase in each industry classification during the next two decades.

Between 1990 and 2000, actual total non-agricultural employment increased by 9,029 workers according to the Bureau of Economic Analysis, an increase of 20.2%. However, 2000 saw the lowest unemployment rate that has been recorded in recent years at 4.3%. That rate has climbed to a high of 6.1% which was recorded in June of 2005. Projections were based on a 70% participation rate of projected population of 16 and over, a 5% unemployment rate, and 98% non-agricultural jobs.

Based on these projection calculations, non-agricultural employment is projected to actually decline in 2010 to 48,542, in 2020 to 51,857 and will increase over 2000 levels in 2030 to 53,891.

### **Manufacturing**

Growth in the manufacturing sector during the 1990s declined from 14.7% of non-agricultural employment to 12.9%. All three OMPC methods of projection show manufacturing remaining stable increasing by a modest rate in the number of jobs, while holding the same percentage of overall jobs. The “ten-year trend” projection shows the most growth in manufacturing increasing to 13.5% in 2010 and then slowing to maintain 12.6% of jobs in 2030.

Woods & Poole Projections show a decline in manufacturing to about 11.6% of jobs in 2030.

### **Woods & Poole Projections**

The exact methodology Woods & Poole uses to make its forecasts is proprietary and not available. However, some interesting observations can be made. The most obvious are the significant differences in total wage and salary employment for the trend and forecast years. The use of different data sources is the most likely reason for these differences. Woods and Poole uses U.S. Department of Commerce data for employment numbers while this plan uses data supplied by the Kentucky Workforce Development Cabinet. The analysis of forecasts and results indicate that the data from Kentucky yields more reliable

Exhibit 323 – T1: Daviess County Employment Projections

## Daviess County Employment Projections

	1990*		2000*		1990-2000 Change		% Change		2010		2020		2030	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
<b>STRAIGHT LINE<sup>1</sup></b>														
Non- Agri Employ	44663	100.0	53692	100.0	9029	100.0	48522	100.0	51857	100.0	53891	100.0		
Services	12083	27.1	14201	26.4	2118	23.5	12834	26.4	13716	26.4	14254	26.45		
Retail Trade	8706	19.5	10797	20.1	2091	23.2	9757	20.1	10428	20.1	10837	20.11		
Manufacturing	6559	14.7	6936	12.9	377	4.2	6268	12.9	6699	12.9	6962	12.92		
Government	5843	13.1	8189	15.3	2346	26.0	7400	15.3	7909	15.3	8219	15.25		
Transportation, Utilities	2520	5.6	2672	5.0	152	1.7	2415	5.0	2581	5.0	2682	4.98		
Construction	3131	7.0	4433	8.3	1302	14.4	4006	8.3	4281	8.3	4449	8.26		
Wholesale Trade	2187	4.9	2259	4.2	72	0.8	2041	4.2	2182	4.2	2267	4.21		
Finance, ins, real estate	2448	5.5	3205	6.0	757	8.4	2896	6.0	3095	6.0	3217	5.97		
Mining	1186	2.7	465	0.9	-721	-8.0	420	0.9	449	0.9	467	0.87		
<b>10-YEAR TREND<sup>1</sup></b>														
Non- Agri Employ	44663	100.0	53692	100.0	9029	100.0	48522	100.0	51857	100.0	53891	100.0		
Services	11805	26.4	14201	26.4	2396	26.5	12829	26.4	13714	26.4	14254	26.45		
Retail Trade	8706	19.5	10797	20.1	2091	23.2	9600	19.8	10372	20.0	10843	20.12		
Manufacturing	6559	14.7	6936	12.9	377	4.2	6720	13.8	6859	13.2	6944	12.89		
Government	5843	13.1	8189	15.3	2346	26.0	6846	14.1	7712	14.9	8241	15.29		
Transportation, Utilities	2520	5.6	2672	5.0	152	1.7	2585	5.3	2641	5.1	2675	4.96		
Construction	3131	7.0	4433	8.3	1302	14.4	3687	7.6	4168	8.0	4462	8.28		
Wholesale Trade	2187	4.9	2259	4.2	72	0.8	2218	4.6	2244	4.3	2261	4.19		
Finance, ins, real estate	2448	5.5	3205	6.0	757	8.4	2772	5.7	3051	5.9	3222	5.98		
Mining	1186	2.7	465	0.9	-721	-8.0	878	1.8	612	1.2	449	0.83		
<b>MANUFACTURING STABLE - REMAINING AT 10-YEAR TREND<sup>1</sup></b>														
Non- Agri Employ	44663	100.0	53692	100.0	9029	100.0	48522	100.0	51857	100.0	53891	100.0		
Services	11805	26.4	14201	26.4	2396	26.5	13010	26.8	13602	26.2	14184	26.32		
Retail Trade	8706	19.5	10797	20.1	2091	23.2	9892	20.4	10341	19.9	10784	20.01		
Manufacturing	6559	14.7	6936	12.9	377	4.2	6268	12.9	6699	12.9	6962	12.90		
Government	5843	13.1	8189	15.3	2346	26.0	7502	15.5	7843	15.1	8179	15.18		
Transportation, Utilities	2520	5.6	2672	5.0	152	1.7	2448	5.0	2559	4.9	2669	4.95		
Construction	3131	7.0	4433	8.3	1302	14.4	4061	8.4	4246	8.2	4428	8.22		
Wholesale Trade	2187	4.9	2259	4.2	72	0.8	2070	4.3	2164	4.2	2256	4.19		
Finance, ins, real estate	2448	5.5	3205	6.0	757	8.4	2936	6.1	3070	5.9	3201	5.94		
Mining	1186	2.7	465	0.9	-721	-8.0	426	0.9	445	0.9	464	0.86		
<b>WOODS &amp; POOLE PROJECTIONS<sup>2</sup></b>														
Non- Agri Employ	52062	100.0	62180	100.0	10118	100.0	67360	100.0	76320	100.0	85320	100.0		
Services	13490	25.9	15970	25.7	2480	24.5	18000	26.7	20340	26.7	22669	26.57		
Retail Trade	9349	18.0	11630	18.7	2281	22.5	12220	18.1	13830	18.1	15429	18.08		
Manufacturing	9889	19.0	10770	17.3	881	8.7	9700	14.4	9830	12.9	9949	11.66		
Government	6689	12.8	9240	14.9	2551	25.2	11400	16.9	13980	18.3	16598	19.45		
Transportation, Utilities	2829	5.4	3000	4.8	171	1.7	3260	4.8	3620	4.7	3989	4.68		
Construction	3529	6.8	5060	8.1	1531	15.1	5570	8.3	6970	9.1	8379	9.82		
Wholesale Trade	2349	4.5	2480	4.0	131	1.3	2760	4.1	3260	4.3	3769	4.42		
Finance, ins, real estate	2649	5.1	3470	5.6	821	8.1	3910	5.8	3940	5.2	3979	4.66		
Mining	1289	2.5	560	0.9	-729	-7.2	540	0.8	550	0.7	559	0.66		

\* Source for Non-Agricultural Employment Numbers for 1990, 2000: Bureau of Economic Analysis, Regional Economic Accounts

<sup>1</sup> Refer to "Forecasting Methods" on page 321 for projection methodology

<sup>2</sup> Copyright 2005, Woods & Poole Economics, Inc. Washington, D.C., Ag Service & Other added to Services to be comparable to Comprehensive Plan Categories