Employment Projections Methodology

For Heartland 2060 Futures Modeling

Prepared for/by the Central Florida Regional Planning Council

As part of a U.S. Department of Housing and Urban Development Sustainable Communities Grant

For the Florida Heartland

Consisting of DeSoto, Glades, Hardee, Hendry, Highlands, Okeechobee, and Polk Counties

CFRPC

555 E Church St,
Bartow, FL 33830
www.cfrpc.org

This page intentionally left blank

Contents

List of Tables

List of Figures

List of Maps

Purpose

Employment projections were developed for the seven counties of the Florida Heartland, as part of the goal of creating a shared, regional vision for the rural heart of Florida. The Florida Heartland consists of seven counties, all of which are landlocked. These counties are DeSoto, Glades, Hardee, Hendry, Highlands, Okeechobee, and Polk.

Map 1: The Counties of the Florida Heartland

These employment projections were created to facilitate the modeling of alternative future scenarios to examine potential future spatial development patterns. Ultimately these alternative future scenarios, or Futures, will be compared and contrasted and the information they provide will be available for local leaders and decision-makers. The employment projections outlined in this report will be used to model three different Futures, each with its own specific economic trajectory. The employment projections cover the seven counties and extend from 2010 to the year 2060. This time period corresponds to the time period of the 50-year regional vision that is being developed as part of the Heartland 2060 project. The projections are divided into three different economic Futures, and further subdivided into 23 industry sectors.

The employment projections were partially developed using custom population projection inputs, which were specifically created for this project. These population projections are detailed elsewhere, but are primarily built using data from the 2011 Bureau of Economic and Business Research (BEBR) population projections report. The employment projections are used in the Futures modeling, to allocate jobs spatially to employment centers, and by industry. The employment projections were derived from an economic forecasting

software (REMI PI+), by replacing the stock population forecast with the custom population projections mentioned above and detailed elsewhere.

Background

The economic forecasting software used to develop these employment projections is called PI+ (version 1.5) and is developed and maintained by Regional Economic Models, Inc. (REMI). It covers all counties in Florida, and is licensed collectively by all eleven of Florida's Regional Planning Councils (RPCs) together. The software is capable of projecting to the year 2060, which is the extent of the current scope of Futures modeling in the Heartland 2060 project as funded by the Sustainable Communities grant.

Three Potential Economic Futures

Three different potential economic Futures correspond to what might happen if there were directed regional development of industry clusters, as identified in the Comprehensive Economic Development Strategy (CEDS) document that has been produced for the region. The CEDS identifies the regional industry clusters in the Heartland region, as seen in Figure 1. The full findings of the CEDS is detailed elsewhere.

Figure 1: CEDS Industry Clusters in the Heartland
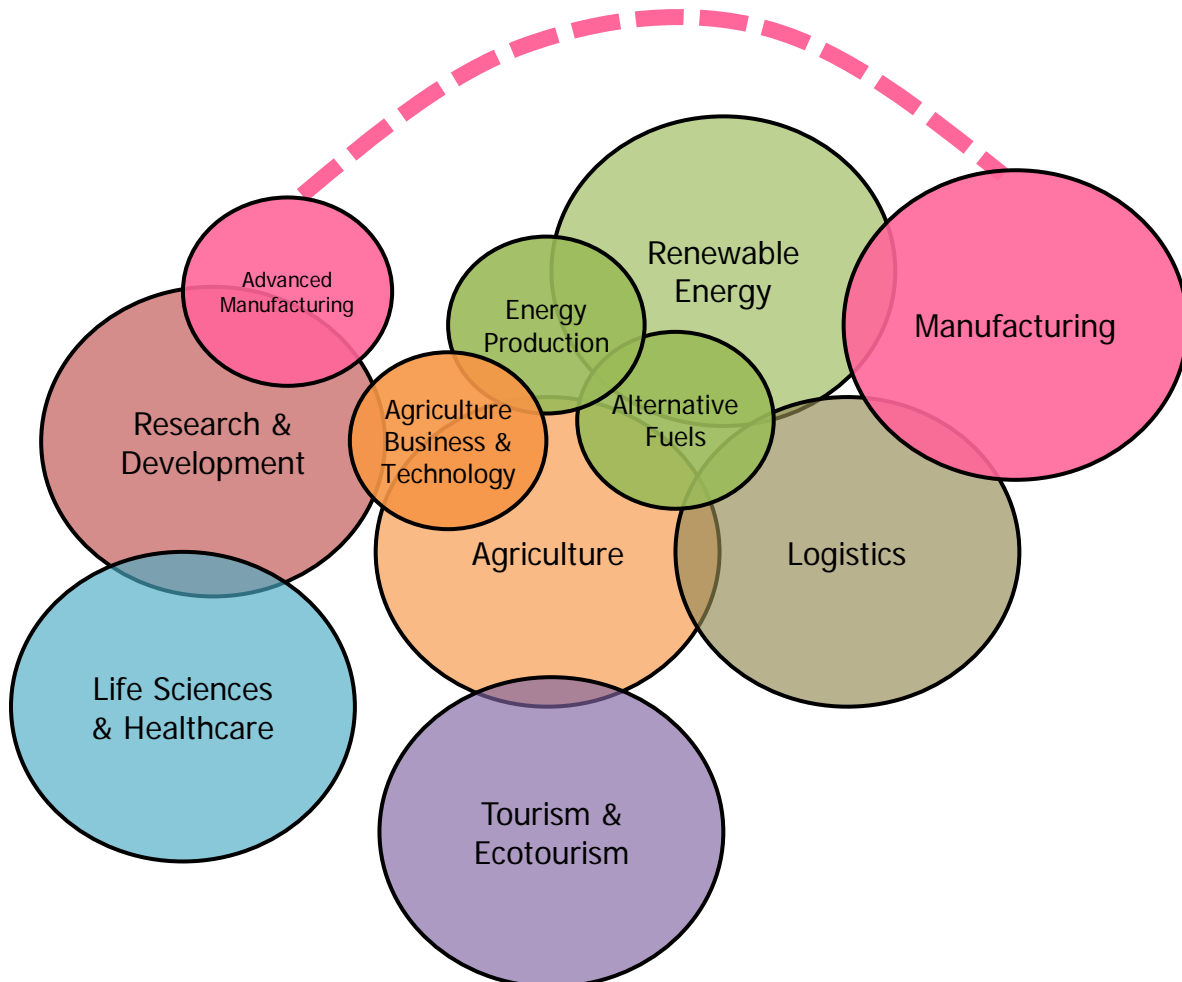
Employment projections were created for three different potential economic Futures, as developed during the Heartland 2060 regional vision process. These three Futures are the Current Economy, Energy Economy, and Trade Economy (see Figure 2). Two of the Futures (Energy Economy and Trade Economy) correspond to a regional focus on particular industry clusters, and the Current Economy Future corresponds to a continuation along the current economic trajectory. Since they represent a focused development of specific industry clusters, the Energy Economy and Trade Economy employment projections have more jobs in targeted NAICS codes than the Current Economy projections. In practice, the Current Economy can be thought of as representing the business-as-usual model, while the Energy Economy and Trade Economy represent projections above and beyond business-as-usual.

Figure 2: Three Potential Economic Futures of the Heartland

CE — **Current Economy** : natural resources & healthcare

EE — **Energy Economy** : generation & technology

TE — **Trade Economy** : logistics & manufacturing

Employment projections for the Current Economy focus on continuing development in already regionally strong and important industry clusters such as health care and natural resources. The Energy Economy focuses on energy generation from alternative and renewable technologies and fuels, development of those technologies, and implementation of energy conservation and efficiency equipment. Employment projections for the Trade Economy tend to focus on industry clusters in the logistics, warehousing, trade, and manufacturing industries. These industry clusters come from the regional Comprehensive Economic Development Strategy, as produced by the Central Florida Regional Planning Council for the U.S. Economic Development Administration. See Table 1 for a summary of the industry cluster focus of each Future, as envisioned by the CEDS.

Table 1: Regional Industry Cluster Development Focus (from the CEDS)												
Economic Future	Agriculture	Agriculture Business & Technology	Logistics	Life Sciences & Healthcare	Tourism & Ecotourism	Research & Development	Manufacturing	Advanced Manufacturing	Renewable Energy	Energy Production	Alternative Fuels
Current Economy	P	P		P	P						
Energy Economy	S	S				P		P	P	P	P
Trade Economy	S	S	P			S	P	P			S
P= Primary focus. S = Secondary focus												

NAICS Codes and Industries

The PI+ software licensed by the Florida RPCs for the Heartland region uses 23 North American Industry Classification System (NAICS) codes, as standardized by the U.S. Census. Table 2 details the industry clusters in each NAICS code grouping. Employment projections were created for each county, for each NAICS code industry sector, and for each year. It is important to note that NAICS employment classifications distinguish by the type of work performed, and not by the field or industry in which the work occurs. This may cause some confusion because, for instance a grove or farm manager, although they work in the agricultural field would not be classified as Farm, but would be classified as Administrative and Waste Management Services. Likewise, a chemical engineer that works blending fertilizer for a mining company might be classified under Manufacturing (because this type of work is classified as Chemical Manufacturing), instead of Mining.

Table 2: NAICS Codes in the Florida Heartland	
CFRPC REMI v1.5 (23-sector)	**NAICS Code**
Accommodation and Food Services	72
Administrative and Waste Management Services	56
Arts, Entertainment, and Recreation	71
Construction	23
Educational Services	61
Farm	111-112
Federal Civilian	NA
Federal Military	NA
Finance and Insurance	52

|	
Forestry, Fishing, and Related Activities	113-115
Health Care and Social Assistance	62
Information	51
Management of Companies and Enterprises	55
Manufacturing	31-33
Mining	21
Other Services, except Public Administration	81
Professional, Scientific, and Technical Services	54
Real Estate and Rental and Leasing	53
Retail Trade	44-45
State and Local Government	NA
Transportation and Warehousing	48-49
Utilities	22
Wholesale Trade	42
NA = Not Applicable. These industries are defined within the PI+ software, but do not correspond directly to a particular NAICS code.	

Methodology

The REMI PI+ (v1.5.2, build 3274) economic forecasting software used to generate these employment projections uses a series of interconnected model elements and datasets to forecast micro economic trends. Many of these datasets, such as employment projections (based on the U.S. Bureau of Labor Statistics) or population projections (based on the U.S. Census) come imbedded in the software, but are also able to be manipulated. The PI+ software is very malleable. The imbedded population projections are built from the U.S. Census cohort-based method, and were deemed inappropriate for forecasting the population of the Heartland region. For this reason, unique population projections were developed for this project.

After the unique population projections were used to replace the stock REMI population projections, the model was run as normal, to the year 2060, and the employment projections were taken, to be used in the Futures modeling. The employment projections were separated by county, by year, and by NAICS code. The 23 NAICS codes that were used are detailed above, in Table 2.

Current Economy

The novel population projections, developed for this project, were built from the established and accepted methodology as put forth by BEBR. These population projections were used to replace the PI+ standard population projections. This somewhat altered the employment projections of the stock PI+ model, and these modified, unique employment projections are what make up the Current Economy employment projections.

Figure 3: Current Economy Future
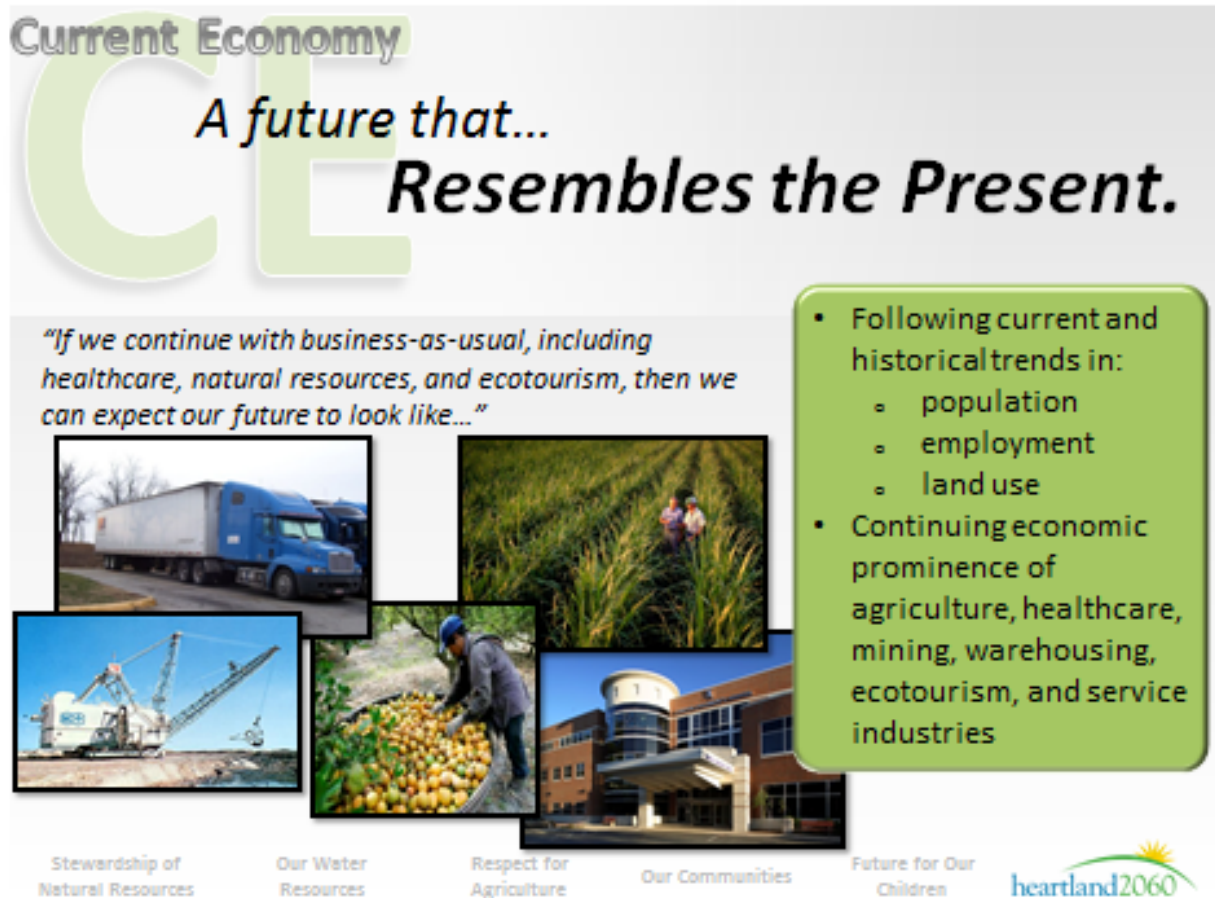
Energy Economy and Trade Economy
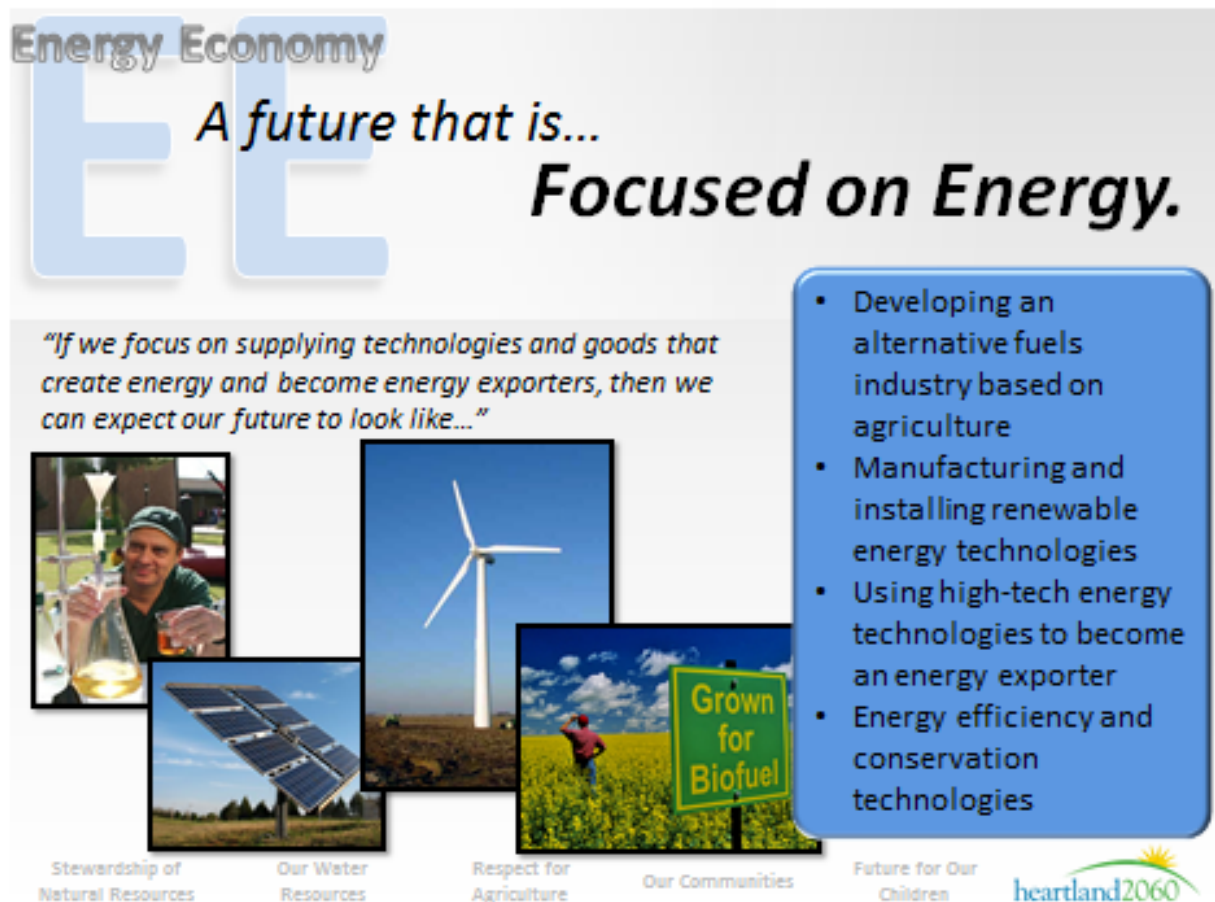
As stated previously, the employment projections for the Energy Economy and Trade Economy utilize the projections of the Current Economy as a base. Then, presumably, with focused development effort in targeted industry clusters, the Energy Economy and Trade Economy Futures will develop "extra" jobs in the targeted industry clusters. For this reason, the Energy Economy and Trade Economy Futures have projections that are equal to or greater than the Current Economy in any given county, NAICS code cluster, or year. The number of extra jobs possible given targeted industry cluster development was determined to be +2% more than the Current Economy. These extra jobs are distributed differentially in the Energy and Trade Economy Futures.

The determination of which NAICS code industry clusters would be affected by this targeted industry cluster development and by how much involved a targeted survey using local knowledge. Respondents were informed of the criteria for each Future (Energy

Economy and Trade Economy) and asked to select industry clusters (from the 23 NAICS codes) where each alternative Future might have more projected employment than the Current Economy Future. Each respondent was given one hundred points to distribute, which represented the additional +2% employment. All responses were averaged and weighted to distribute the projected job gains by industry. Responses fairly closely resembled each other, as was to be expected.

The general themes associated with each of the two alternative Futures are captured in Figures 4 and 5. These revolved around the particular economic trajectory for each, as envisioned in Table 1. The Energy Economy represents a directed focus on the development of energy efficiency, energy conservation, and renewable energy and alternative fuels technologies and industries. The Energy Economy envisions a future that is focused on energy. See Figure 4.

Figure 4: Energy Economy Future

The Trade Economy represents a directed focus on developing logistics and manufacturing industries and technologies. The Trade Economy envisions a future that is making and moving goods. See Figure 5.

Figure 5: Trade Economy Future

Figure 6 shows the industry clusters that were weighted more heavily than the Current Economy given the expected focused development in the Energy Economy Future. The primary focus is on added employment in Professional, Scientific, and Technical Services, and Manufacturing, with secondary focus on Construction, Education Services, Farm, Forestry, Fishing, and Related Activities, and Utilities.

Figure 6: Employment Projection Weighting for Energy Economy
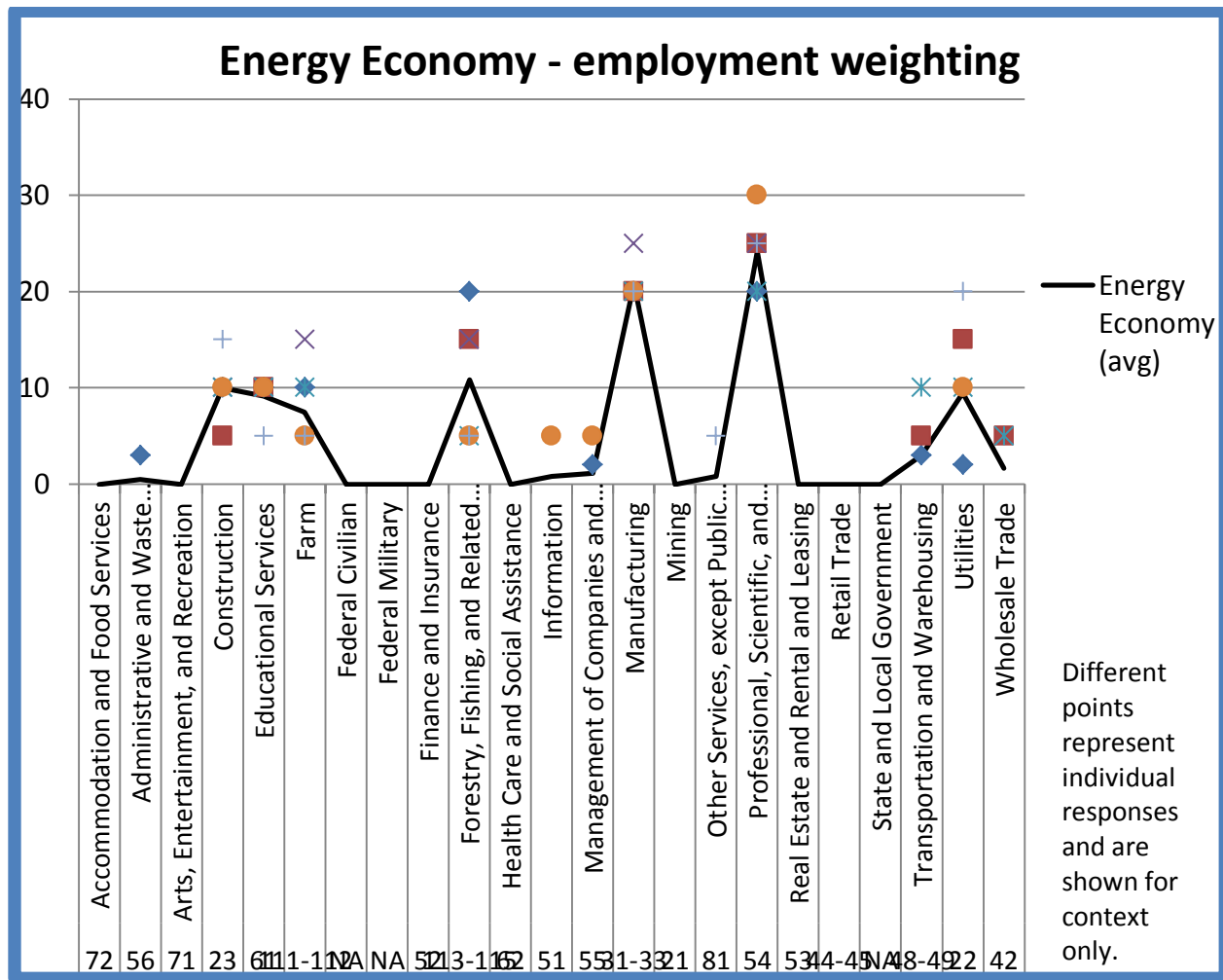
Figure 7 shows the industry clusters that were weighted more heavily than the Current Economy given the expected focused development in the Trade Economy Future. The primary focus is on added employment in Transportation and Warehousing, and Manufacturing, with secondary focus on sectors such as Construction, Educational Services, and Wholesale Trade.

Figure 7: Employment Projection Weighting for Trade Economy
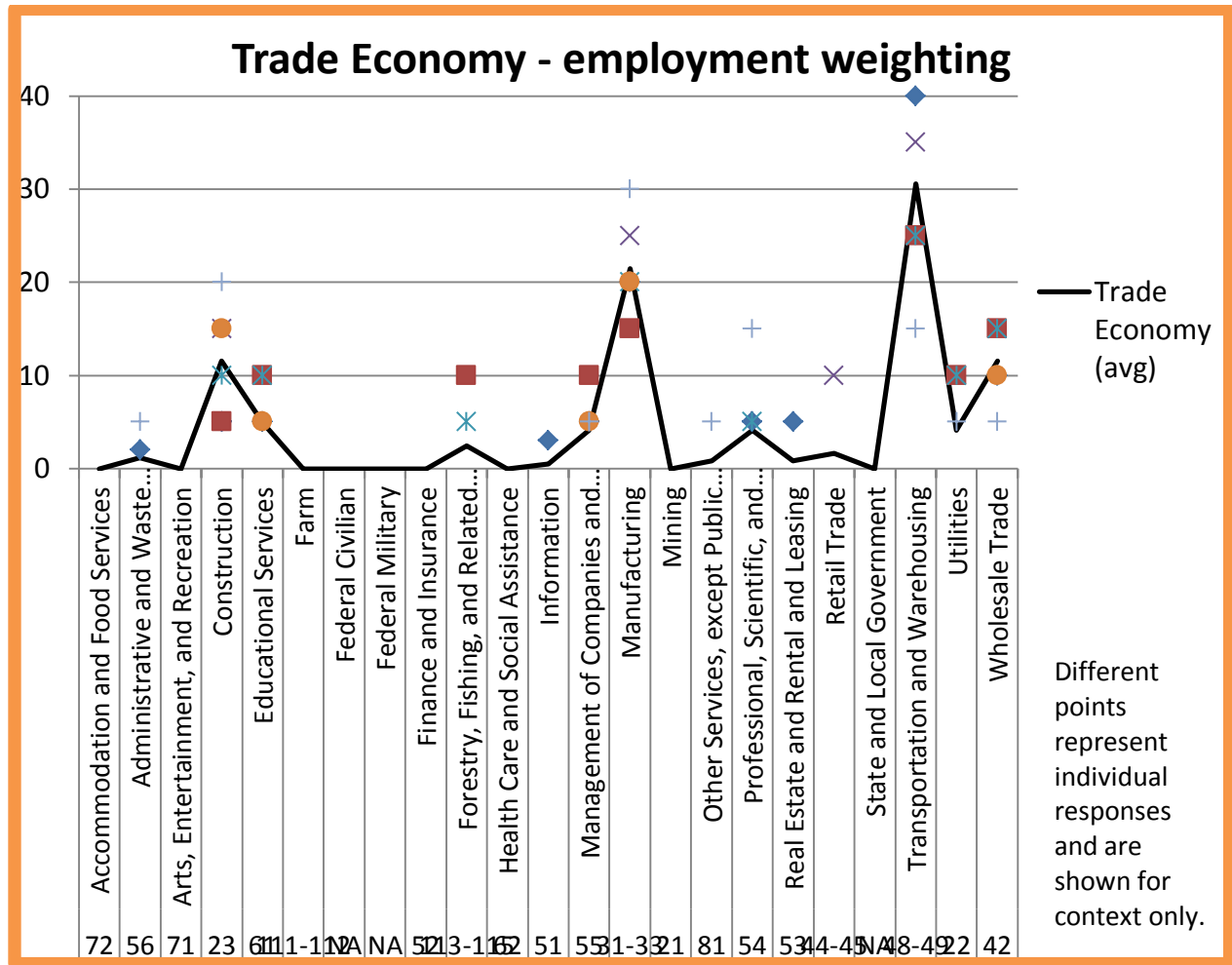
Respondents to the employment weighting were also asked to add comments regarding each NAICS code industry cluster that, in their opinion, would add jobs under the conditions stated above. These comments were used to develop datasets that were used in the scenario modeling, during the employment allocation process. In general, these comments followed the general themes expressed in each Future.

Results

The results of the employment projection process are presented below. They are divided by Future and by County. Remember that these projections are only as good as the assumptions that they are based upon, as stated in the Methodology, and the further out the projection (in time), the less reliable they become.

Employment Projections

The abridged employment projections for the Current Economy Future are presented in Table 3. These projections represent the combination of Heartland-specific population projections and a "business-as-usual" trend that envisions a future that is similar in economic focus to current conditions.

Table 3: Current Economy Total Employment by County (abridged)						
	Estimate	**Projections**				
Jurisdiction	**2011**	**2020**	**2030**	**2040**	**2050**	**2060**
DESOTO	13,582	15,625	16,170	16,365	17,138	17,885
GLADES	4,586	5,047	5,242	5,292	5,574	5,672
HARDEE	11,395	12,900	13,304	13,388	14,054	14,930
HENDRY	19,106	21,148	22,284	23,068	24,762	26,667
HIGHLANDS	38,547	45,484	49,919	54,110	59,817	66,570
OKEECHOBEE	14,505	17,485	19,608	21,455	23,593	25,726
POLK	257,420	316,956	364,403	412,589	468,779	531,604
Total	359,141	434,646	490,930	546,266	613,717	689,054
Note: The Energy and Trade Economy projected employment is the same as above plus an additional 2%, per county at any given time period.						

Figures 8 and 9 graphically depict the projected employment in the region, by county. In general, employment is projected to increase gradually throughout the years, with some counties' projected gains faster (or slower) relative to others in the region.

Figure 8: Current Economy Employment Projections (Four Counties)

Current Economy Total Employment Projections: DeSoto, Glades, Hardee, & Hendry Counties

Figure 9: Current Economy Employment Projections (Highlands and Polk)
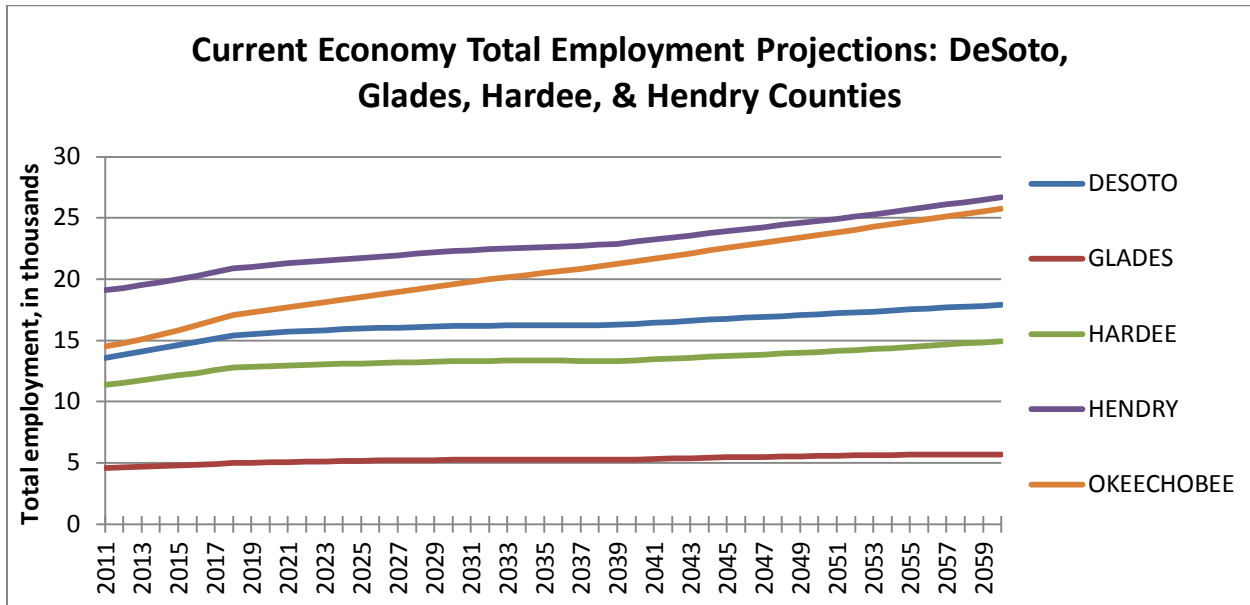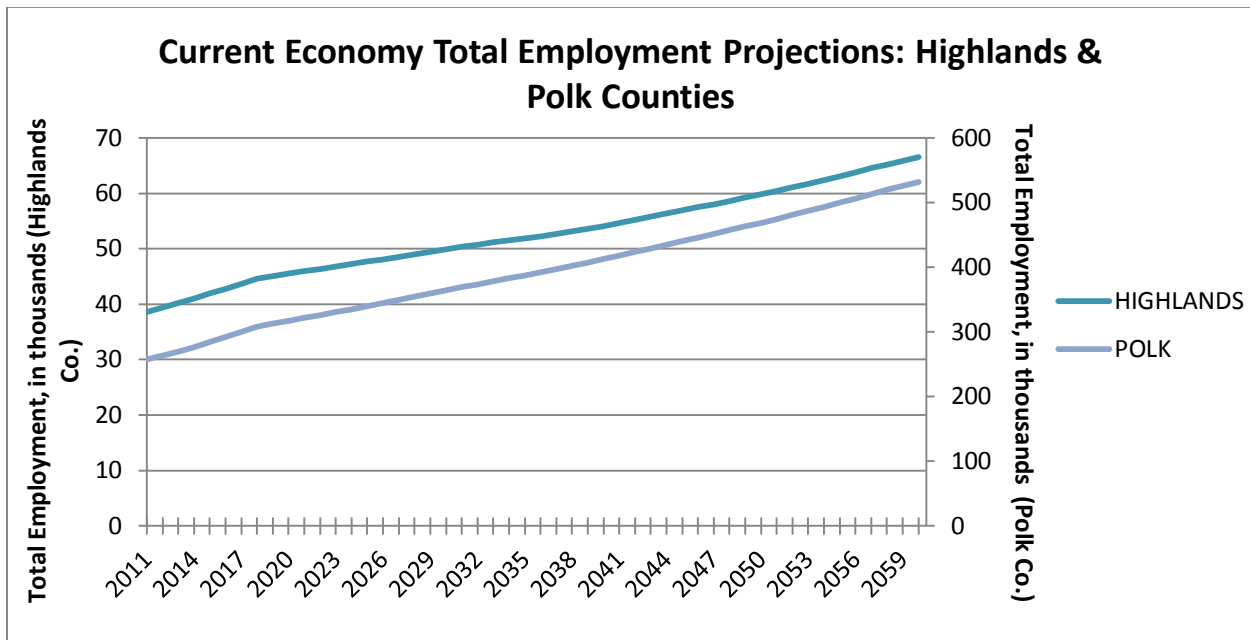

Current Economy Total Employment Projections: Highlands & Polk Counties

The projected employment by NAICS industry is presented in Table 4. Obviously, the distribution of employment between counties varies based on local conditions. As might be expected given demographic trends in the nation, Health Care and Social Assistance is

projected to be a very large employment sector in the coming years, more than tripling in the region from current day to the year 2060.

Table 4: Current Economy Total Employment by Industry (abridged)						
	2011	2020	2030	2040	2050	2060
Accommodation and Food Services	21,257	26,890	30,641	33,344	35,369	36,797
Administrative and Waste Management Services	27,342	33,886	40,621	48,487	56,526	64,879
Arts, Entertainment, and Recreation	6,817	8,414	9,974	11,712	13,719	16,075
Construction	17,521	31,879	39,078	46,462	56,521	66,887
Educational Services	5,944	7,677	8,997	9,959	10,632	11,076
Farm	12,573	11,916	10,679	9,666	8,575	7,448
Federal Civilian	1,691	1,620	1,723	1,943	2,321	2,920
Federal Military	1,717	1,434	1,415	1,363	1,324	1,305
Finance and Insurance	16,958	17,536	18,450	19,077	19,698	20,303
Forestry, Fishing, and Related Activities	21,058	20,421	16,789	12,516	12,181	11,904
Health Care and Social Assistance	40,864	53,537	69,913	89,834	116,715	152,684
Information	2,825	3,067	3,100	3,093	3,040	2,964
Management of Companies and Enterprises	5,493	6,317	6,809	7,045	6,928	6,541
Manufacturing	17,520	19,879	21,561	22,174	21,844	20,218
Mining	1,956	2,361	2,124	1,905	1,994	2,005
Other Services, except Public Administration	21,702	27,082	30,944	33,633	35,632	37,000
Professional, Scientific, and Technical Services	13,151	16,961	20,952	25,236	29,582	34,079
Real Estate and Rental and Leasing	13,333	16,136	18,120	19,737	21,426	23,077
Retail Trade	39,912	48,498	50,480	51,624	52,557	53,396
State and Local Government	40,305	41,713	43,389	43,485	44,049	45,073
Transportation and Warehousing	16,995	22,976	28,700	35,213	42,200	49,549
Utilities	715	739	747	704	650	591
Wholesale Trade	11,492	13,707	15,725	18,053	20,234	22,283
Total Heartland Employment	359,141	434,646	490,930	546,266	613,717	689,054

When the regional employment projections are compared for the year 2060, it is obvious that Healthcare and Social Assistance is projected to be a driving economic force in the Heartland. Similarly, service industries such as Administrative and Waste Management, Construction, Other Services except Public Administration, Retail Trade, State and Local Government, and Transportation and Warehousing, are also projected to remain strong contributing industry clusters. The Energy Economy Future primarily has more jobs in the Manufacturing and

Professional, Scientific, and Technical Services sector, and other jobs are distributed in other sectors as previously described. The Trade Economy Future primarily has more jobs in the Manufacturing and Transportation and Warehousing sectors, and other jobs are distributed in other sectors also as previously described. Overall the difference between the three scenarios, in terms of total projected employment, is fairly small.

Figure 10: Projected Employment by Future and Industry (2060).
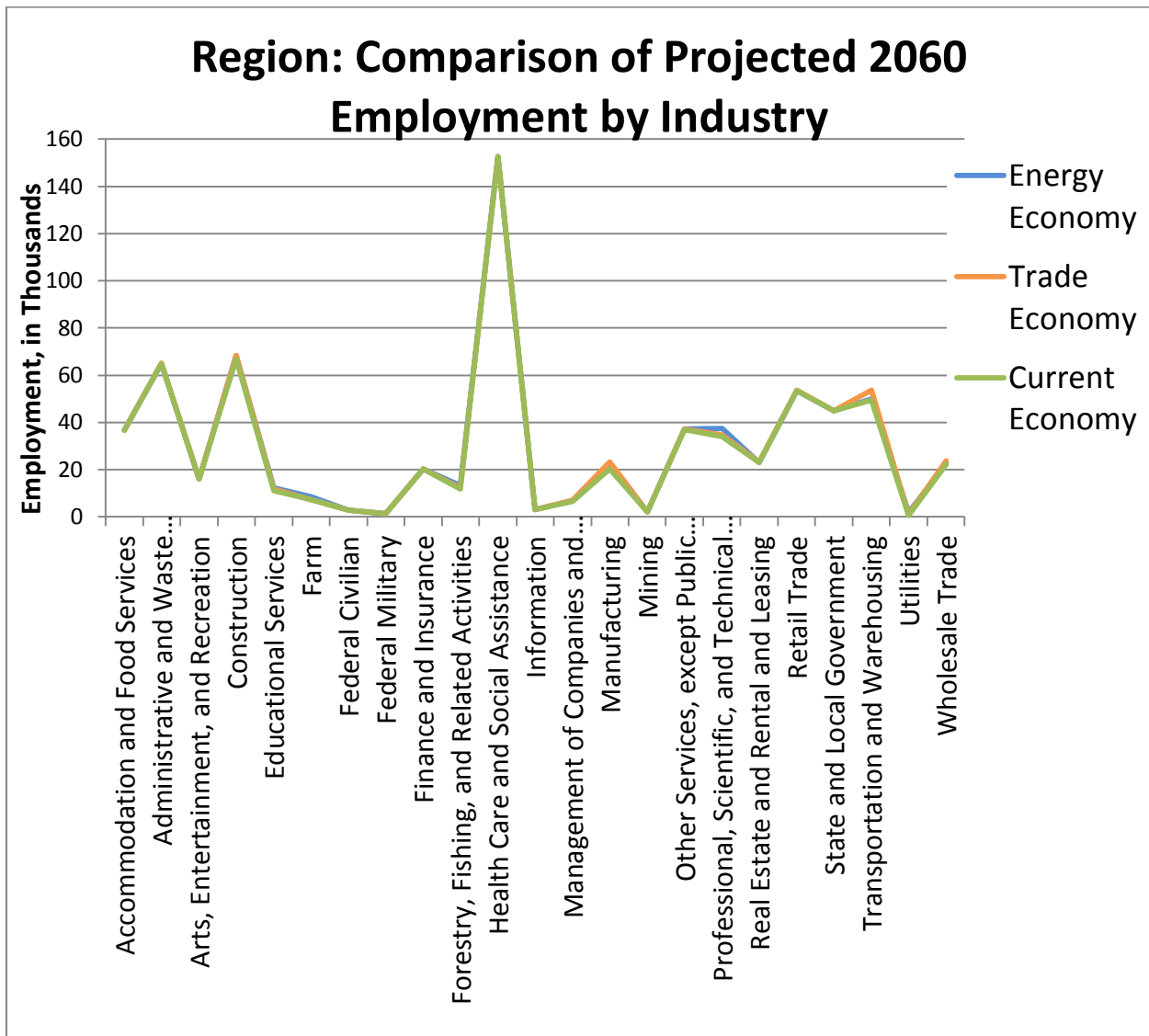
Employment Projections by County

DeSoto County

DeSoto County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. DeSoto is unique in that it has a significant proportion of projected employment also in Retail Trade.

Figure 11: Regon

DeSoto County - Projected Employment in Current Economy (2060)

Glades County

Glades County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. However, Glades is also projected to have significant employment in Construction, Forestry, Fishing, and Related Activities, Manufacturing, and Other Services, except Public Administration.

Figure 12:

Glades County - Projected Employment in Current Economy (2060)

Hardee County

Hardee County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. The next two highest projected employment sectors are Fishing, Forestry, and Related Activities and State and Local Government.

Figure 13:

Hardee County - Projected Employment in Current Economy (2060)

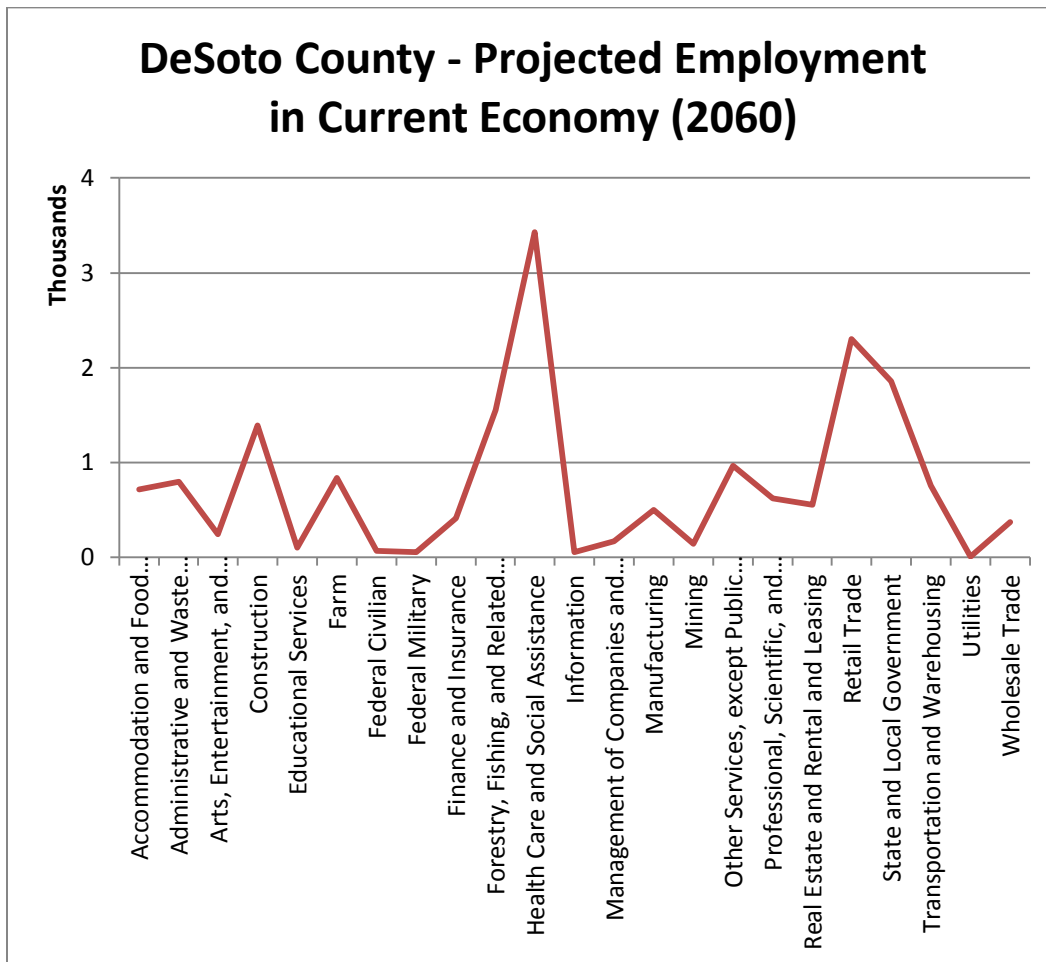## Hendry County

DeSoto County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. DeSoto is unique in that it has a significant proportion of projected employment also in Retail Trade.
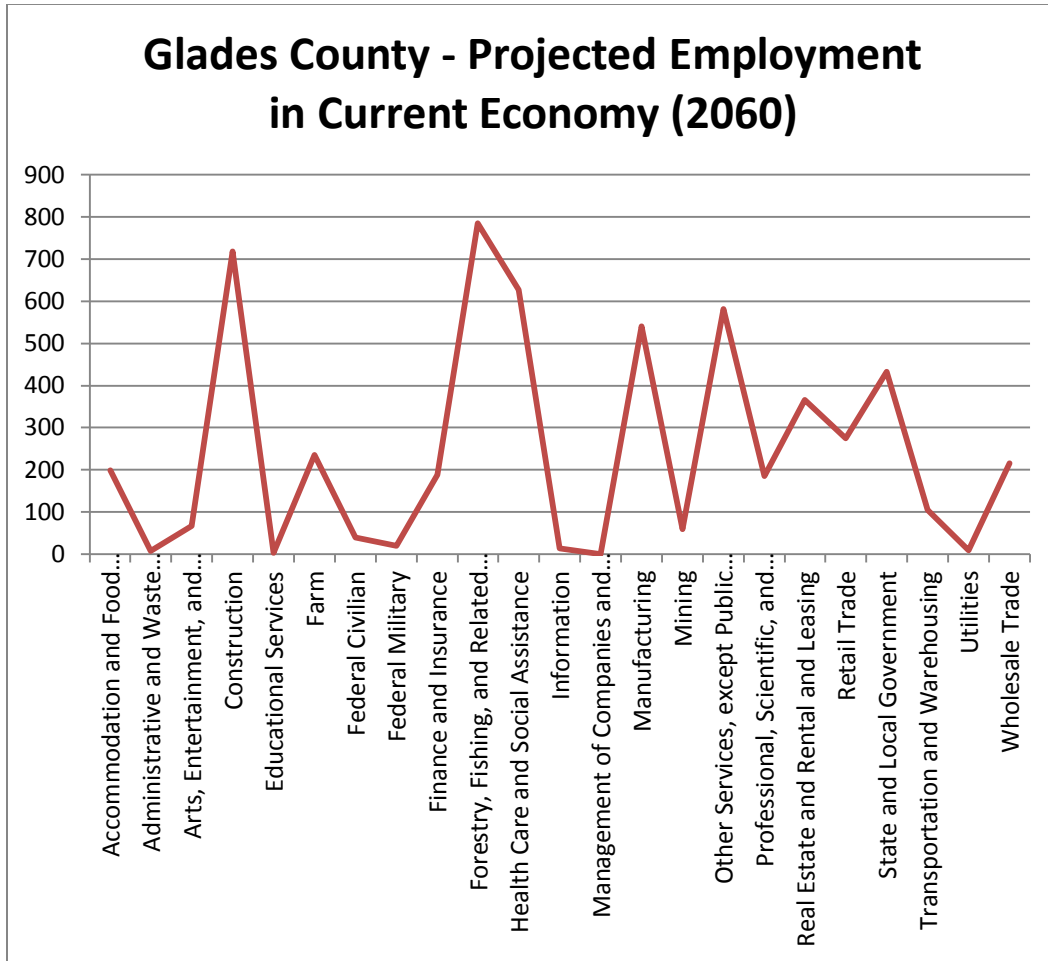
Figure 14: Regin

Highlands County

DeSoto County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. DeSoto is unique in that it has a significant proportion of projected employment also in Retail Trade.

Figure 15: Re
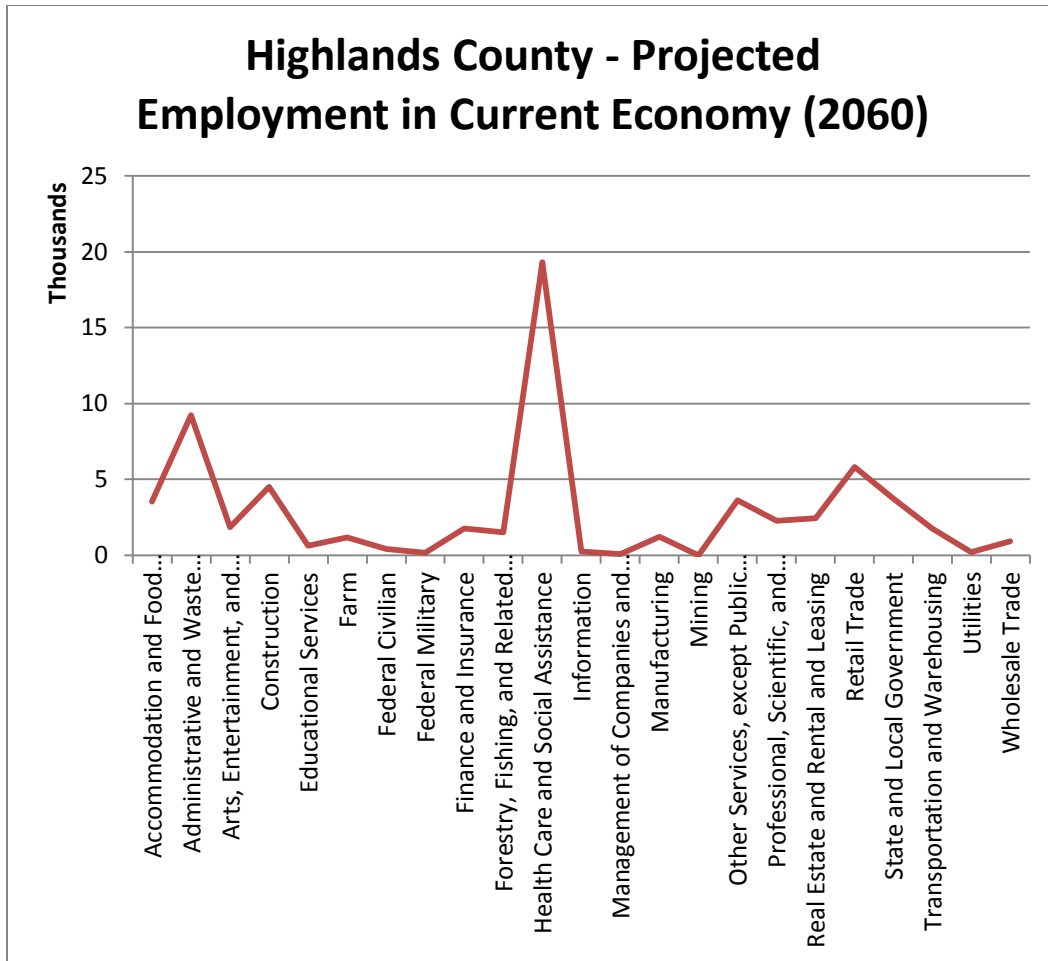
Okeechobee County
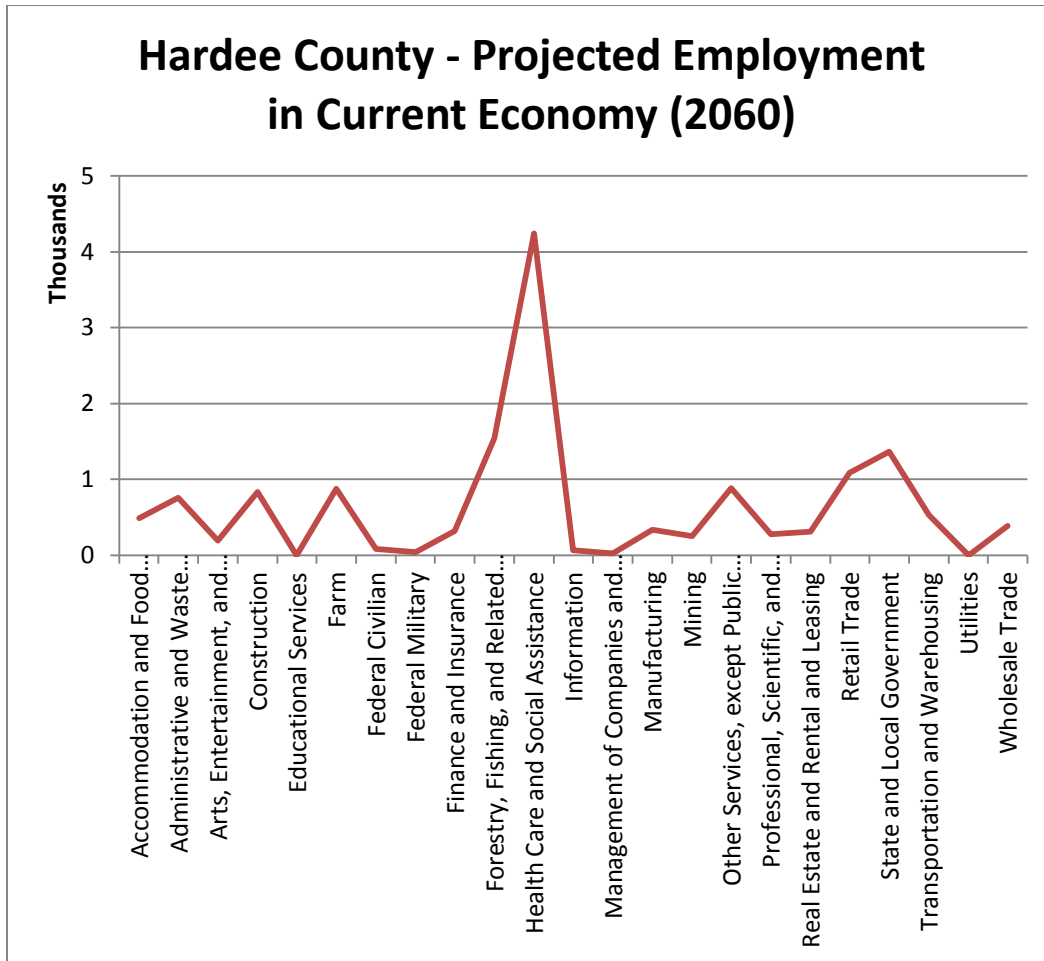
DeSoto County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. DeSoto is unique in that it has a significant proportion of projected employment also in Retail Trade.

Figure 16:

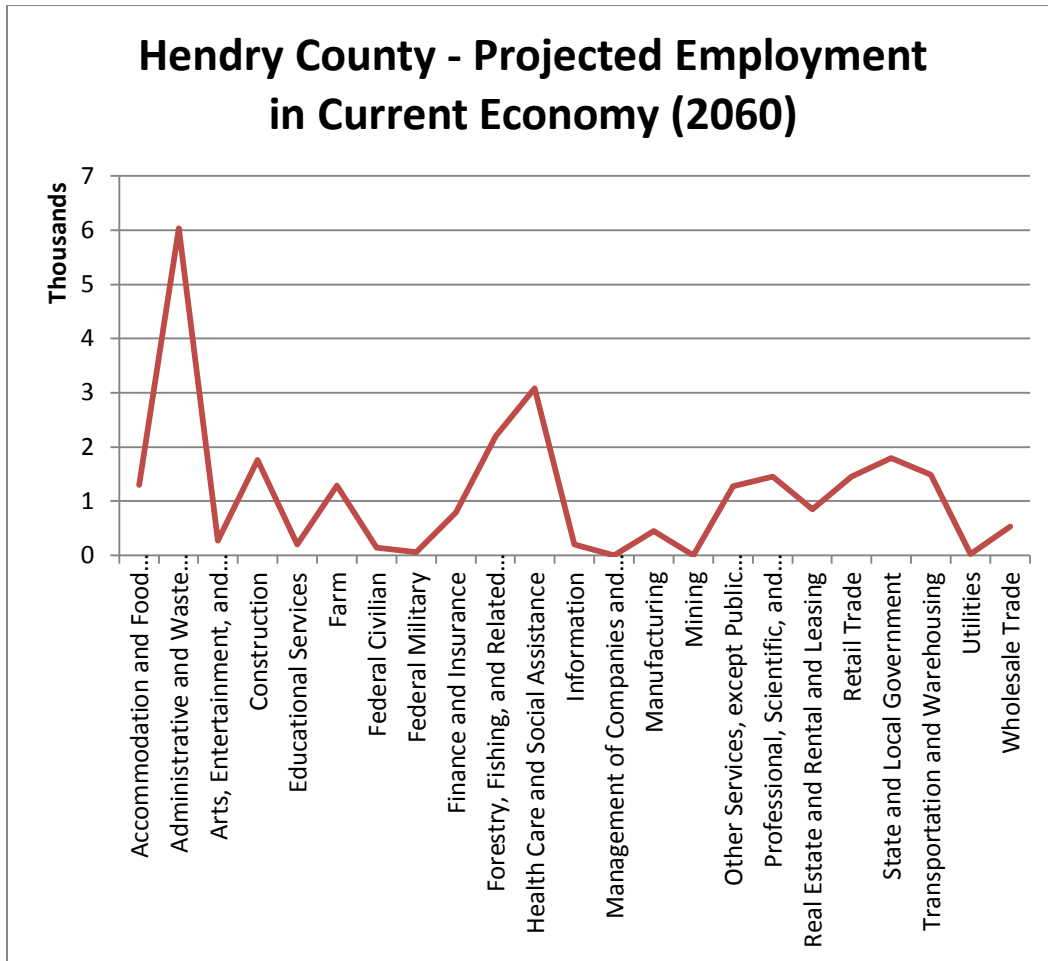
Okeechobee County - Projected Employment in Current Economy (2060)

Polk County

DeSoto County's projected employment in 2060 under the Current Economy Future follows a trend similar to the majority of the counties in the region, with a major peak in Health Care and Social Assistance. DeSoto is unique in that it has a significant proportion of projected employment also in Retail Trade.
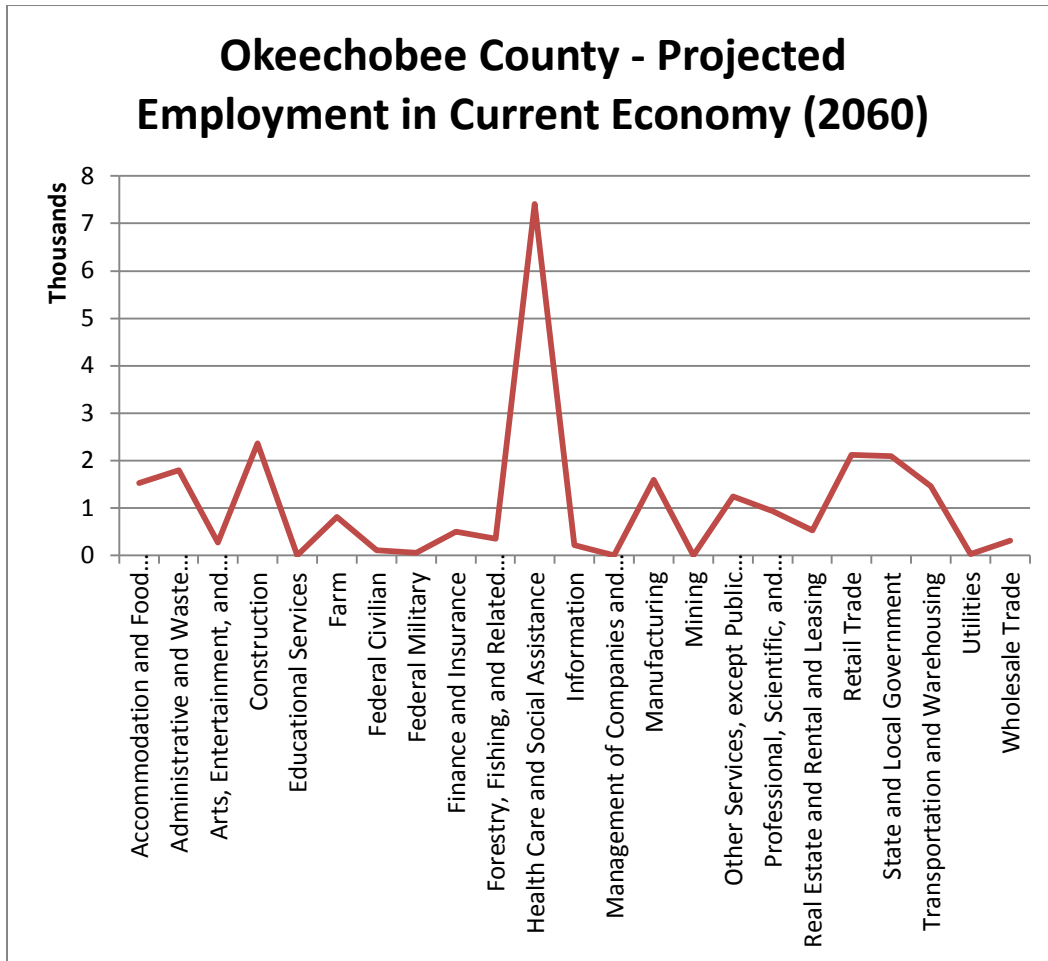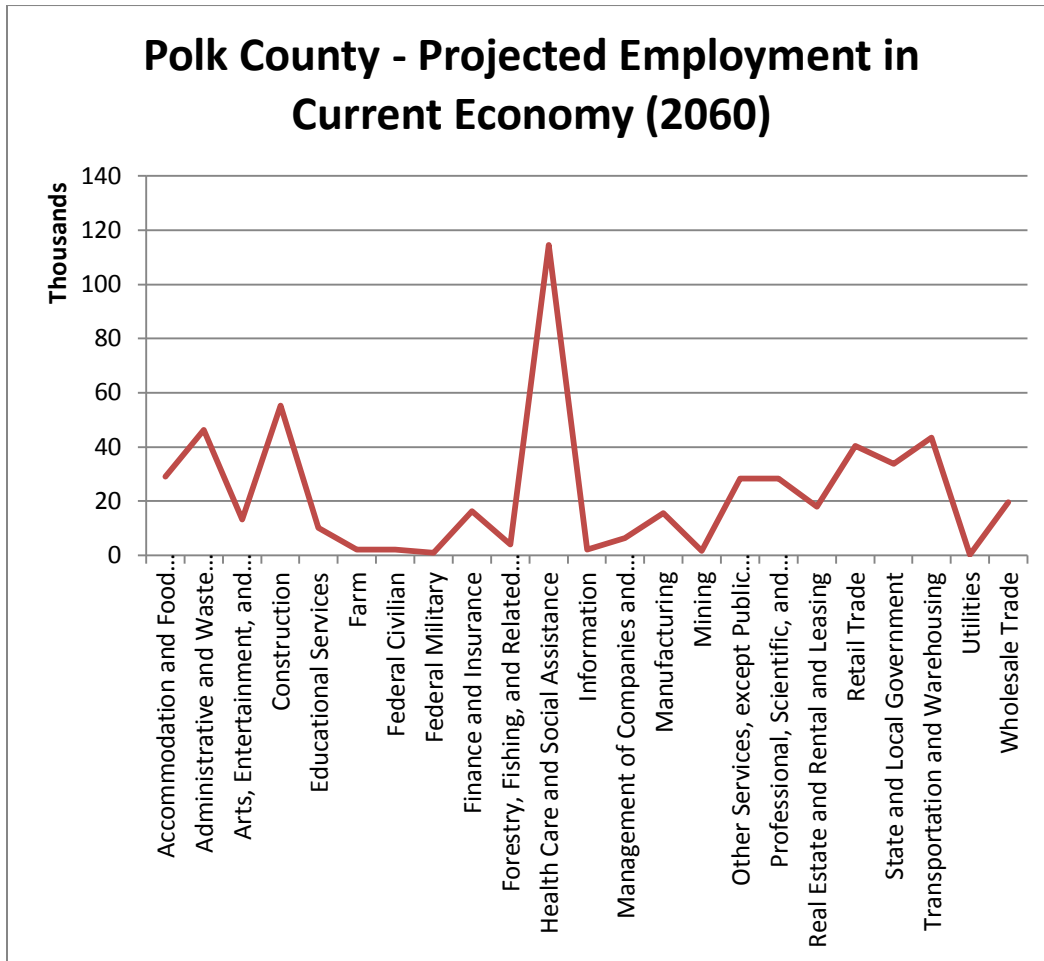
Figure 17:

Polk County - Projected Employment in Current Economy (2060)

Analysis

The economic trends present both in the region and in the projections for each projected Future bear further investigation. Figures 18 and 19 display the breakdown of employment at the regional level for the year 2010. This data comes from the PI+ software, which is based on U.S. Bureau of Labor Statistics data. The biggest three industries in the seven-county region are Health Care and Social Assistance, Retail Trade, and State and Local Government.

Figure 18: Regional Current Economy Industry Share (2010)

Region: Current Economy Industry Share (2010)

- Accommodation and Food Services
- Administrative and Waste Management Services
- Arts, Entertainment, and Recreation
- Construction
- Educational Services
- Farm
- Federal Civilian
- Federal Military
- Finance and Insurance
- Forestry, Fishing, and Related Activities
- Health Care and Social Assistance
- Information
- Management of Companies and Enterprises
- Manufacturing
- Mining
- Other Services, except Public Administration
- Professional, Scientific, and Technical Services
- Real Estate and Rental and Leasing
- Retail Trade
- State and Local Government
- Transportation and Warehousing
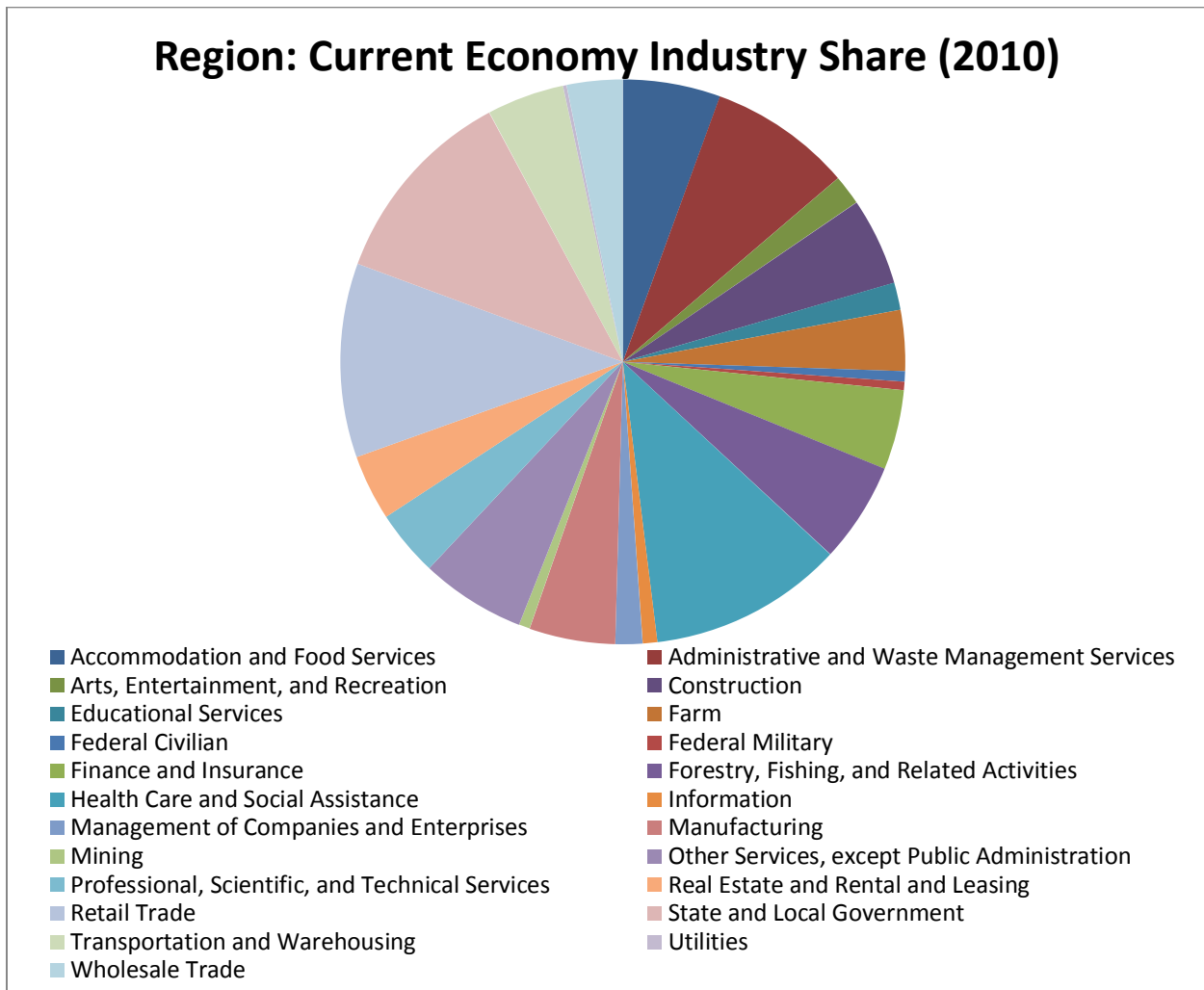- Utilities
- Wholesale Trade

Figure 19 displays the PI+ projected employment industry share for the year 2060, under the assumptions of the Current Economy Future. Under this scenario, it is apparent that Health Care and Social Assistance is projected to become a much larger employer fifty years in the future; approximately 22% of total regional employment. This seems intuitive

given the large percentage of seniors in the current population and the impending health needs of the retiring Baby Boomers, which is a trend being observed nationally as well as regionally. Compared to the 2010 industry share, the 2060 economy is projected to have several other sectors that are driving regional employment. These sectors are Construction, Administrative and Waste Management Services, Retail Trade, Transportation and Warehousing, and State and Local Government.

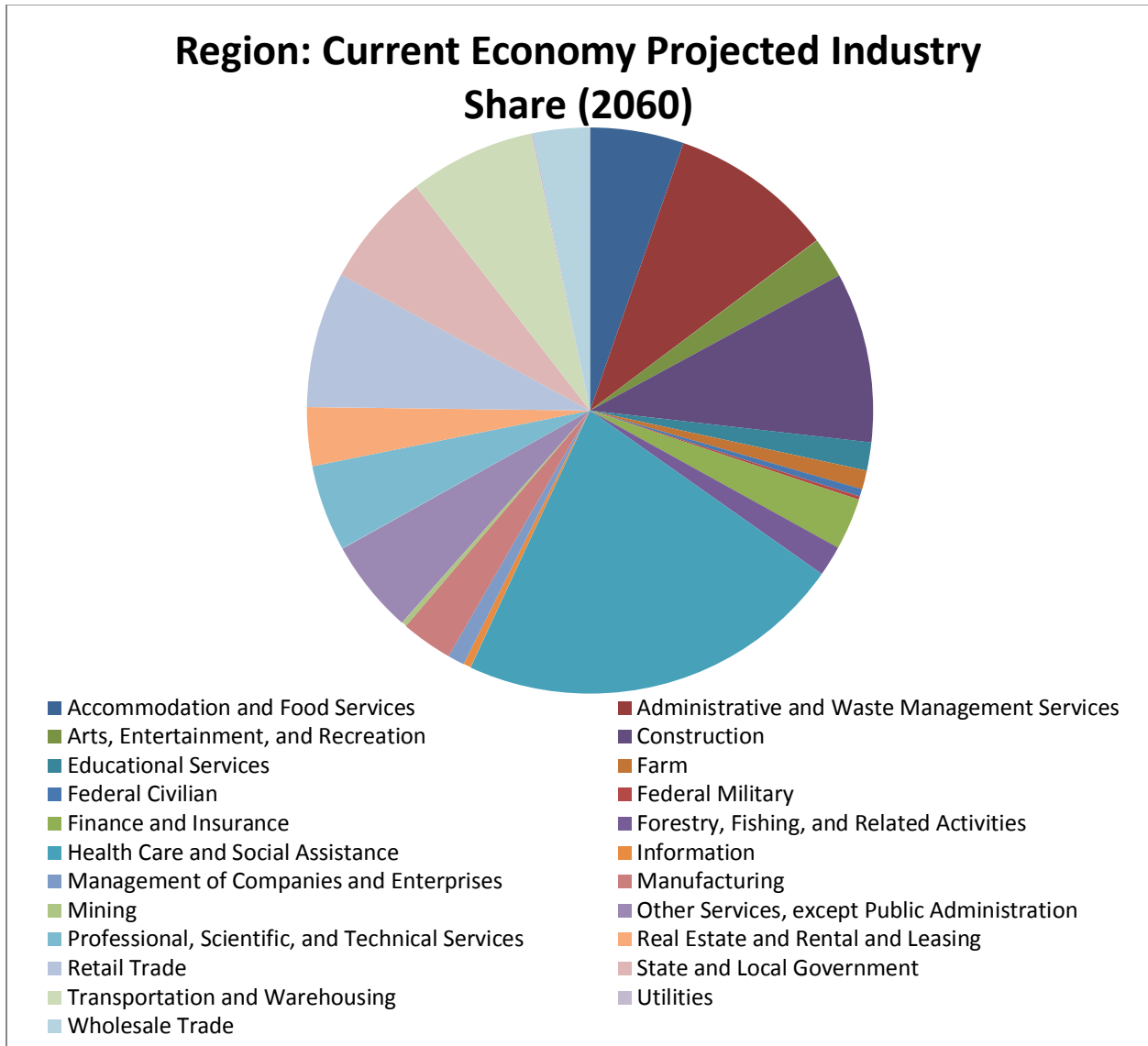**Figure 19: Regional Current Economy Projected Industry Share (2060)**

Region: Current Economy Projected Industry Share (2060)

Legend:
- Accommodation and Food Services
- Administrative and Waste Management Services
- Arts, Entertainment, and Recreation
- Construction
- Educational Services
- Farm
- Federal Civilian
- Federal Military
- Finance and Insurance
- Forestry, Fishing, and Related Activities
- Health Care and Social Assistance
- Information
- Management of Companies and Enterprises
- Manufacturing
- Mining
- Other Services, except Public Administration
- Professional, Scientific, and Technical Services
- Real Estate and Rental and Leasing
- Retail Trade
- State and Local Government
- Transportation and Warehousing
- Utilities
- Wholesale Trade

Figure 20: Projected Shift-Share Change in Current Economy (2010 to 2060)

Shift-Share Change in Current Economy
(2010 to 2060)
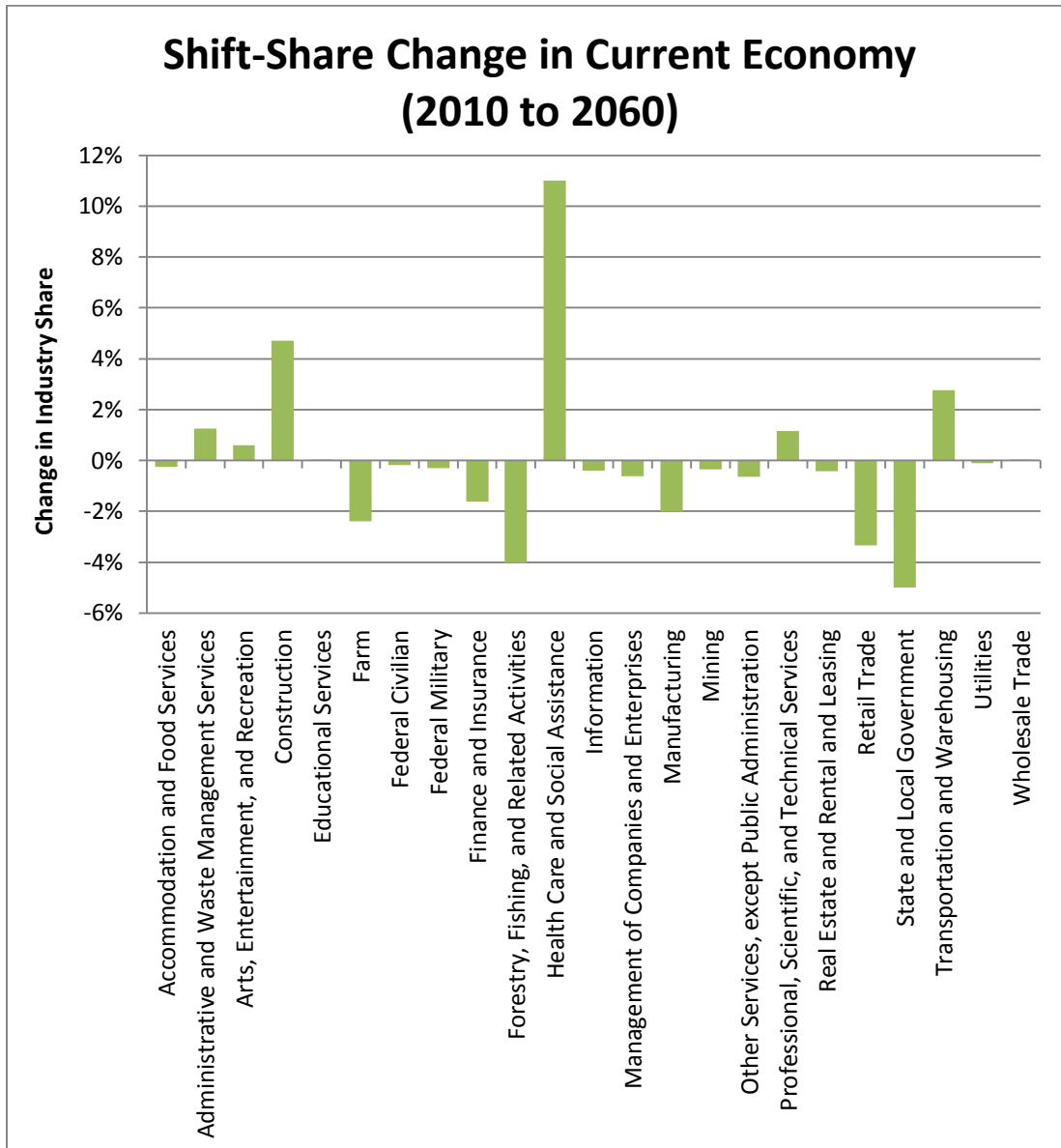
Figure 21: Projected Shift-Share Difference by Future (2060)

Region: Shift-Share Difference from Current Economy Projections (year 2060)
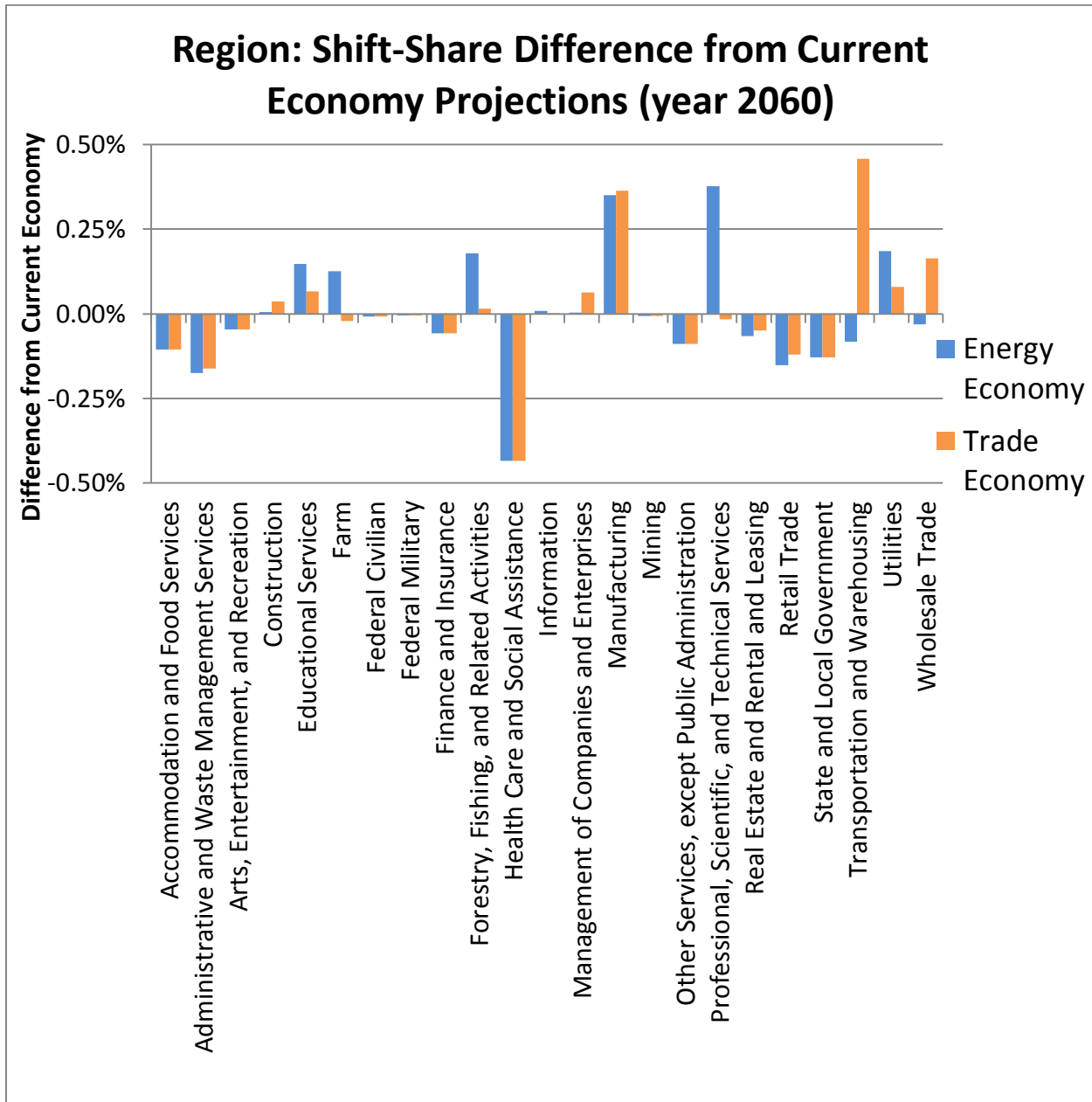
As can be seen above, there are not many significant differences between the amount of jobs in each sector. The major differences may occur in the projected spatial location of the jobs, but the overall difference from the Current Economy Future is not more than 0.5% in any given NAICS cluster.