

**Tennessee Automotive Manufacturing Research:
Using Volkswagen Mega Site Data to Project the Impact of Blue Oval
City**

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I. Introduction

Basis and Purpose of this Study

In 2021, Ford Motor Company announced the opening of Blue Oval City. Blue Oval City will be Ford's new manufacturing site for the new line of electric F150 Pick-Ups, located in Haywood County, Tennessee. This study was performed to determine the impact Blue Oval City will have on the Haywood County Region. Comparably, the impact of the Volkswagen automotive manufacturing site had on the Hamilton County Region between 2010 – 2020 is used to project the impact Blue Oval City will have on the Haywood County Region between 2020 – 2030. This analysis was performed using 10-year data analysis focused on the Volkswagen site in Hamilton County, Tennessee, from 2010 to 2020, and the assumptions formulated based on the data retrieved are used to project the effect that Blue Oval City will have on the Haywood County region from 2020 to 2030.

After observing a positive trend in the financial and demographic data surrounding the 10-year analysis of the Volkswagen site from 2010 to 2020, this study strives to determine the potential impact Ford's Blue Oval City site will have on the Haywood County Region between 2020 – 2030 and if that impact proves beneficial for the economic and social prosperity of the Haywood County Region. The 2030 projection data may be useful in determining the true economic impact Blue Oval City will have and if that impact would be beneficial to society, banking, and overall business in West Tennessee.

Information/Data Displayed in this Study

This report contains background information, demographic analysis, and banking data relating to the 10-year analysis of the Hamilton County Region and the 10-year projection of the Haywood County Region. The information consists of historical and general information regarding the Volkswagen manufacturing site in Hamilton County and the future Blue Oval City manufacturing site in Haywood County. Demographic information and banking data are used to support predictions of how Blue Oval City could affect the Haywood County Region. The demographic and banking information consists of population, education attainment, unemployment, mean household income, number of households, number of residents per household, and midyear deposit totals.

II. Background & Historical Information

Volkswagen's Site

Volkswagen, Chattanooga, TN:

- i. **Location:** 8001 Volkswagen Drive, Chattanooga, TN 37416; **Hamilton County**
- ii. **Announced:** 2008 **Opened:** 2011
- iii. **Acreage:** 1,400 acres
- iv. **Other Plants:** An additional site that produces vehicle lines of Audi, Bentley, Bugatti, Lamborghini, Volkswagen, and VW Credit, Inc.
- v. **Purpose:** Volkswagen strives to be the world's number one automaker in the world, and that was the goal it had in mind when opening the Chattanooga location. After looking at over three hundred possible sites, Chattanooga was chosen due to its skilled workforce and local and state leadership partners. The original objective of the new Volkswagen location was to develop and launch the new Passat model of cars. Currently, the location manufactures both the Passat and Atlas vehicle models.

- vi. **Employment Details:** Approximately 3,800 employees are currently employed at Chattanooga Volkswagen. Employees have access to multiple onsite and near-site amenities such as medical services, dental services, eye services, childcare, health centers, volunteer charities, diversity advisory, and educational programs.
- vii. **Interesting Facts**
 - a. An article written by the Greater Chattanooga Economic Partnership references a study by the University of Tennessee Center for Business. The study found that Volkswagen’s operations in Chattanooga aided in the creation of approximately 12,000 indirect net new jobs that amounted in a \$643 million annual payroll by the year the study was performed.
 - b. Volkswagen’s Chattanooga plant is the only LEED Platinum-certified auto manufacturing facility in the world. The Chattanooga plant includes a 66-acre solar park with more than 33,000 solar panels, a rainwater reuse program, and an advanced painting process that cuts carbon dioxide emissions by 20%.

Ford’s Blue Oval City Site

Blue Oval City, Stanton, TN:

- i. **Location:** Stanton, TN 38069; **Haywood** County
- ii. **Announced:** 2021 **Projected to Open:** 2025
- iii. **Acreage:** 3,600 acres
- iv. **Other Plants:** The vehicle center will be onsite, along with one on-site SK Innovations battery plant. A second SK battery plant will be located off site in Glendale, Kentucky, that will work in tandem with the vehicle center.
- v. **Purpose:** When referring to the new Blue Oval City plant, Ford CEO Jim Farley stated, “This is our moment—our biggest investment ever—to help build a better future for America.” Ford and SK Innovations are partnering to innovate the current way electric vehicles are manufactured. Furthermore, Ford hopes to become the new leader in the electric vehicle market, starting with the new E F150 pickup truck.
 - a. The creation of Blue Oval City is a defining step in Ford’s attempting to become the leader in the new era of electric vehicles. Ford highlights three major goals of this new facility. Those goals are accelerating progress to a carbon-neutral future, leading the electric vehicle revolution, and strengthening local communities.
 - b. Ford will be producing its new line of all-electric F150 model trucks. The company will also be working with a battery manufacturer in central Kentucky to design, build, and recycle batteries for electric vehicles.
- vi. **Employment Details:** The new manufacturing mega site is estimated to create approximately 11,000 jobs, consisting of approximately 6,000 direct, on-site employees and 5,000 off-site employees.
- vii. **Interesting Facts**
 - a. In 2021, Tennessee lawmakers signed off on final approval for the \$884 million spending package to begin construction of the Blue Oval City manufacturing plant. The approval consisted of \$500 million for incentives to go directly to Ford, along with \$384 million to fund infrastructure projects, authority expenses, workforce development,

and other services. The total Blue Oval City facility is estimated to cost \$5.6 billion, including both the Ford site and the two SK battery plants (Ford Blue Oval City Incentive Package Approved by Tennessee Legislature, 2021).

- b. Recently, Ford increased its planned EV investment to \$30 billion by 2025, and CEO Jim Farley announced that Ford plans to double its global annual production of electric vehicles to a total of 600,000 units per year by 2024 (Ford Blue Oval City Gets Put 'On the Map' As EV Pivot Takes Shape, 2021).
- c. The Blue Oval City project is the largest and most expensive American investment in electric vehicles, and it is also Ford's biggest investment to date. This project is an exceptionally large undertaking considering how new all-electric vehicles (EVs) are a new investment, indicating Ford sees the risk and challenge as feasible and profitable.

III. Data & Key Assumptions

i. Note:

1. When analyzing and projecting data, one must observe the color coding used to connect the counties between the Hamilton County Region and the Haywood County Region. The counties with the same color coding are connected due to the similarity in population (see population data on pages 7 and 8). The colors coded for the Hamilton regional counties are connected to the same colors coded for the Haywood regional counties, and the color-coded connection indicates where the percent change of the Hamilton regional counties between 2010 – 2020 is being calculated and applied to predict the Haywood County Region's 2020 – 2030 numbers. For example, Bradley County in the Hamilton region is coded blue, and its counterpart, Madison County, is coded blue in the Haywood Region.
2. Furthermore, the percent change of data for the Hamilton regional counties of Bledsoe, Meigs, Sequatchie, and Dade (coded pink) is an average, and that average is indicated at the bottom of the tables and graphs. This change is also true for the Hamilton regional counties of Catoosa and Walker (coded yellow). If the data shown does not indicate this connection, and the Hamilton and Haywood regions are being compared, the connection should be implied.
3. Tables and graphs are listed under their respective data assumptions.

ii. Economic Data Assumptions

(These assumptions are formulated based on the 2010 – 2020 data for the Hamilton County Region and how the data might predict the 2020 – 2030 data for the Haywood County Region.)

- Based on the data observed in the Hamilton County Region, the Haywood County Region will have an increase in the midyear deposits in all counties except the possibility of a decrease in Tipton County deposits.

Hamilton County Region	2010	2020	Percent Change	Haywood County Region	2020	2030
Mid Year Deposit Totals:				Mid Year Deposit Totals:		
Bledsoe County	\$ 104,277,000	\$ 159,623,000	53.08%	Crockett County	\$ 288,415,000	\$ 395,820,746
Bradley County	\$ 1,467,150,000	\$ 1,912,243,000	30.34%	Fayette County	\$ 948,879,000	\$ 1,380,108,378
Hamilton County	\$ 6,467,147,000	\$ 9,917,686,000	53.35%	Hardeman County	\$ 371,079,000	\$ 544,967,534
Marion County	\$ 319,627,000	\$ 469,405,000	46.86%	Haywood County	\$ 278,233,000	\$ 381,846,969
Meigs County	\$ 99,138,000	\$ 91,413,000	-7.79%	Lauderdale County	\$ 452,775,000	\$ 664,946,481
Rhea County	\$ 378,749,000	\$ 550,876,000	45.45%	Madison County	\$ 2,276,742,000	\$ 2,967,442,969
Sequatchie County	\$ 153,835,000	\$ 265,915,000	72.86%	Tipton County	\$ 707,879,000	\$ 693,013,541
Catoosa County (GA)	\$ 862,176,000	\$ 840,537,000	-2.51%	Marshal County (MS)	\$ 471,699,000	\$ 686,068,236
Dade County (GA)	\$ 140,672,000	\$ 184,038,000	30.83%	Benton County (MS)	\$ 36,728,000	\$ 50,405,507
Walker County (GA)	\$ 520,412,000	\$ 511,625,000	-1.69%			
37.24%	(Average percent change of Bledsoe, Meigs, Sequatchie, and Dade)					
-2.10%	(Average percent change of Catoose and Walker)					

Hamilton County Region	2010	2020	Percent Change	Haywood County Region	2020	2030
Mid Year Deposits	\$ 10,513,183,000	\$ 14,903,361,000	41.76%	Mid Year Deposits	\$ 5,832,429,000	\$ 8,267,980,772
Number of Banking Offices	237	186	-21.52%	Number of Banking Offices	118	93
TN Deposit Market Share %	7.84%	6.93%	-11.61%	TN Deposit Market Share %	2.81%	2.48%

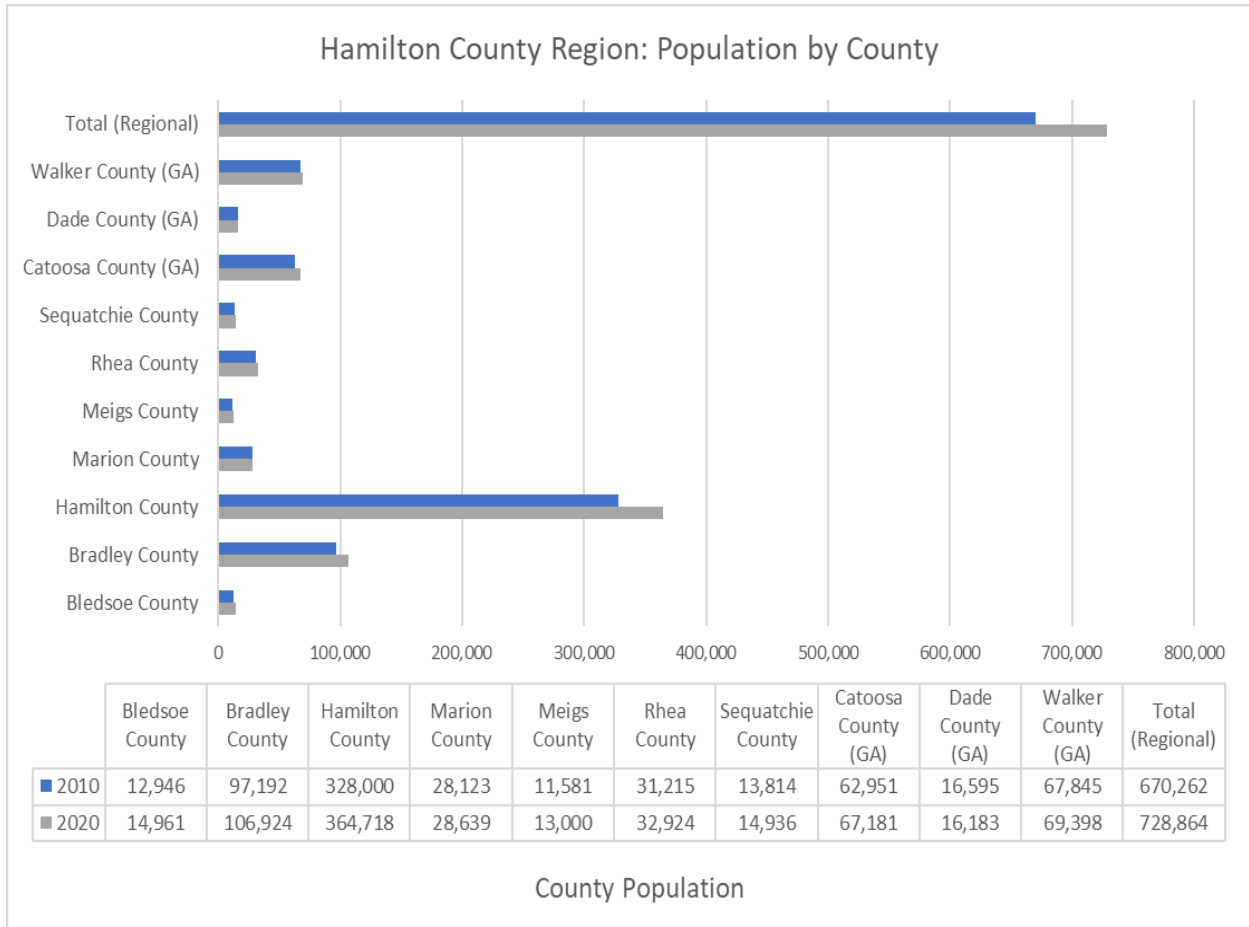
- The Tennessee state-wide deposit market share is unpredictable. However, based on Hamilton County Regional data between 2010 and 2020, the Haywood regional market share could decrease overall between the years 2020 and 2030 when compared to the rest of the state market share. This decreasing trend could be attributed to the competition with the explosive growth of other Tennessee regions such as the Nashville, Tennessee, Region.
- During the decade of 2010 – 2020, a nationwide push to consolidate banking offices continued to occur. This trend is reflected in the data between 2010 and 2020 in the Hamilton County Region, but this trend may not continue with the possibility of economic prosperity and banking opportunities created by Blue Oval City. However, if the consolidation continues within the 2020 – 2030 decade, the Haywood County Region could follow this same trend.
- When compiling the data of the Haywood County Region and comparing it to the same compiled data of Hamilton County Region, Haywood County Region's deposit totals are projected to increase by \$2.5 billion between 2020 and 2030.

Hamilton County Region	2010	2020	Percent Change	Haywood County Region	2020	2030
Mid Year Deposits	\$ 10,513,183,000	\$ 14,903,361,000	41.76%	Mid Year Deposits	\$ 5,832,429,000	\$ 8,267,980,772
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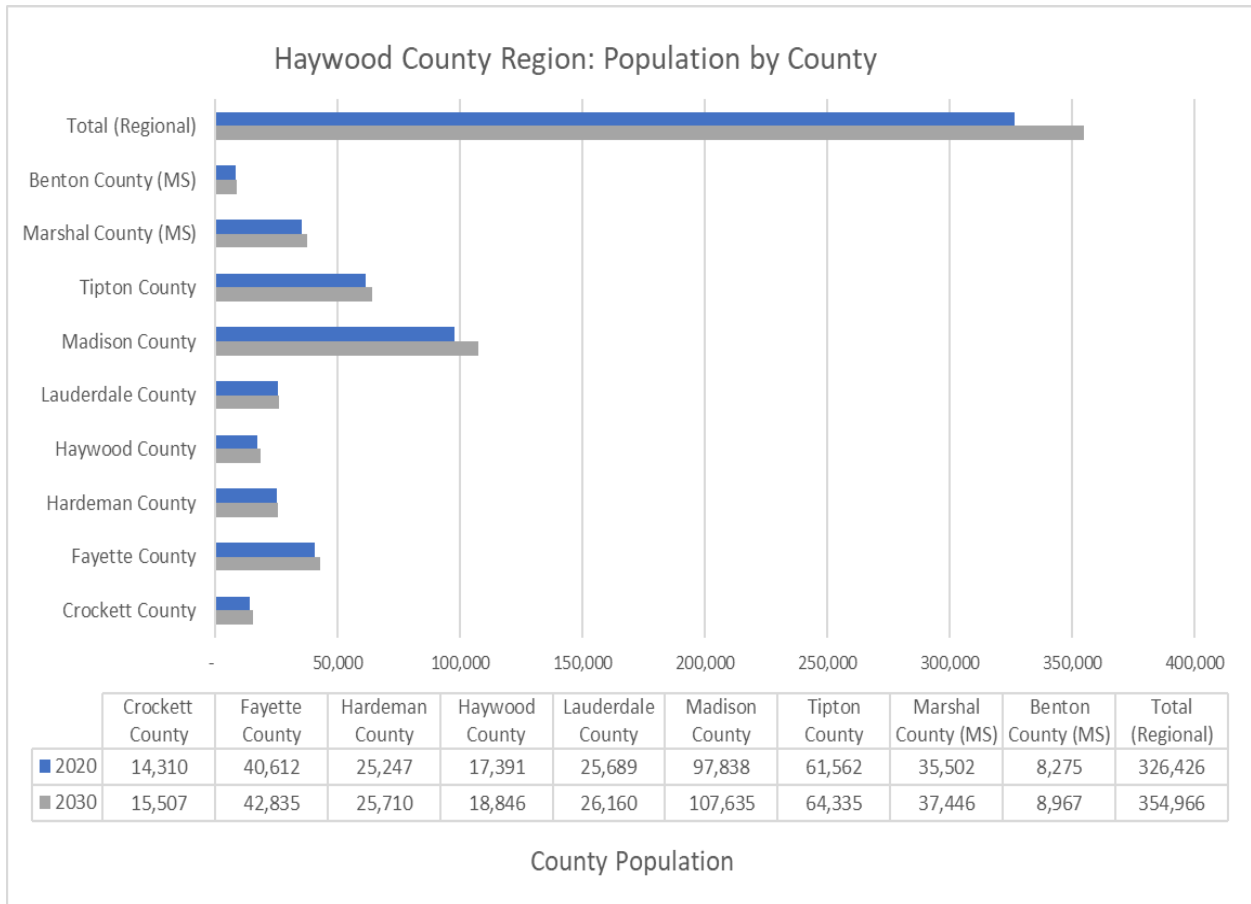
iii. Demographic Data Assumptions

(These assumptions are formulated based on the 2010 – 2020 data for the Hamilton County Region and how the data might predict the 2020 – 2030 data for the Haywood County Region.)

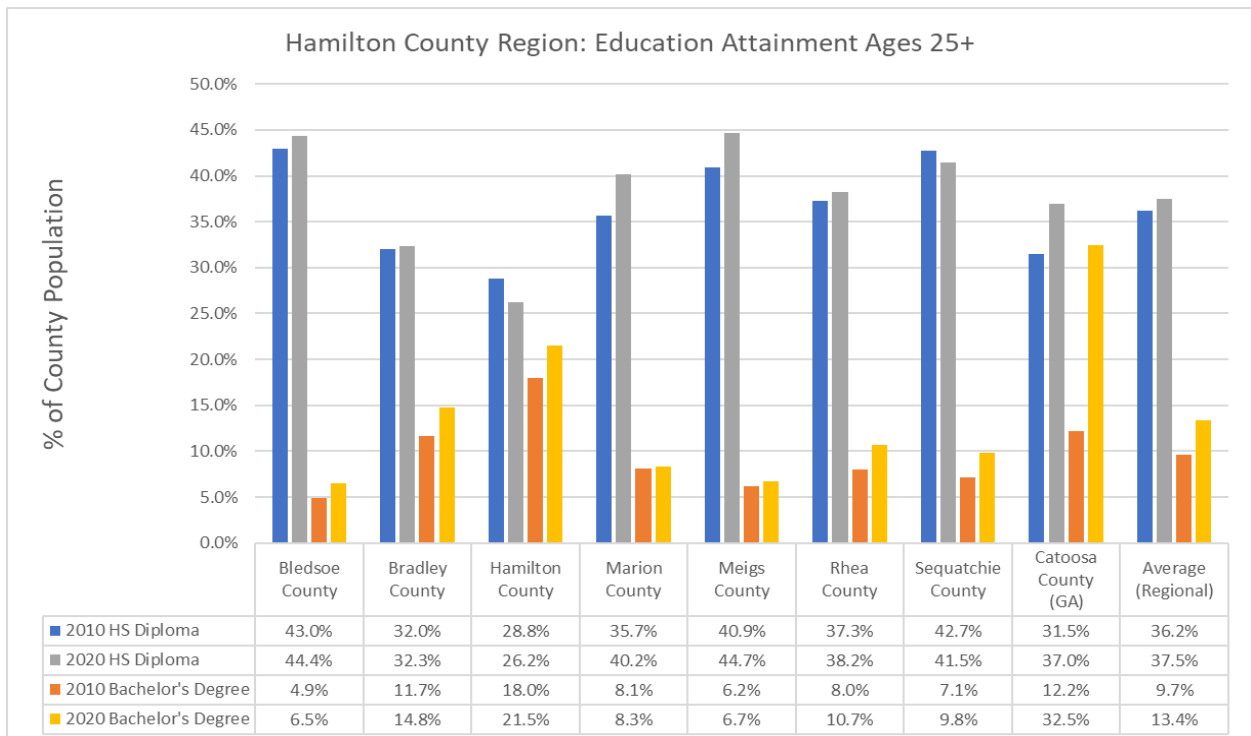
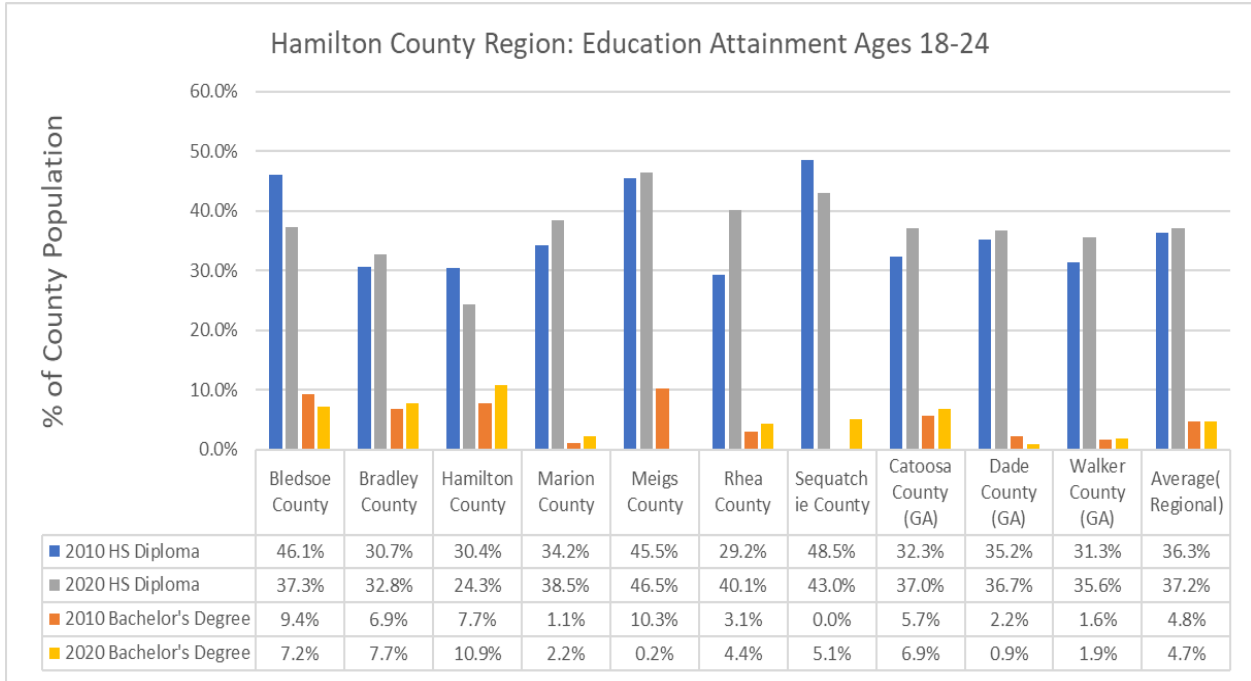
- From 2010 – 2020, the population of each county within the Hamilton County Region increased by a total of 58,602 people due to the operation of the Volkswagen manufacturing plant.



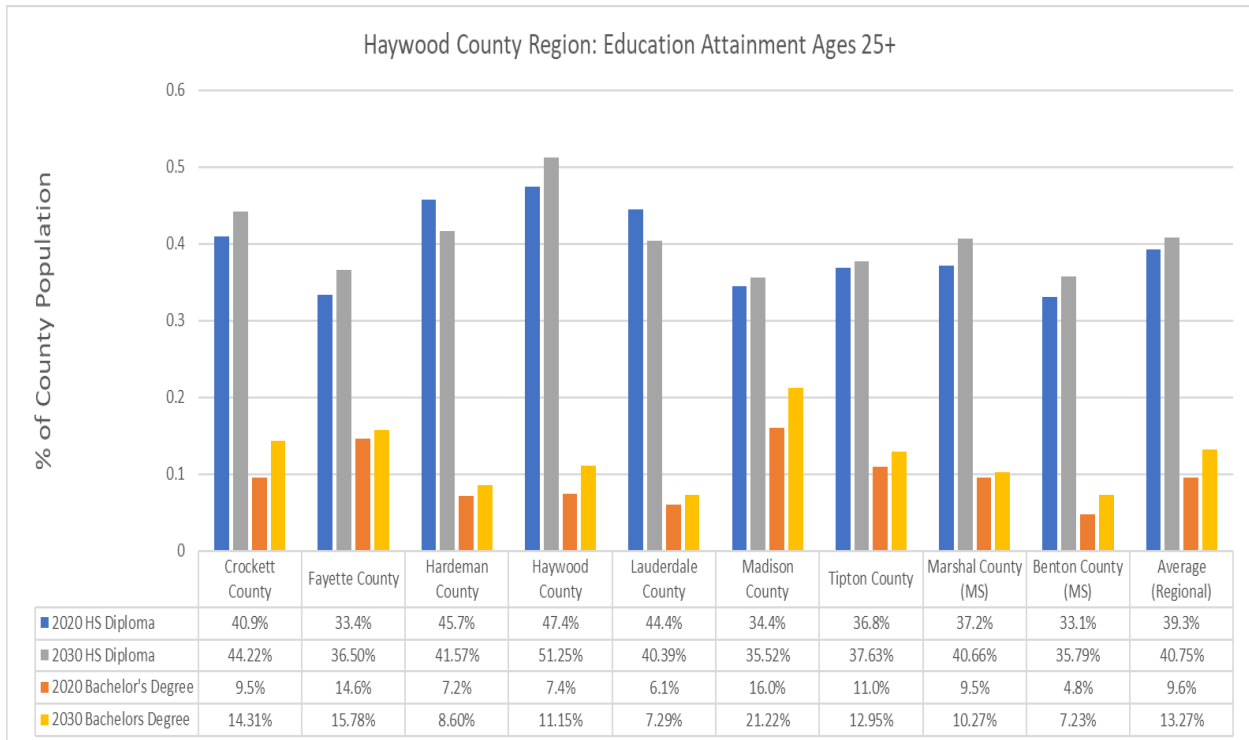
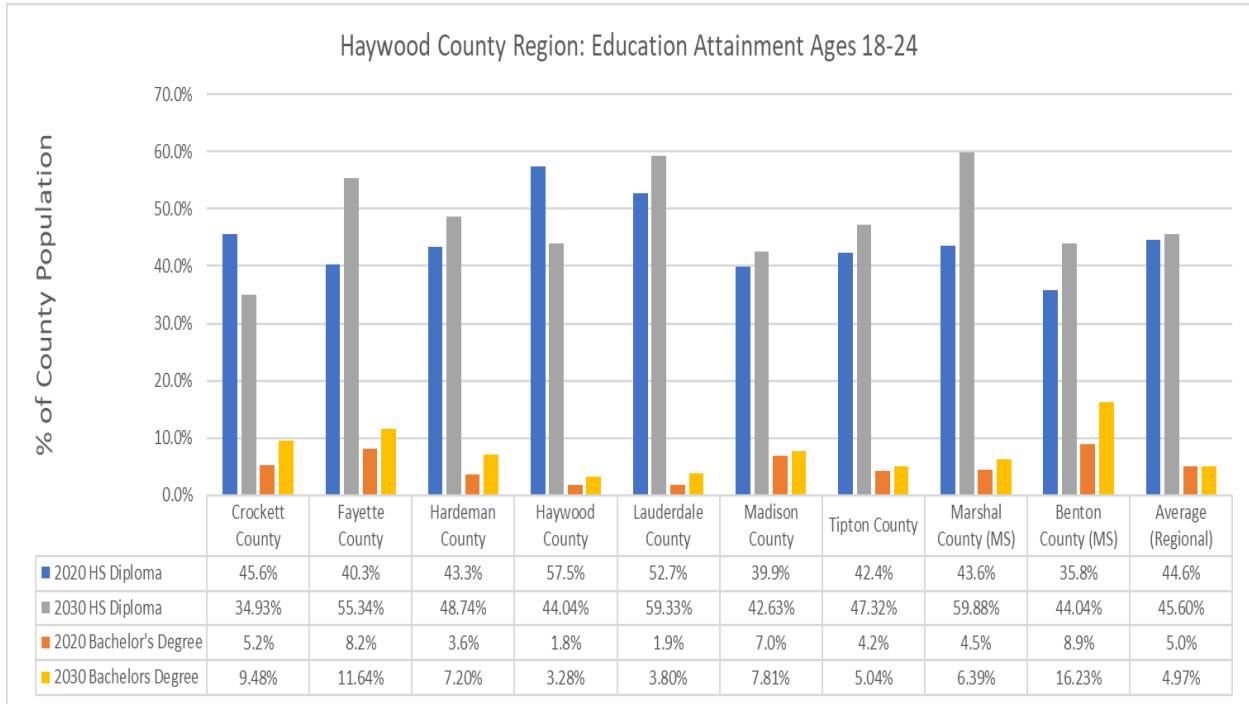
- Through the opportunities created by the Blue Oval City manufacturing plant, population should increase for all counties within the Haywood County Region between 2020 and 2030. The total increase in population for the Haywood County Region should be an average of approximately 28,500 people. Between 2010 and 2020, the Haywood County Regional average population decreased by 2,707 people. The jobs created by Blue Oval City should reverse this trend for the 2020 – 2030 decade.



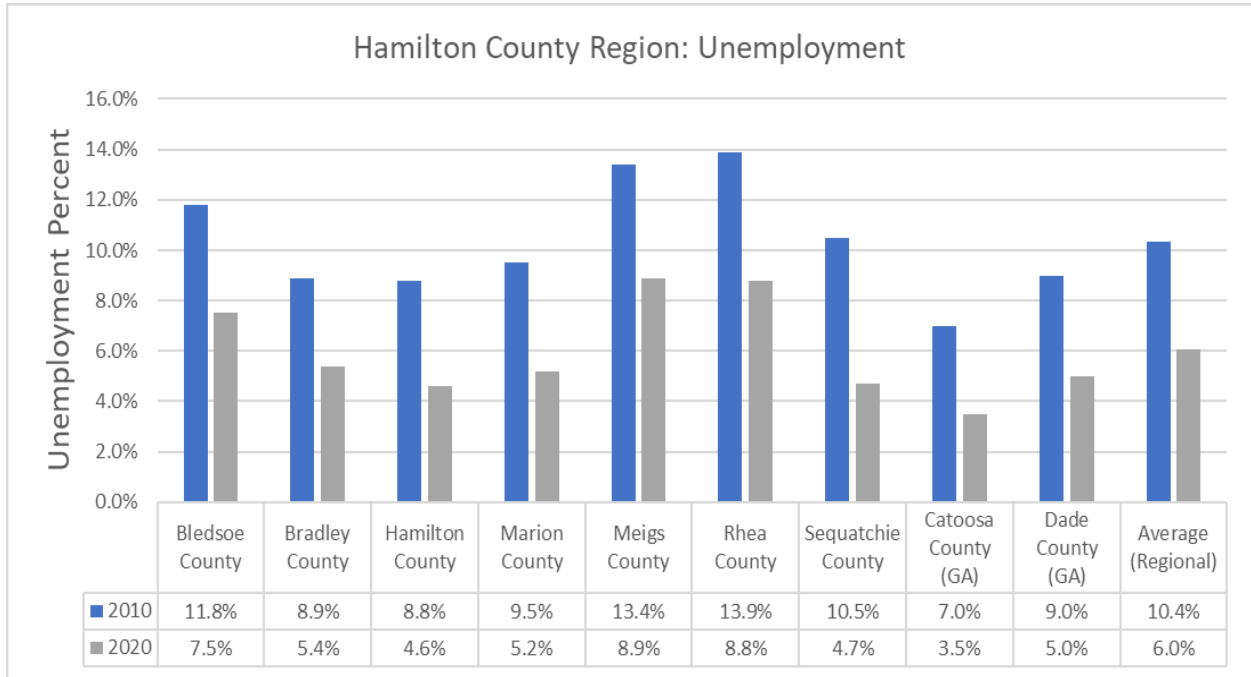
3. From 2010 – 2020, the education attainment for each county within the Hamilton County Region generally increased due to the educational requirement of manufacturing jobs and education programs created by the Volkswagen manufacturing plant. The 18–24 age bracket had a regional average increase of 0.9 % in high school education, and the 25+ age bracket regional average increased in high school education by 1.3% and bachelor’s degree attainment by 3.7%.



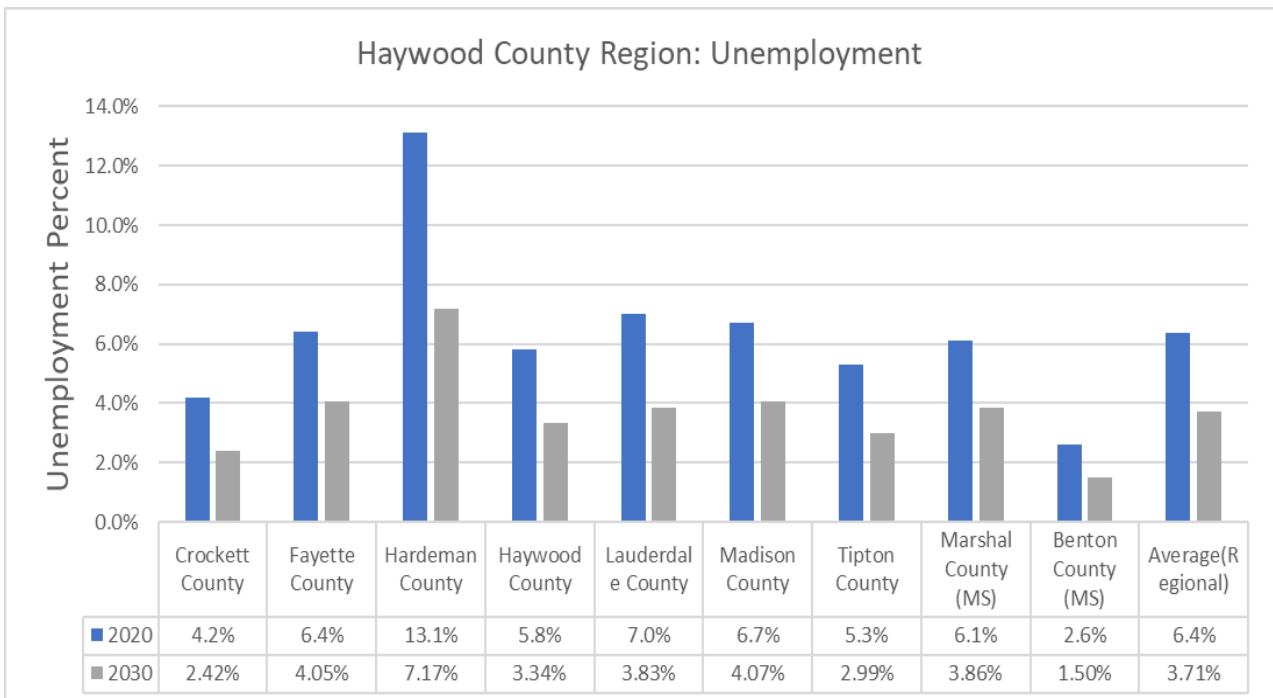
4. Through the educational requirement of manufacturing jobs and the education programs offered by the Blue Oval City manufacturing site, educational attainment should increase in each county of the Haywood County Region. The 18–24 age bracket high school education should have a regional average increase of 1.0%, and the 25+ age bracket regional average should increase in both high school education by 1.5% and bachelor’s degree attainment by 3.7%.



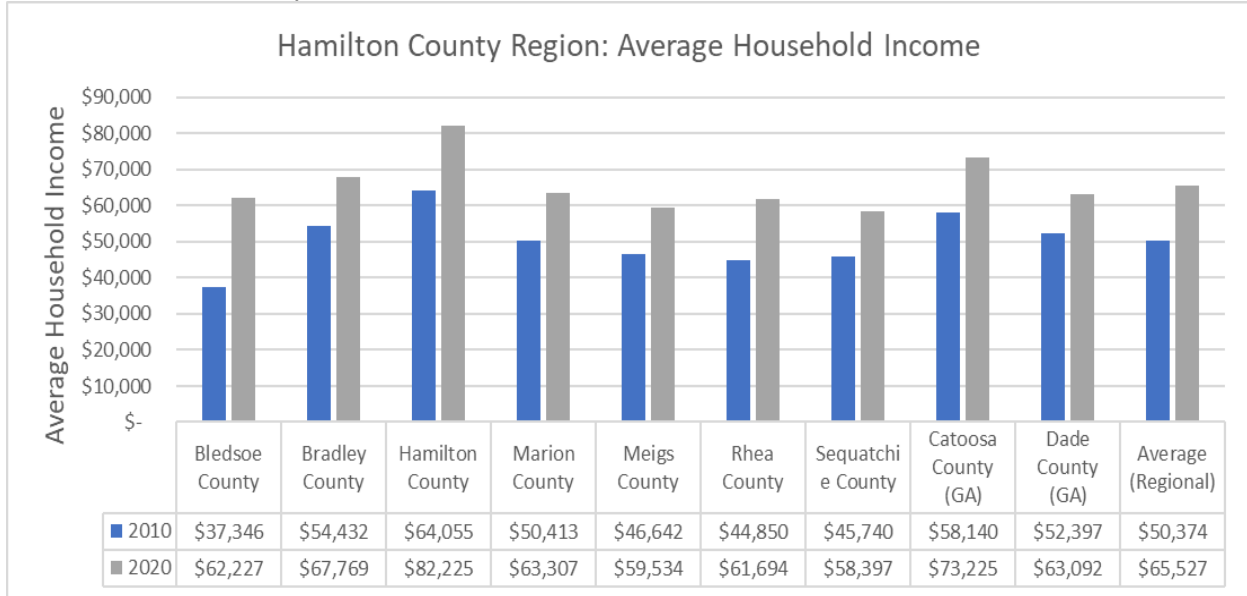
5. From 2010 – 2020, the unemployment for each county within the Hamilton County Region decreased from an average of 10.2% to 6.0% due to the jobs and opportunities created by the Volkswagen manufacturing plant.



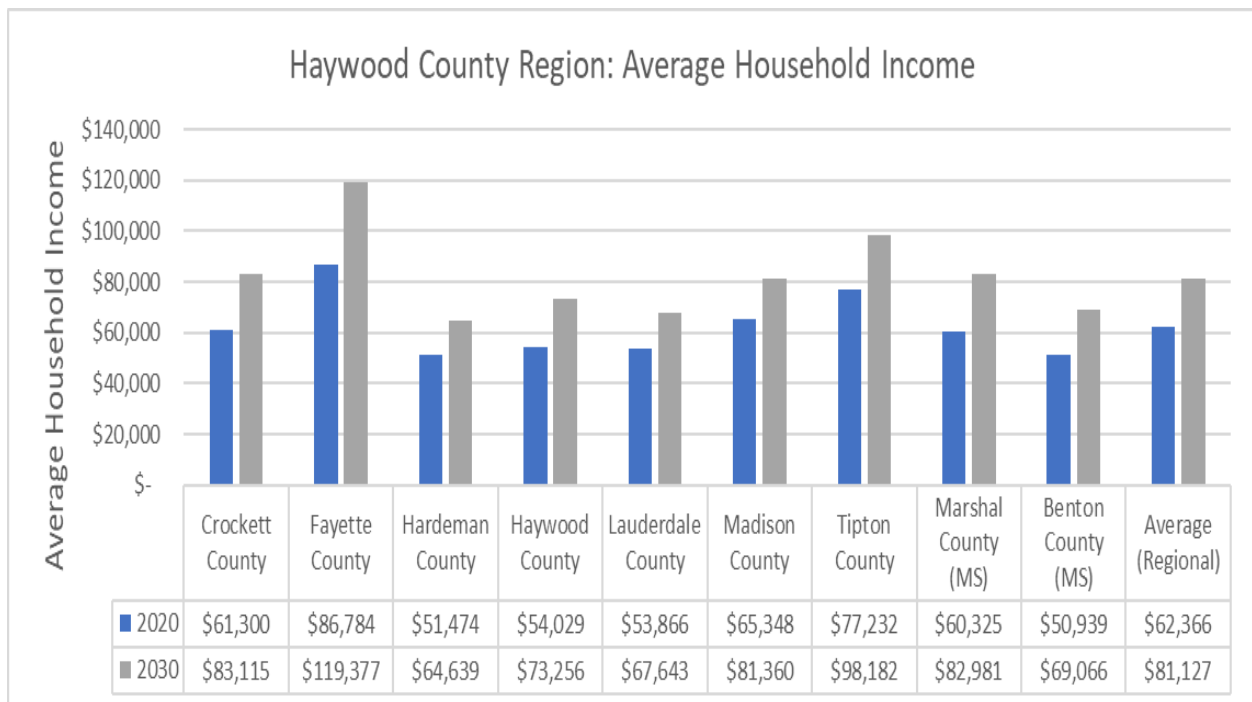
6. Through the jobs created by the Blue Oval City manufacturing plant, average unemployment should halve (42.0%) in all counties within the Haywood County Region.



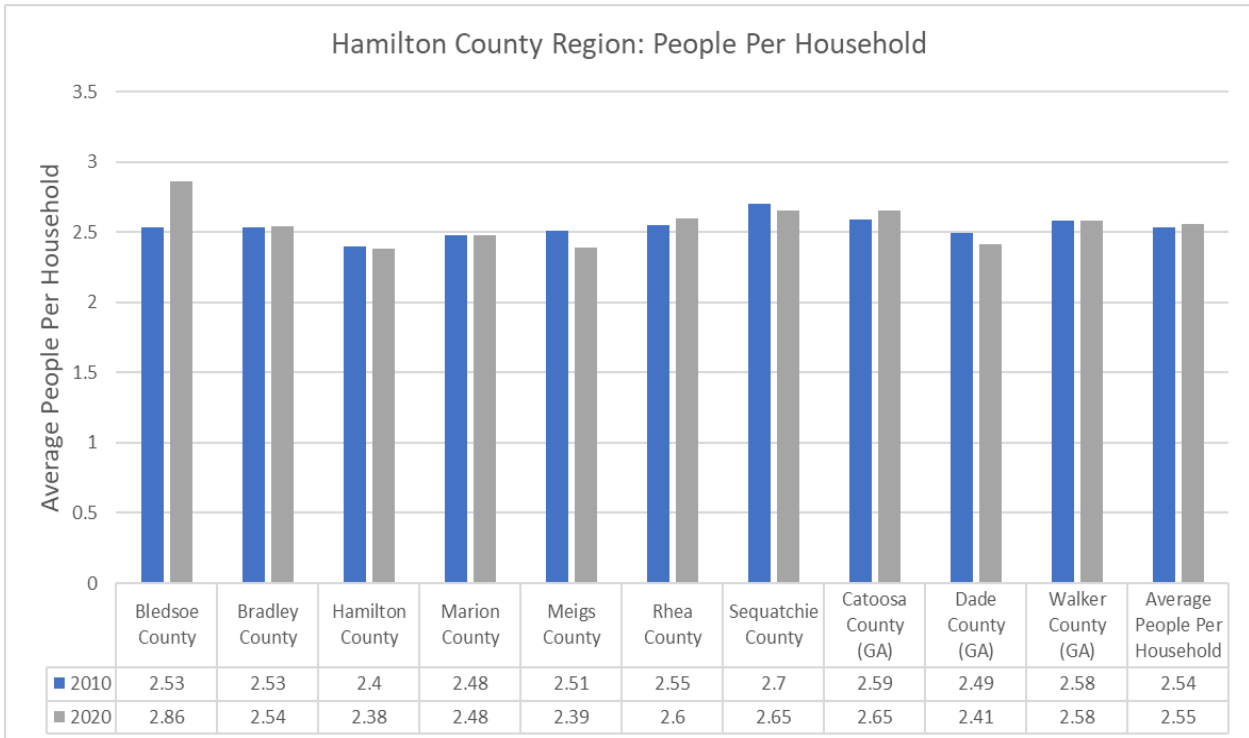
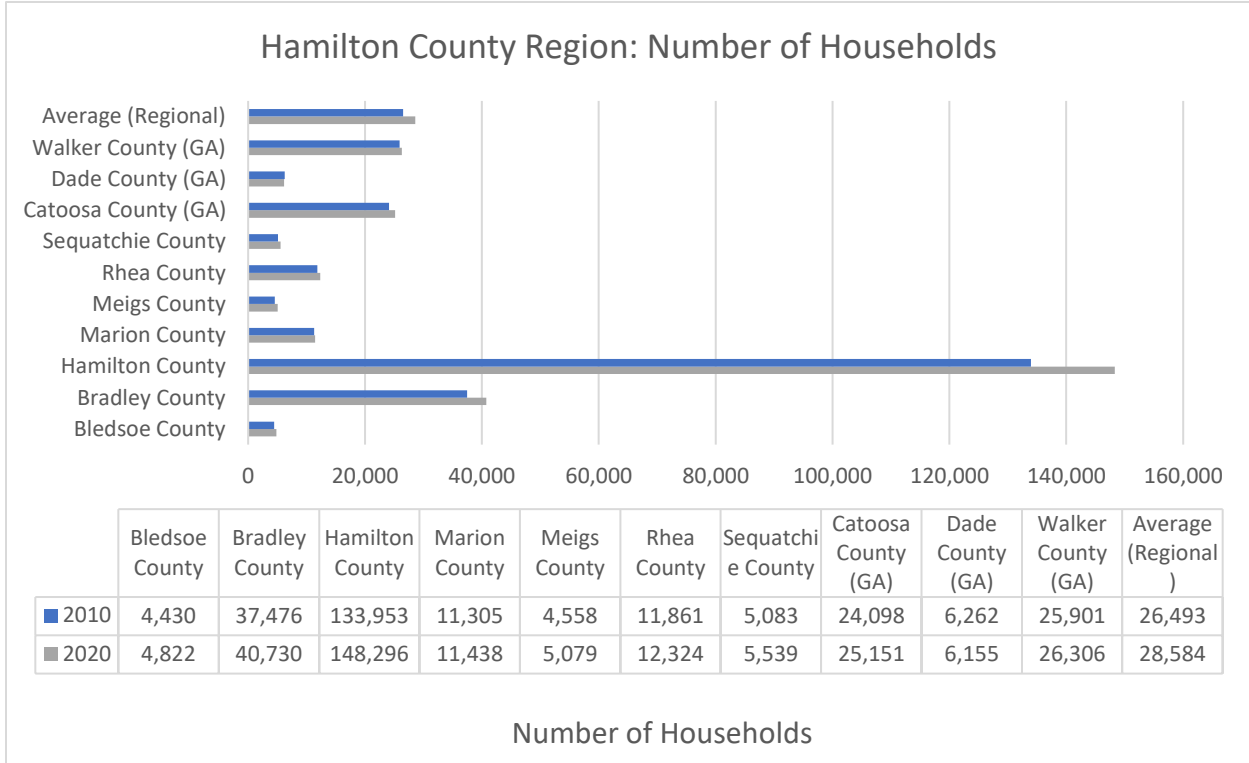
7. From 2010 – 2020, the average household income for each county within the Hamilton County Region increased by an average total of \$15,153 due to the positive economic impact of the Volkswagen manufacturing plant.



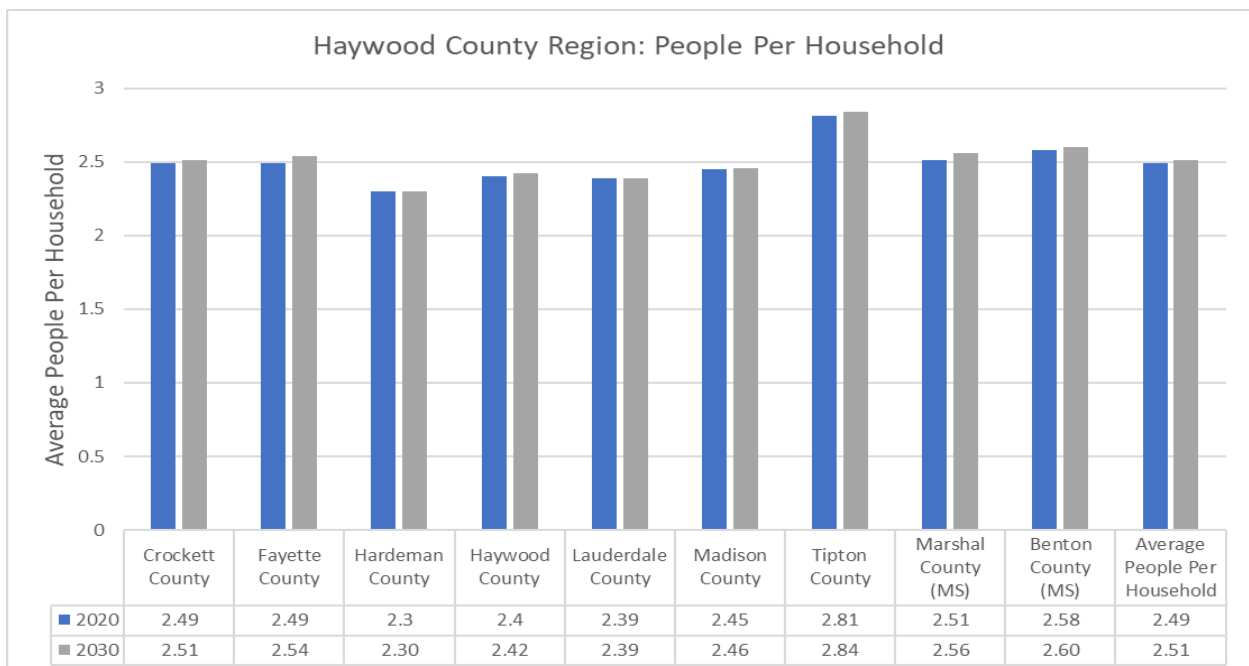
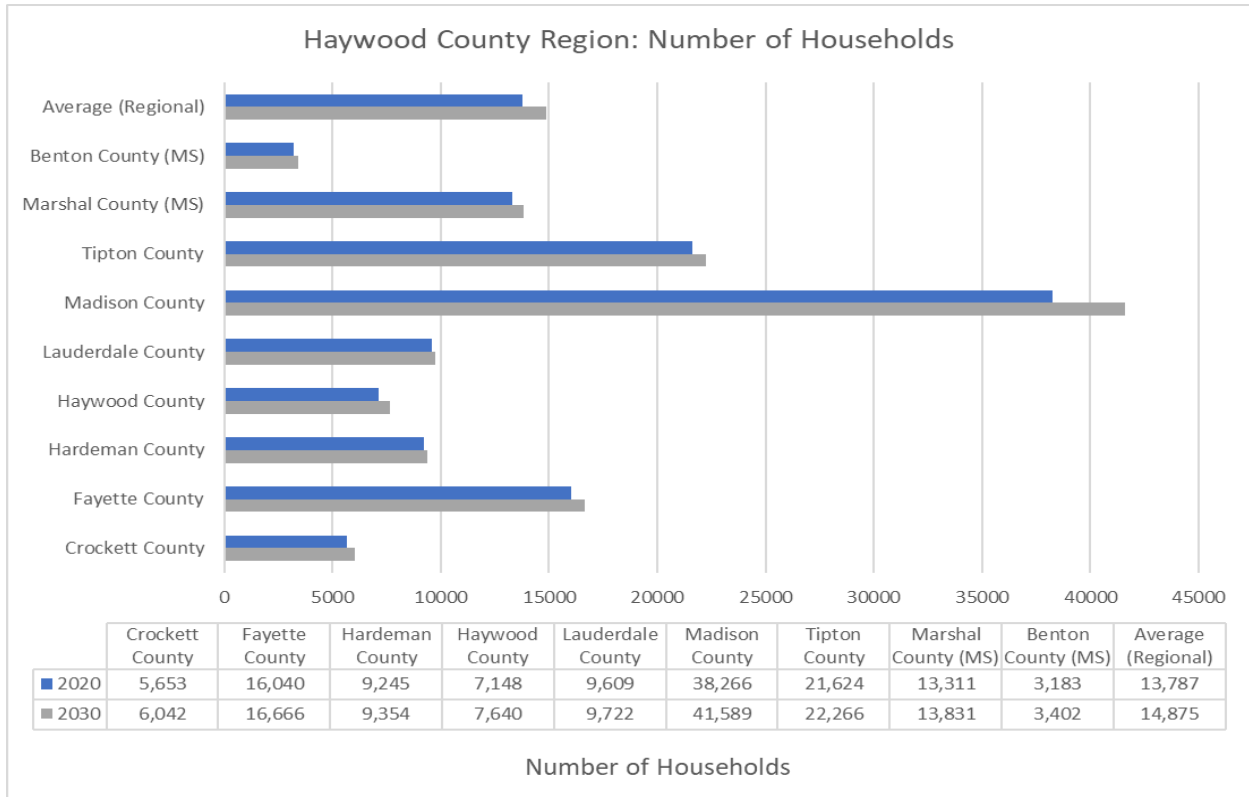
8. Through the positive economic impact of the Blue Oval City manufacturing plant, the average household income should increase, in all counties, by an average total of \$18,761 within the Haywood County Region.



9. From 2010 – 2020, the number of households for each county within the Hamilton County Region increased by a total average of 2,091 houses due to the jobs and economic opportunities created by the Volkswagen manufacturing plant. However, the average number people per household generally had no change.



10. Through the increased population attributed to the jobs and economic opportunities create by the Blue Oval City manufacturing site between 2020 – 2030, the number of households in each county within the Haywood County Region should increase by a total average of 1,088 houses. Additionally, the average number of people per household could slightly increase.



11. When observing the demographic data between 2010 and 2020 for the Hamilton County Region, the change in rural and urban counties is noticeably more significant than that of mid-sized, mildly developed counties, and this change could be also true for the Haywood County Region from 2020 – 2030.
12. The regional average county household income is projected to increase by 29.93% between 2020 and 2030 in the Haywood County Region.
13. The Hamilton County Region education attainment had varying change between 2010 and 2020. High school education attainment slightly decreased while bachelor's degree obtainment increased. This change could have been attributed to the Volkswagen manufacturing site. When observing educational levels in the Haywood County Region, the population for the bracket of ages 25+ is projected to increase drastically more than the age bracket of 18-24. This change could be attributed to educated populations moving to the area, or people are receiving more education to qualify for manufacturing positions.
14. Reflecting the change in the Hamilton County Region between 2010 and 2020, unemployment in the Haywood County Region is projected to decrease by 38.37% between 2020 and 2030.
15. The population increase in the Haywood County Region could be attributed to people relocating to the Haywood County Region seeking employment. The people per household should remain constant, but if the number of households increase as projected (8.02%), the population of the region will increase substantially.
16. The counties included in the Haywood and Hamilton County Regions, which are not in Tennessee, are projected to change in the same manner that the in-state counties are affected.

Tennessee Demographic Data (Whole State)									
Demographics	Hamilton County Region						Haywood County Region		
	2010		2020		Percent Change	Percent Change	2030 Projections		
(Education Level)	High School Equivalent	Bachelor's Degree	High School Equivalent	Bachelor's Degree	(HS Equivalent)	(Bachelor's)	High School Equivalent	Bachelor's Degree	
Population	6,346,105		6,910,840		8.90%		7,525,830		
Education Attainment (18-24)	35.80%	7.80%	35.20%	10.60%	-1.68%	35.90%	34.61%	14.41%	
Education Attainment (25+)	33.40%	14.70%	31.80%	17.80%	-4.79%	21.09%	30.28%	21.55%	
Unemployment	8.60%		5.30%		-38.37%		3.27%		
Mean Household Income	\$ 59,212		\$ 76,937		29.93%		\$ 99,968		
Number of Households	2,443,475		2,639,455		8.02%		2,851,154		
People per Household	2.49		2.51		0.80%		2.53		

IV. Concluding Summary

Conclusion

To determine the effects Blue Oval City could have on the Haywood County Region, the acquired data from the Hamilton County, between the years 2010 and 2020, and the acquired data from Haywood County Region, in 2020, are compared to estimate what 2030 data will be in the Haywood County Region. The core and contiguous counties of the Hamilton and Haywood Regions were connected based on similar population levels between 2010 and 2020. By analyzing the percent change of banking and demographic data between 2010 and 2020 in the Hamilton County Region, 10-year projections can be made for the future banking and demographic data points in the Haywood region between 2020 and 2030.

These projections can be used to estimate the impact Blue Oval City will have on the Haywood County Region's banking industry and demographics. Furthermore, projections can be used to help organizations and businesses make informed business decisions concerning the future of West Tennessee.

Significant Projections

The following projections are based on data evidence presented in this report when using data from the Hamilton County Region to project Haywood County Region data between 2020 – 2030.

1. Based on the data collected on **mid-year deposits totals**, there should be an average increase of \$2.5 billion (41.8%) in deposits in the Haywood County Region due to the introduction of Blue Oval City. This projected increase should be an indicator of the economic benefits Blue Oval City will bring to the region.
2. The projected data of **the deposit market share** in the Haywood County Region shows a decrease from 2.8% to 2.5% in the average market share. This decrease can be attributed to the significant growth of other Tennessee regions such as the Nashville area.
3. The projection data predicts a decrease of 21% in the **number of banking offices** in the Haywood County Region. This decrease is expected due to the continuous consolidation of banking offices in Tennessee, but this trend may not continue due to the smaller size and possible economic growth in the Haywood County Region
4. Due to the **growing number of households and job opportunities** that will result from the operation of Blue Oval City, **the population** of the Haywood County Region should increase by 28,500 people (8.7%).
5. Due to Blue Oval City creating jobs that demand a more educated workforce and offering new educational programs for employees, **education attainment** of the Haywood County Region will increase. The increase is projected to affect multiple facets of education, mainly consisting of the 18-24 year and 25+ year age categories of both **high school education and bachelor's degree attainment**. The Haywood County Region should receive a 1.0% increase in high school graduation for the 18-24 age bracket. Additionally, the 25+ age bracket should receive an increase in high school graduation by 1.5% and an increase in bachelor's degree attainment by 3.7% for the 25+ age bracket.
6. A significant decrease of 42.0% (average unemployment of 6.4% in 2020 to 3.7% in 2030) in **unemployment** is projected to occur in the Haywood County Region. This decrease should result from the Blue Oval City creating direct and indirect jobs opportunities in the region.

7. The new jobs and other economic benefits Blue Oval City will create should lead to a significant increase in the **average household income** of the Haywood County Region. The increase should be more than \$18,000 (30.1%) in annual household income. Though other factors such as inflation can also play a role in this increase, Blue Oval City should be a factor.
8. After the introduction of Blue Oval City in the Haywood County Region, the **number of households** should increase by more than 1,000 homes (7.9%). This projection is made based on the individuals and families that will move to West Tennessee in search for the jobs and opportunities created by Blue Oval City. The number of people per household is projected to remain the same; however, this statistic is still a benefit because this indicates more families, not just individuals, could be relocating to this region resulting in larger populations.

These projections are a few assumptions about the how Blue Oval City will impact the social behavior, economic prosperity, and overall business of the Haywood County Region between 2020 – 2030. The goal and impact of Blue Oval City will be as Ford CEO Jim Farley stated, “This is our moment—our biggest investment ever—to build a better future for America.”

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