

U.S. 70 Corridor Economic Assessment



prepared for

U.S. 70 Corridor Commission and NCDOT

prepared by

Cambridge Systematics, Inc.

with

Sanford Holshouser Economic Development Consulting

March 07, 2014

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report

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date

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Executive Summary

Access for the regional, interstate and international movements of goods, services and people directly impacts long-term economic vitality. This is especially true along the U.S. 70 corridor from Raleigh to Morehead City. The U.S. 70 corridor serves key industries and economic centers, connecting the Raleigh, Smithfield, Goldsboro, Kinston, Havelock, and Morehead City areas. With a major deep-water port located in Morehead City and connectivity to I-95, the corridor is heavily used for freight movement. The Global Transpark, an air-truck transfer facility that also serves as a commercial service airport, is situated just north of the corridor in Kinston. The U.S. 70 corridor provides for emergency routing, serves as a local commute route for urban areas along the corridor and is the gateway into the state for millions of visitors each year. Additionally, two military bases are located just off U.S. 70 - Seymour Johnson Air Force Base in Goldsboro and Cherry Point Marine Corps Air Station in Havelock. Recognizing the corridor's vital role to the State, North Carolina Department of Transportation has developed a program of improvements to maintain and enhance the performance and integrity of the facility over the coming decades.

The U.S. 70 Corridor Commission commissioned an economic assessment of the U.S. 70 corridor to examine the impacts of investing in a series of bypass and upgrade projects along the corridor as well as the implications of not making the improvements. Understanding and quantifying the economic and strategic importance of the corridor to businesses, residents and communities along the corridor will allow the Commission to demonstrate the economic return on investment accruing from investments as well as the economic cost associated with not completing the system of bypasses.

The purpose of the U.S. 70 Economic Assessment is to examine the economic impacts and opportunities arising from investing in a fully controlled access facility connecting Raleigh to Port of Morehead. The analysis is comprised of two primary components - assessing the economic impact of the improved corridor for existing businesses and residents and estimating the new or induced development that may occur as a result of the improved corridor.

Traffic forecasts for the build and no-build or business as usual (BAU) scenarios are consistent with the forecasts provided by NCDOT. Under the no-build or BAU, average daily traffic along the corridor is projected to reach as much as 82,000 vehicles on the busiest sections by 2040. Under the build scenario, the bypasses will provide significant relief allowing for a safer, more efficient travel on both the existing corridor and the new bypasses. The final set of BAU and Build volumes are illustrated in Figures E.1 and E.2.

Market Access and Competitive Potential. The dependence on U.S. 70 as it relates to economic development possesses many aspects. Industry is

unquestionably tied to U.S. 70 in order to get raw materials into plants and finished product out to customers. Another aspect on which industry depends on U.S. 70 is to get their employees to and from the employment centers. Completion of the improved Corridor will improve safety of those employees, reduce congestion, and potentially reduce commute times. In addition, as has been found in Johnston County, the completion of the improvements and bypass can expand the labor pool and access to new markets. With travel time measured in time not miles, workers can now commute further distances in the same amount of time; greatly increasing the area from which companies can draw from. This is also the case with companies receiving or delivering products used in manufacturing. Table E.1 shows the potential time savings for businesses and commuters to key destinations along the Corridor.

Figure E.1 Traffic Forecasts for Western Portion U.S. 70

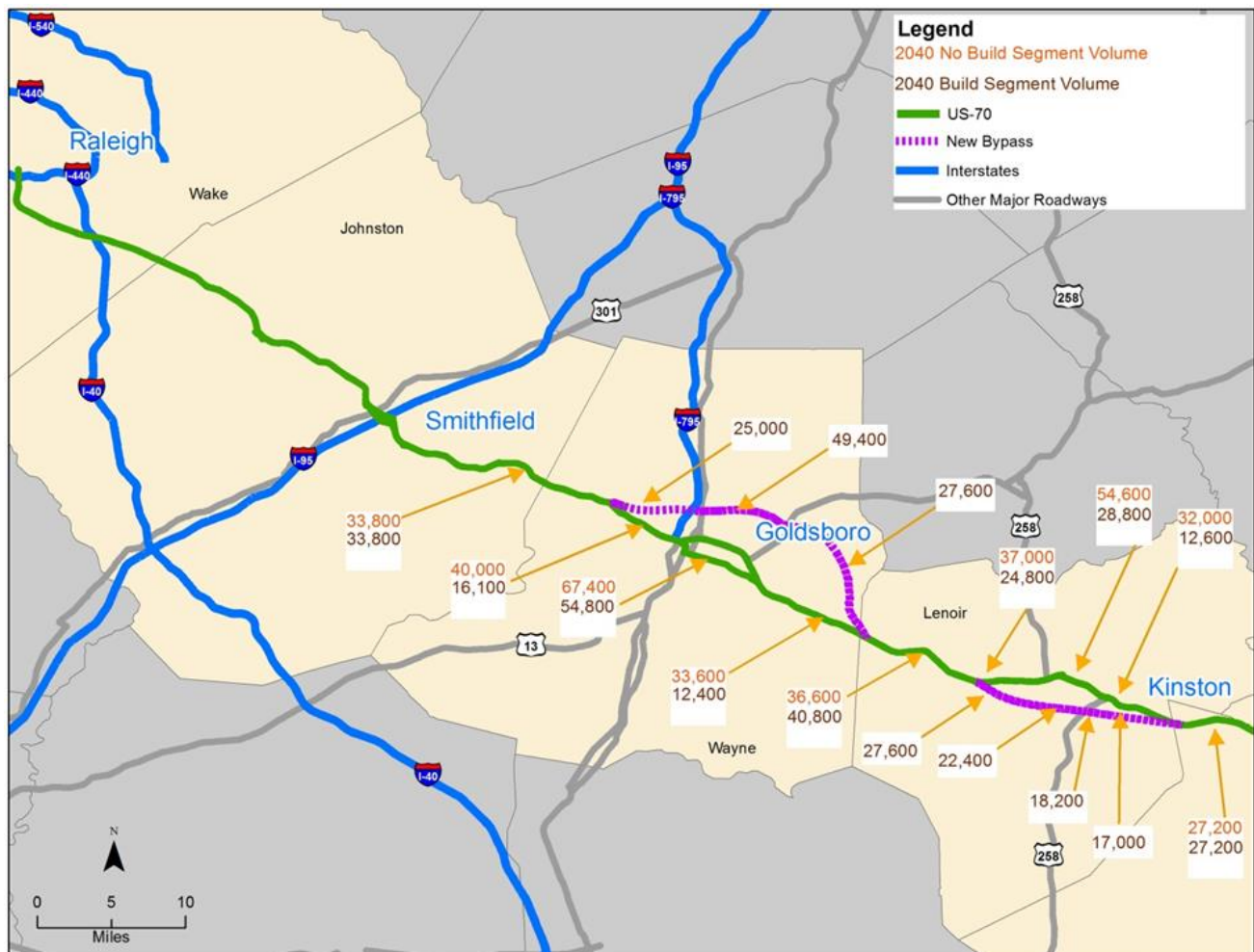


Figure E.2 Traffic Projections for Eastern Portion U.S. 70

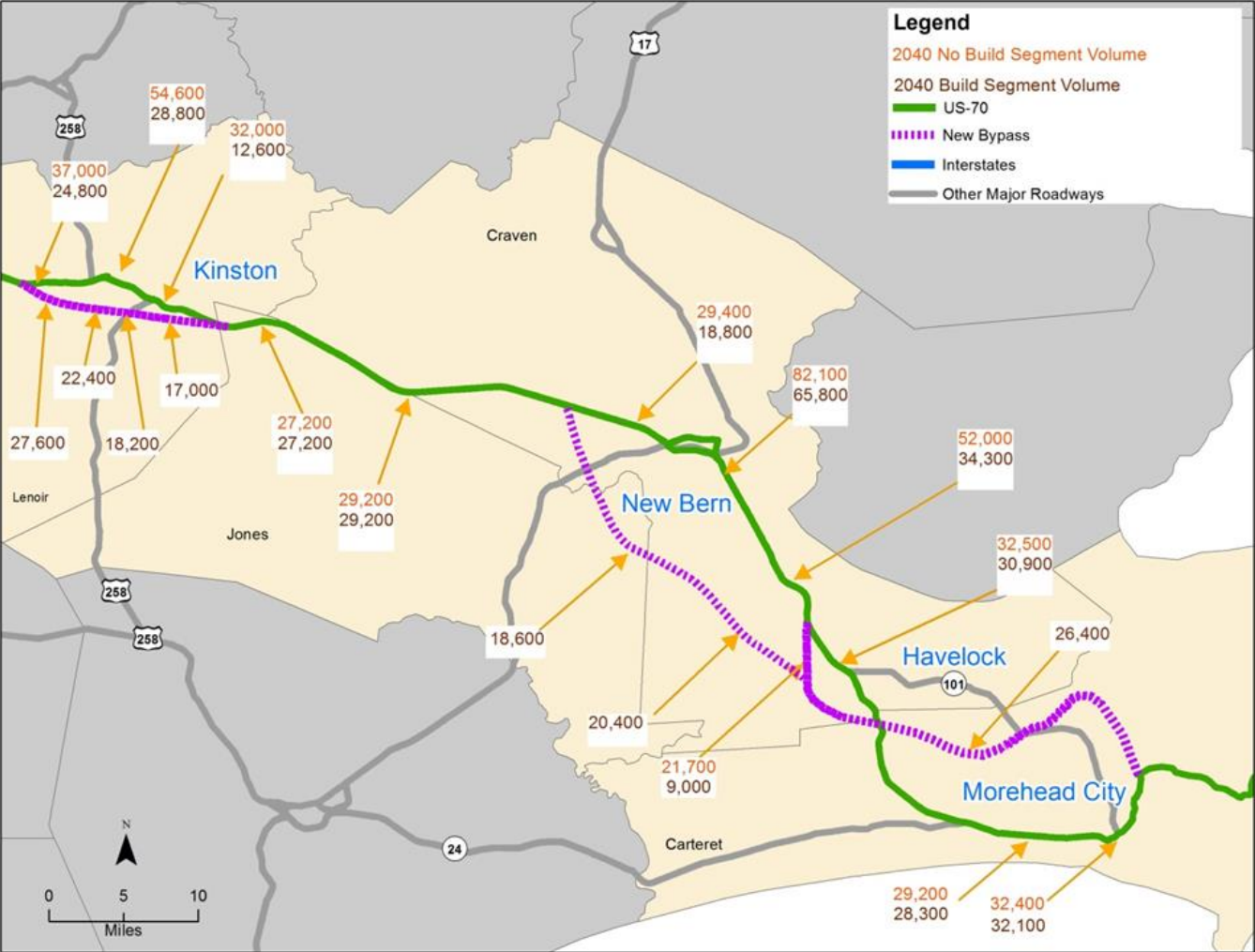




Table E.1 Potential Time Savings for Key Market Access Routes

Route	Distance (miles)	Current Day Travel Times	2040 No build Travel Times (minutes)	2040 Build	Time Savings in 2040
				Travel Times Build (minutes)	
Global TransPark to Raleigh	81.5	91	126	70	56
Global TransPark to Port of Morehead	76.3	88	86	60	26
Global TransPark to I-95	54	60	65	50	15
Port of Morehead to Raleigh	147	152	198	130	68
Port of Morehead to I-95	116	122	135	90	45

Source: Google Maps and Cambridge Systematics, Inc. calculations using travel skims from the NS Statewide model. Build scenario speed limit is assumed as 65 mph.

Unencumbered access to the Global TransPark, Port of Morehead City, and I-95, which are the key drivers of freight traffic, will reduce logistics costs in the region and enhance its competitiveness. The improvements along U.S. 70 could lead to time savings of more than an hour between key economic development assets along the Corridor.

For each scenario, summary impacts for existing business and residents provided include:

- Business transportation costs – Travel time cost plus vehicle operating costs without tolls;
- Gross Regional Product (GRP) – Total value of economic output and general measure of the size of a region’s economy;
- Personal Income – Value of wages, salaries and proprietor’s income; and
- Jobs – Measured in average annual full-time equivalent jobs.

In addition to evaluating the impacts to existing businesses and residents, the study also examined the impact of improved travel times and lower transportation costs on the region’s ability to attract additional businesses and residents. Summary findings of the economic impact arising from improved travel conditions for traffic currently projected to travel the U.S. 70 corridor as well as the impact of closing the job growth gap when compared to other expressway corridors are presented in Table E.2.

Table E.2 Summary of Incremental Economic Impacts of U.S. 70 Corridor, 2014 to 2040

Source of Impacts	Travel Efficiencies Existing Traffic		Induced Traffic from Closing Employment Gap	Total Impacts
	No Build	Build	Build	Build
U.S. 70 Corridor				
Business Transportation Costs (\$ Billions)	\$0.35	(\$0.56)		(\$0.56)
Gross Regional Product (\$ Billions)	(\$0.80)	\$1.20	\$1.35- \$2.60	\$2.55 - \$3.80
Personal Income(\$ Billions)	(\$0.61)	\$0.90	\$1.00 - \$1.95	\$1.90 - \$2.85
Jobs (average annual full-time)	(350)	550	600 – 1,350	1,150 – 1,900
Rest of North Carolina				
Gross Regional Product (\$ Billions)	(\$1.08)	\$1.40		\$1.40
Personal Income(\$ Billions)	(\$0.89)	\$1.05		\$1.05
Jobs (average annual full-time)	(450)	600		600

Source: Cambridge Systematics analysis using a REMI economic model and employment data from NC Department of Commerce

Key takeaways include:

- Not making the improvements along U.S. 70 will result in slower economic growth along the corridor in the order of 350 fewer jobs per year and \$800 million less in GRP and \$610 million less in personal income between 2014 and 2040.
- A fully controlled access highway would give rise to significant travel efficiencies for existing business and residents. These include \$56 million in business cost savings, \$1.2 billion in GRP and over \$900 million in additional personal income between 2014 and 2040. This translates into nearly 550 additional jobs on average per year along the corridor when compared to business as usual. Statewide, the investment is projected to lead to an average of an additional 1,150 jobs annually.
- An interstate quality highway could also help the region be more competitive in inducing additional business and populations. If the corridor could match the growth rates of the similar corridors in eastern



North Carolina, that could translate into 600 to 1,350 additional jobs per year along U.S. 70.

- In total, the upgrading the entire U.S. 70 corridor could give rise to an additional 1,150 to 1,900 jobs per year for communities that rely on the corridor and an additional 600 jobs annually for the rest of North Carolina for a total potential of 1,750 to 2,500 additional jobs annually for the State.



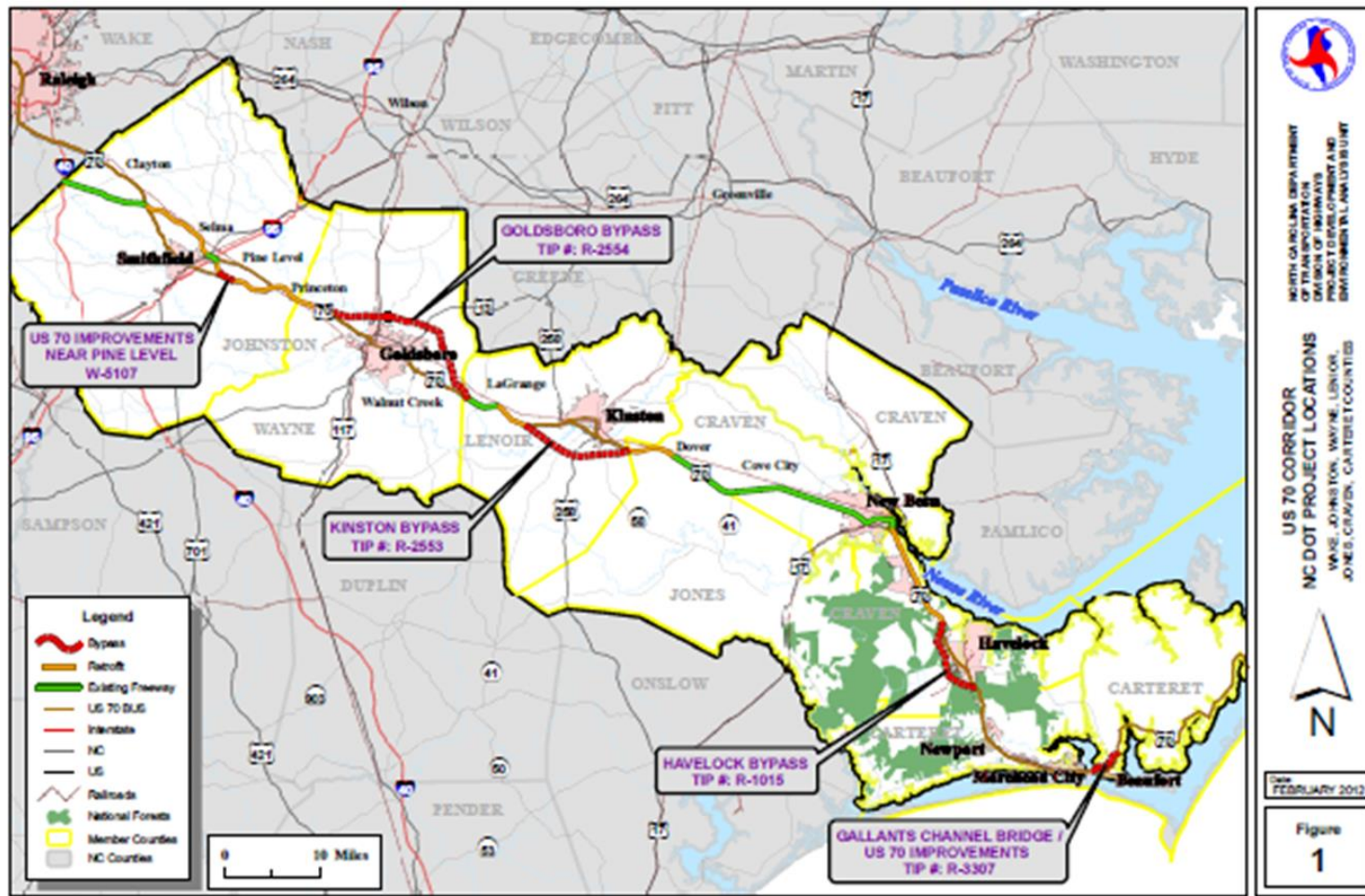
1.0 Introduction

Access for the regional, interstate and international movements of goods, services and people directly impacts long-term economic vitality. This is especially true along the U.S. 70 corridor from Raleigh to Morehead City. The U.S. 70 corridor serves key industries and economic centers, connecting the Raleigh, Smithfield, Goldsboro, Kinston, Havelock, and Morehead City areas. With a major deep-water port located in Morehead City and connectivity to I-95, the corridor is heavily used for freight movement. The Global Transpark, an air-truck transfer facility that also serves as a commercial service airport, is situated just north of the corridor in Kinston. The U.S. 70 corridor provides for emergency routing, serves as a local commute route for urban areas along the corridor and is the gateway into the state for millions of visitors each year. Additionally, two military bases are located just off U.S. 70 - Seymour Johnson Air Force Base in Goldsboro and Cherry Point Marine Corps Air Station in Havelock. Recognizing the corridor's vital role to the State, North Carolina Department of Transportation has developed a program of improvements to maintain and enhance the performance and integrity of the facility over the coming decades (see Figure 1.1).

This facility is also an important piece of multiple highway systems. The entire corridor is included in the National Highway System (NHS), the North Carolina Intrastate System, and the National Military Highway System, also known as STRAHNET. The importance of this corridor has also been recognized in the Rural Prosperity Task Force Report, as one of three corridors statewide that should be improved to assist economic development in the primarily rural areas.

The U.S. 70 Corridor Commission commissioned an economic assessment of the U.S. 70 corridor to examine the impacts of investing in a series of bypass and upgrade projects along the corridor as well as the implications of not making the improvements. Understanding and quantifying the economic and strategic importance of the corridor to businesses, residents and communities along the corridor will allow the Commission to demonstrate the economic return on investment accruing from investments as well as the economic cost associated with not completing the system of bypasses.

Figure 1.1 Proposed Projects Along U.S. 70



Source: NCDOT




1.1 STUDY OVERVIEW

The purpose of the U.S. 70 Economic Assessment is to examine the economic impacts and opportunities arising from investing in a fully controlled access facility connecting Raleigh to Port of Morehead. The analysis is comprised of two primary components – assessing the economic impact of the improved corridor for existing businesses and residents and estimating the new or induced development that may occur as a result of the improved corridor.

Completion of the study involved 6 key elements:

- **Stakeholder interviews and focus groups** – The study team conducted interviews with key stakeholders including public officials, economic developers, shippers, carriers, tourism businesses, military officials and other key stakeholders to assess the relative role of U.S. 70 on their businesses and regional economies and to gain insight into how improvements may impact their communities, both positively and negatively. Following the interviews, a series of focus group meetings were held along the corridor to expand stakeholder input.
- **Traffic analysis and forecasting** – The study team coordinated with the NCDOT to forecast future traffic volumes and conditions with and without the proposed improvements.
- **Economic development analysis** - Using secondary data on industrial mix, employment levels, commuting and trade patterns, and freight transportation dependency, combined with direct input obtained through the stakeholder outreach efforts, the team developed a profile of the region's economy and the role of transportation and U.S. 70 in supporting economic activity and competitiveness.
- **Freight and trade analysis** - An important component of the economic assessment is understanding how freight and trade flows will be impacted, which requires in-depth understanding of local and long-haul goods movement. This assessment examined all of the region's multimodal freight assets including the ports, railroads, Global Transpark and highway connectivity. The study team also examined what is moving, how it is moving and where it is moving to and from to gain insight into how better highway facilities and connectivity may change the competitive position of the region and its key freight facilities.
- **Tourism and military analysis** – The study team assessed the role of U.S. 70 on tourism and military facilities and activity in the region and how improvements or lack of improvement of may impact future levels and location of such activity.
- **Economic modeling** - The economic impact modeling involved developing the direct economic impacts from the traffic forecasting and broader



economic development, estimating the total economic impact of the build and no-build scenarios for each impacted stakeholder group (business travelers, freight, commuters and motoring public, and tourists).

1.2 ORGANIZATION OF THE REPORT

The remainder of the report is organized as follows:

- Section 2 provides a corridor profile that examines the corridor's socioeconomic characteristics and trends.
- Section 3 presents the findings from the economic development assessment that included stakeholder interviews, review of development plans, and an inventory of assets, including for the tourism and military industries.
- Section 4 discusses the improvement scenarios and traffic projections.
- Section 5 presents the economic modeling and findings for both the improved corridor as well as the no build or business as usual scenario.



2.0 U.S. 70 Corridor Profile

The U.S. 70 Corridor traverses through six counties in Eastern North Carolina and serves as the primary route between Raleigh and the Port of Morehead. The counties along U.S. 70 include Carteret, Craven, Johnston, Jones, Lenoir, and Wayne. Along with other major access points, namely I-95 by way of I-795 and I-40 by way of U.S. 117, the region is a hub for manufacturing, agri-business, and military related industries. The region, however, has not seen the same success as those counties located along more recently improved east-west routes in the Eastern North Carolina region. Between U.S. 264, an interstate quality route, in northeastern North Carolina and I-40 in southeastern North Carolina there is almost 80 miles between Greenville and Wallace with no other interstate quality east-west corridors. U.S. 70 provides the only direct access to the Port of Morehead from central North Carolina and only east-west corridor between U.S. 264 and I-40 in the eastern region of the state. U.S. 70 is older and large segments have not been brought up to more current highway standards, which is now nearing capacity in many areas with the increase in residential, tourism and freight traffic. Therefore, the communities surrounding the Corridor are losing their competitive advantage to those areas with better highway access, fewer traffic signals and less congestion. For example, during interviews with local stakeholders, it was noted that tourists are now avoiding U.S. 70 and taking a more circuitous route to the coast to avoid delays from traffic or competing with trucks for road space.

2.1 INDUSTRY CONCENTRATION

The location quotient (LQ) is an economic base analysis tool employed to estimate industry concentrations and identify the basic and non-basic industries in a study region. Basic industries comprise of export oriented businesses, while non-basic industries comprise of local businesses that are dependent on or serve local demand. Based on a location quotient (LQ) analysis, most industries in the U.S. 70 Corridor are categorized as non-basic in 2011 with almost no improvement in the industry concentration since 2001 as indicted by total private non-farm related employment in Table 2.1. A industry is considered non-basic when the local demand for the given industry is not fulfilled by businesses located in the region. Table 2.1 shows that in some cases, industries started out as basic in 2001 but transitioned into non-basic by 2011. There include the Forestry, Fishing, and Related Activities and the Accommodation and Food Services industries. With a majority of industry jobs categorized as non-basic, as is in the case largely in Eastern North Carolina, that the Corridor region struggles to meet local demand for both goods production and services, leaving little production for exporting. As a result of the maintained decline and some deterioration in industry the region imports more goods and services leading to



fewer wages re-spent by residents furthering the difficult economic conditions in some parts of the region.

There are a handful of industries that have remained categorized as basic, which mean that employment in the region is either meeting or exceeding demand locally. Not surprisingly given the general trend nationally away from manufacturing and agriculture, all industry employment categorized as basic are services and government related along the U.S. 70 Corridor. The construction industry, however, has remained a basic industry and the only industry identified as one that has experienced an increase in industry concentration over the 2001-2011 time period. Given the economic downturn and subsequent demand for construction activities, the industry has maintained it's presence as an export oriented industry in the Corridor due to strong demand in North Carolina, most likely from growth around the Raleigh area.

When compared to other areas in Eastern North Carolina with better highway access, such as in Pitt County where Greenville is located and in New Hanover where Wilmington is located, the number of basic industries generally outnumber those along the Corridor. Most notably, there do not exist any shifts in categorization as is present along the U.S. 70 Corridor where basic industries in 2001 have transitioned into non-basic industries. It could be said that have adequate access to major highways such as in Pitt and New Hanover with U.S. 264 and I-40 access, respectively, have helped existing industries maintain their economic competitiveness and thus concentration. Whereas in the case of the U.S. 70 Corridor, it seems that concentration has become weak possibly due to relocation of industry to substitute regions with better transportation infrastructure.



Table 2.1 U.S. 70 Corridor Industry Concentration

Industry	2001	2011
<i>Private nonfarm employment</i>	Non-Basic	Non-Basic
Forestry, fishing, and related activities	Basic	Non-Basic
Mining	Non-Basic	Non-Basic
Utilities	Non-Basic	Non-Basic
Construction	Basic	Basic
Manufacturing	Non-Basic	Non-Basic
Wholesale trade	Non-Basic	Non-Basic
Retail trade	Basic	Basic
Transportation and warehousing	Non-Basic	Non-Basic
Information	Non-Basic	Non-Basic
Finance and insurance	Non-Basic	Non-Basic
Real estate and rental and leasing	Non-Basic	Non-Basic
Professional, scientific, and technical services	Non-Basic	Non-Basic
Management of companies and enterprises	Non-Basic	Non-Basic
Administrative and waste management services	Non-Basic	Non-Basic
Educational services	Non-Basic	Non-Basic
Health care and social assistance	Non-Basic	Non-Basic
Arts, entertainment, and recreation	Non-Basic	Non-Basic
Accommodation and food services	Basic	Non-Basic
Other services, except public administration	Basic	Basic
<i>Government and government enterprises</i>	Basic	Basic

Source: U.S. Bureau of Economic Analysis and Cambridge Systematics calculations

Although it is important to understand the categorization of industries in a region, it is equally important to examine the trend over time as industry concentrations change. More specifically, approximately nine industries along the Corridor are emerging and seven industries are declining. An emerging industry is described as one that has exhibited increasing concentration over time. Along the Corridor, Mining, Manufacturing, Wholesale Trade, and several services related industry are those identified in the emerging category. While traveling along the Corridor it is apparent that a small resurgence in advanced manufacturing has taken place, especially home appliance manufacturers such as Electrolux, Moen, and Lenox, to name a few. Those declining industries along U.S. 70 include Utilities, Transportation and Warehousing, Finance and Insurance, Healthcare and Social Assistance, Tourism, and Forestry related industries. A declining industry, as the name suggests, is one that has exhibited declining concentration over time.




2.2 INDUSTRY CLUSTERS ALONG U.S. 70 CORRIDOR

The North Carolina's Eastern Region 2012 Annual Report¹ show that there are currently several projects in place in the region aimed at target clusters identified in the report. These projects include advanced manufacturing, aerospace/defense, life sciences, value-added agriculture (meat processing, packaged foods, etc.), and marine trades related industries. As these clusters grow and expand their transportation needs will also change in order to accommodate their needs. Transportation access and availability in Eastern North Carolina is one of the reasons why some of these industries have located along the Corridor and in order to maintain the region's competitiveness the Corridor will need to adapt to changing or growing needs.

- **Agri-business.** Nowadays agricultural production is focused on those activities that increase the value of a commodity through manufacturing processes or production processes (e.g. organic produce, specialty or high-grade produce, processing, etc.). Value-added agriculture is how many agriculturally based economies can support as well as initiate growth. The objective in the Eastern North Carolina region is to leverage the traditional agricultural industry to develop value-added agriculture. Some of the activities taking place include producing alternative fuels by using grass cultivated for energy, or otherwise known as biomass. In 2012 the North Carolina's Eastern Region worked with North Carolina's Southeast Development Commission and the Biofuels Center of North Carolina to secure a \$170 million advanced biofuels production facility². The biofuel planned for production at this facility will not only employ individuals in the processing of the fuel but also in the fields collecting the grass needed for production. This is an example of one of the steps taken by the region to meet growing demand for renewable energy by the general public but also the U.S. military. With rising fuel prices and political pressures to conserve, the U.S. military has taken an initiative to reduce pollution while maintaining military operations by using alternative fuels. Another example of this growing biofuels industry in Eastern North Carolina is the growing demand in Europe for wood pellets. The North Carolina Ports Authority in 2012 committed \$5 million towards a development of a wood pellet facility at the Port of Morehead City to accommodate this growing demand. All these expansions and unique supply chain needs of the industry will influence the transportation networks used to bring these products to market or production.
- **Military.** The U.S. military is a prominent market for North Carolina industries from fuel to food. With several large military bases within or in

¹ http://www.nceast.org/pdf/AnnualReport_2012_Web.pdf

² North Carolina's Eastern Region Annual Report 2012



close proximity to the U.S. 70 Corridor, the region's economy has grown with the rising aerospace and defense presence. Since the mid-2000s, over 17,000 service members and civilian employees have moved to Eastern North Carolina bringing along the associated demand for support services on and off the installations. As a result local industries also ramped upwards, which is indicated by the growth in employment in counties where military installations are located, especially relevant has been the growth in the retail sales industry.

- **Manufacturing.** A growing trend statewide in North Carolina is pharmaceutical and biomedical manufacturing. Currently, North Carolina is 3rd in the U.S. in terms of number of biotechnology firms and employees³. Private firms in the BioEast Alliance (a five counties in Eastern North Carolina with a large concentration of bio-pharma manufacturing activity) employ about 5,000 people⁴ in the region. The combination of the area's proximity to Research Triangle near Durham, Raleigh, and Chapel Hill with the demand for higher quality products domestically has lead to the development of these manufacturing facilities in the Eastern North Carolina region. Much of the infrastructure needed for this type of manufacturing was already in place as well as an available labor force struggling to recover from the decline of North Carolina's textile and tobacco processing industries. Currently, most of the activity is centered around Greenville where Eastern North Carolina University is located. However, with good access to Raleigh and major north-south interstates, the U.S. 70 Corridor could capture some of the spillover growth out of Greenville.

2.3 EMPLOYMENT

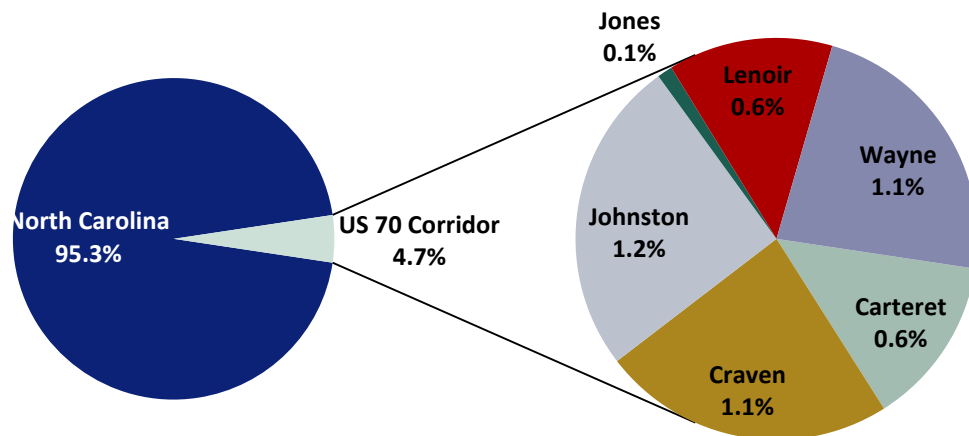
Over the past 10 years the U.S. 70 Corridor region constituted less than 5 percent of average employment in North Carolina (Figure 2.2). Johnston, Wayne and Craven Counties boasts the largest concentration of average employment along the Corridor. The growth in Johnston County is mainly driven by the proximity to Raleigh and in Craven and Wayne Counties a primary driver is the location of their respective military bases. The largest employment center along the Corridor is Johnston County, which is to be expected given its location along I-95, I-40, and bordering Wake County. The U.S. 70 Clayton Bypass in Johnston County improved accessibility and reduced congestion in the area thereby supporting significant growth leading to significant residential and commercial development spilling over from Raleigh.

³ BioEast Alliance website: <http://www.bioeastalliance.org/home>

⁴ BioEast Alliance website: <http://www.bioeastalliance.org/home>

metropolitan area, Johnston County is an attractive location for Manufacturing, Retail Trade, and Real Estate industries.

Figure 2.2. Total Average Employment (2001-2011)



Source: US Bureau of Economic Analysis and Cambridge Systematics

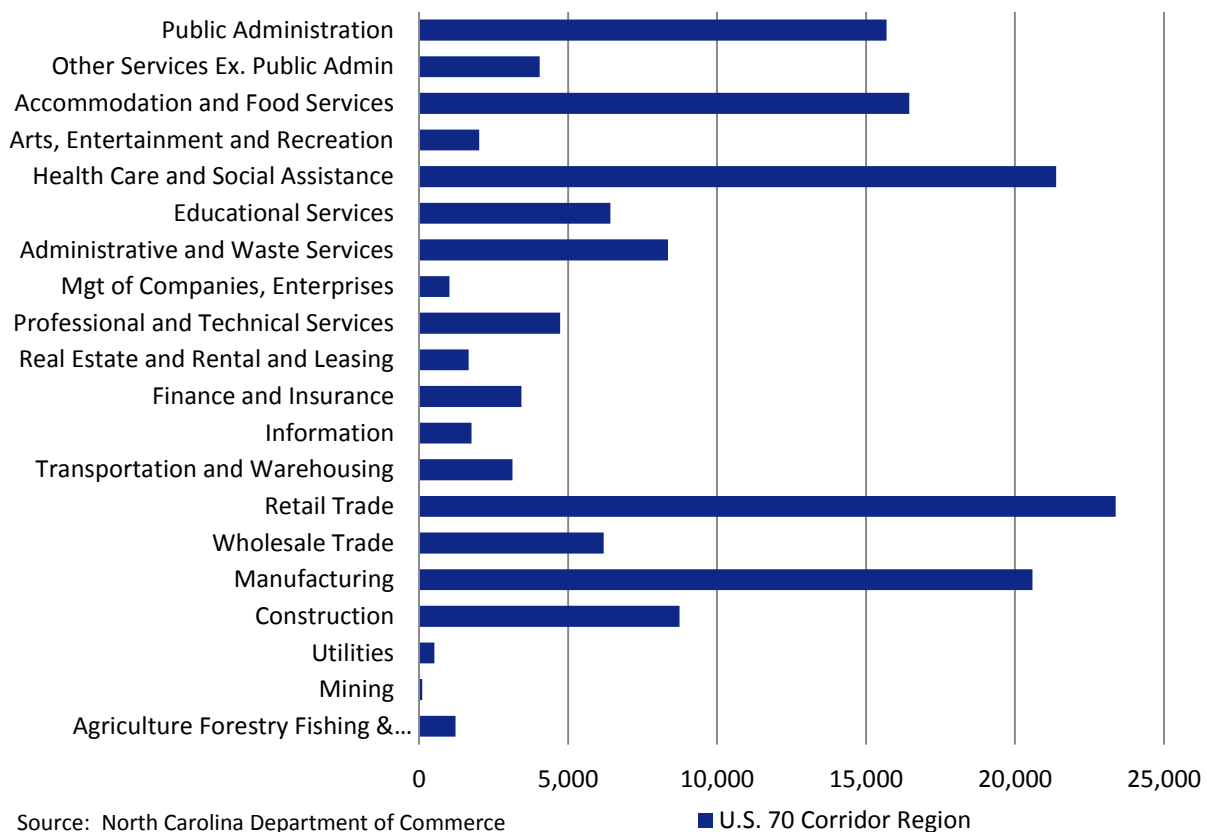
Currently, most employment is concentrated in the services industries. Figure 2.3 shows that most employment is found in the Retail Trade, Health Care and Social Assistance, Manufacturing, and Accommodation and Food Services industries. These industries' prominence is consistent with the growing retirement population in the area and especially along the Coast in Carteret County along with Raleigh's reach into Johnston and Wayne Counties. Most of the employment along the Corridor is located in major population centers such as Smithfield-Selma, Goldsboro, Kinston, New Bern, Havelock, and Morehead City.

The presences of the military is also a key driver of economic activity along the Corridor in and around Craven County where Marine Corps Air Station Cherry Point and Fleet Readiness Center East is located. The air station and its associated support locations occupy more than 29,000 acres in Havelock⁵. Additionally, nearby Onslow County is home to two additional military bases,

⁵ <http://www.cherrypoint.marines.mil/About.aspx>

Camp Lejeune and New River Marine Corps Air Station. Given the concentration of three military bases in Coastal Eastern North Carolina and growth of the military in recent years has spurred economic growth in military support industries regionally.

Figure 2.3. 2011 Annual U.S. 70 Corridor Employment by Industry



Since 2001 most average annual industry employment growth in all Corridor counties has remained steady with minimal improvements or a slight decline in employment between 2001 and 2011. Noticeable and significant increases, however, in a handful of key industry sectors did occur. Some of the fastest growing industries in the region include Administrative and Waste Management Services, Educational Services, Management of Companies and Enterprises, and Mining. These growing industries, largely services related, are replacing traditional Eastern North Carolina industries such as Forestry, Fishing, and Related Activities, Manufacturing, and Farm Employment (Table 2.2).

Table 2.2 U.S. 70 Corridor Employment Growth (2001-2011)

Employment CAGR (2001-2011)	Carteret	Craven	Johnston	Jones	Lenoir	Wayne	North Carolina
Accommodation and food services	0.9	1.81	3.15	0	0.17	1.17	2.18
Administrative and waste management services	3.07	1.5	4.92	11.4	3.32	2.89	2.84
Arts, entertainment, and recreation	1.18	2.97	3.94	0	1.54	4.33	3.44
Construction	-1.19	-2.2	-0.61	-1.21	-2.25	-2.43	-1.63
Educational services	5.39	5.61	8.03	0	4.48	9.29	6.18
Federal, civilian	1.75	-0.24	0.39	-2.84	-2.54	-0.59	1.45
Finance and insurance	6.07	2	5.15	0	-0.97	0.37	2.81
Forestry, fishing, and related activities	0	-4.41	0	-6.59	0	0	0.56
Health care and social assistance	2.56	3.06	4.66	0	1.07	1.48	3.21
Information	-1.94	-4.24	-1.28	0	-5.97	5.63	0
Management of companies and enterprises	-7.24	8.6	0	0	-2.99	7.1	2.4
Manufacturing	-4.13	-3.64	-1.63	-8.12	-0.81	-2.32	-4.48
Military	-0.08	1.02	2.3	-1.09	-0.69	1.05	2.17
Mining	0	8.84	0	0	0	0	2.91
Other services, except public administration	1.48	0.29	2.63	1.63	0.46	-0.43	1.4
Professional, scientific, and technical services	1.26	1.39	0	3.37	-1.07	1.15	2.79
Real estate and rental and leasing	4.98	4.45	5.79	0	2.17	1.98	4.56
Retail trade	-0.24	0.02	1.45	0.37	-2.55	-1.98	-0.03
State and local	0.96	-0.58	3.67	-0.34	-0.55	-0.32	1.29
Transportation and warehousing	-3.53	-2.3	0	1.1	-2.86	-4.25	-0.57
Utilities	-1.1	3.21	0	0	-5.59	-1.18	0
Wholesale trade	-1.78	-0.22	2.5	-0.58	1.41	1.15	0.54
Government and government enterprises	0.93	0.17	3.51	-0.48	-0.64	0.1	1.45
Farm employment	-1.39	-3.86	-1.9	-5.89	-1.52	-2.09	-2.5
Total employment	0.78	0.29	2.12	0.24	-0.43	0.02	0.84

Legend: Red – Low, Yellow – Medium, Green – High

Source: U.S. Bureau of Economic Analysis and Cambridge Systematics calculations

2.4 UNEMPLOYMENT

Not surprisingly given the recent economic downturn, unemployment is high in the counties along the Corridor. Unemployment percentages in 2012 were higher than the national average of just over eight percent for all counties along the Corridor with Jones and Lenoir reporting double digit unemployment (see Table 2.3).

Table 2.3 2012 Annual Unemployment

	Carteret	Craven	Johnston	Jones	Lenoir	Wayne
Unemployment rate	8.6%	9.7%	8.4%	10.5%	10.0%	8.9%

Source: North Carolina Department of Commerce

Johnston and Wayne Counties are the manufacturing centers along the Corridor with over 90 manufacturing related establishments located in each of the two counties, representing 30 percent or more than the rest of the Corridor (Table 2.4). The large number of manufacturing establishments in Johnston County is primarily attributed to the proximity to Wake County with access to both I-95 and I-40. Wayne County is where Goldsboro is located and is also where U.S. 70 intersects I-795 going north to Greenville and U.S. 117 heading south towards I-40 providing access to the Port of Wilmington. Johnston and Wayne Counties are also the retail business centers along the Corridor along with Craven County with well over 2,000 retail businesses. The largest number of retail establishments are located in Johnston County, attributable to the growing population and to a large outlet shopping center in Smithfield. In general, the retail businesses along the Corridor generated around \$1 million in sales per establishment in 2012 with a few counties where the average is higher.

Table 2.4 Establishments (2012)

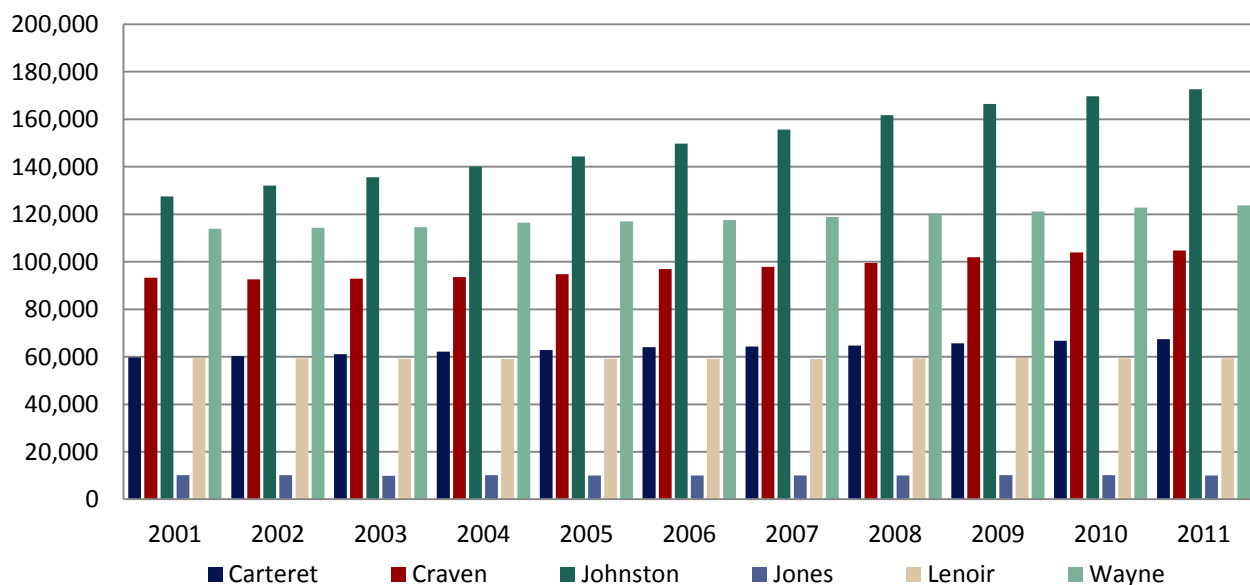
Local Businesses	Carteret	Craven	Johnston	Jones	Lenoir	Wayne
2012 Q3 Establishments: Total Private Industry	2,074	2,252	3,085	246	1,377	2,234
2012 Q3 Establishments: Manufacturing	71	74	123	9	63	94
Local Retail Business						
2012 Total Retail Sales (with food/drink) (\$millions)	\$ 693.80	\$ 962.30	\$ 1,556.80	\$ 17.50	\$ 604.10	\$ 1,226.30
2012 Total Retail Businesses (with food/drink)	693	739	1105	50	456	859
2012 Avg Sales/Business Total (with food/drink)	\$ 1,001,159	\$ 1,253,408	\$ 1,408,896	\$ 350,618	\$ 1,324,790	\$ 1,427,618

Source: North Carolina Department of Commerce

2.5 POPULATION

Average population over the last 10 years indicate that all the counties along the Corridor have maintained a steady population or had a modest increase in population with the exception of Johnston County which has witnessed significant gains in population (see Figure 2.4). On average Johnston County has had 3 percent population grow each year since 1980, even with economic downturns in the late 1980's and mid to late 2000's. Most likely due to the economic growth originating in Raleigh, the growth in Johnston County is notable given that the average growth rate in North Carolina has only been about half at slightly over 1.5 percent. Generally, most of the Corridor counties are relatively sparsely populated with populations less than 100,000 and the smallest being Jones County only having an annual population of slightly over 10,000 on average.

Figure 2.4 U.S. 70 Corridor Average Population (2001-2011)



Source: US Bureau of Economic Analysis and Cambridge Systematics

Table 2.5 present population estimates and projections for each of the Corridor counties. Following historical population estimates, most Corridor counties are expected to exhibit growth in population with the exception of Lenoir that is expected to have a slight decrease in population between 2010 and 2020. However, most of the decline in population stops in the following 10 years from 2020 to 2030. Most notable is that Craven County is expected to experience a 2.8 percent decrease in migration. In other words, more people are expected to move out of Craven in the next 10 years. This trend continues between 2020 and 2030 at approximately the same rate. Between 2020 and 2030 Johnston County population growth begins to decrease from 14 percent expected population growth between 2010 and 2020 to 11.5 percent population growth between 2020 and 2030. This is the general trend in the population forecast trend between 2020 and 2030. All Corridor counties are expected to experience slower growth than in the previous 10 years, 2010 to 2020.

Table 2.5 Population Estimates and Projections (2010-2030)

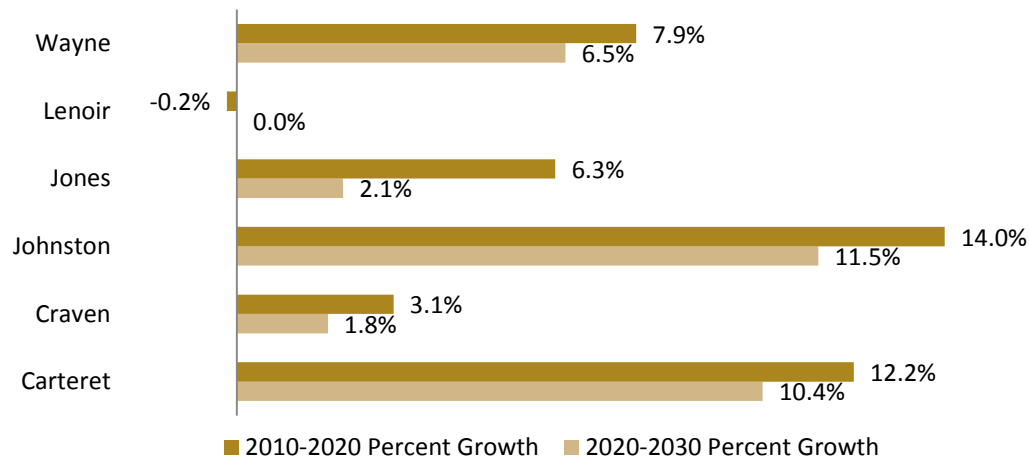
County	July 2020 Projection	April 2010 Estimate Base	Growth		Net Migration	
			Total	Percent	Estimate	Percent
Carteret	74,592	66,469	8,123	12.2	10,137	15.3
Craven	106,745	103,505	3,240	3.1	-2,906	-2.8
Johnston	192,471	168,878	23,593	14	10,931	6.5
Jones	10,795	10,153	642	6.3	897	8.8
Lenoir	59,401	59,495	-94	-0.2	228	0.4
Wayne	132,354	122,623	9,731	7.9	4,692	3.8
County	July 2030 Projection	July 2020 Projection	Growth		Net Migration	
			Amount	Percent	Amount	Percent
Carteret	82,383	74,592	7,791	10.4	11,737	15.7
Craven	108,704	106,745	1,959	1.8	-2,700	-2.5
Johnston	214,511	192,471	22,040	11.5	10,276	5.3
Jones	11,024	10,795	229	2.1	748	6.9
Lenoir	59,401	59,401	0	0	948	1.6
Wayne	141,019	132,354	8,665	6.5	5,514	4.2

Source: North Carolina Office of State Budget and Management

The largest drop in population growth forecasted is in Jones County where an estimated projected population growth contracts from 6.3 percent to 2.1 percent, as shown in Figure 2.5. The overall slowing of population growth combined with a corresponding increase in net migration in most counties could be due in part to the increasing number of retirees moving to Eastern North Carolina. The bulk of the Baby Boomers will be retiring by the mid-2020s, offering some explanation of the shift in 2020-2030. Interviews conducted in Eastern North

Carolina indicated many more rural communities are positioning to take advantage of this trend by offering retirement oriented developments and supporting services for retirees. This is a strategy many rural communities are using to supplement the traditional manufacturing and other industry oriented economic development.

Figure 2.4 Population Forecast (2010-2030)



Source: North Carolina Office of State Budget and Management

2.6 EDUCATION AND WAGE RATES

The Eastern North Carolina region, like that of the rest of the U.S. and North Carolina, is transitioning to more of a services and technology based economy. This transition leads to higher demand for a skilled workforce, which the region is trying to achieve with workforce development programs and availability of technical degrees from regional community colleges. The colleges located in those counties along the U.S. 70 Corridor include:

- Carteret Community College
- Craven Community College
- Lenoir Community College
- Lenoir Community College – Jones County Center
- Johnston Community College
- Mount Olive College (Wayne County)

- Wayne Community College

These seven higher learning institutions, easily accessible in each of the Corridor counties, has contributed to the increasing number of individuals in obtaining Associate and Bachelor's degrees as well as accessibility to technical training. In each of the Corridor counties there has been a significant increase in both Associate and Bachelor's degree attainment since 2000. The largest percentage increases are those obtaining Associate degrees, especially in Jones and Johnston Counties with an 80 percent and 76 percent increase, respectively (Table 2.6).

Table 2.6 Percent increase in Post Secondary Education (2000-2011)

	Carteret	Craven	Johnston	Jones	Lenoir	Wayne
Associate Degree, Pop 25+	46%	52%	76%	80%	41%	33%
Bachelor's Degree, Pop 25+	35%	23%	64%	37%	3%	14%

Source: North Carolina Department of Commerce and Cambridge Systematics Analysis

With this increase in educational attainment there has been a corresponding increase in wages of an average of 25 percent or more between 2000 and 2010. Even with the increase in annual wages, the average for the Corridor of \$32,146 in 2010 is still significantly below the national average in 2010 of a over \$41,673⁶ (Table 2.7). This is also reflected in the higher wages typically associated with employment in the technology and knowledge based industries, which is consistent with the targeted industry clusters identified for the region to promote. Several of these industries, military and aerospace related industries to name a few, provide wages at rates higher than the North Carolina average of about \$40,000 a year.

Table 2.7 Average Annual Wage 2000-2010

County	2000	2010	% Change
Carteret	\$ 20,904	\$ 28,444	36%
Craven	\$ 27,976	\$ 37,648	35%
Jones	\$ 23,088	\$ 31,252	35%
Lenoir	\$ 24,856	\$ 31,616	27%
Wayne	\$ 24,544	\$ 31,772	29%
U.S. 70 Corridor Average	\$ 24,274	\$ 32,146	33%

Source: North Carolina Employment Security Commission

⁶ Social Security Administration National average wage indexing series, 1951-2011




3.0 Economic Development Assessment

3.1 OVERVIEW

In preparing the economic development analysis for the Corridor, Sanford Holshouser interviewed representatives from each of the counties, and selected municipalities along the corridor. Those interviewed included: mayors, managers, planners, economic developers, elected and appointed board members, and business owners/operators. In addition, economic development professionals from regional organizations and utilities were polled for their input. Information on the role U.S. 70 plays, and will play on the tourism, retail, and other sectors was gathered from professionals and owners in those sectors through six focus groups that were held across the corridor. Additional information on the tourism sector was obtained from occupancy rates, occupancy and sales tax revenues, and other related data. Lastly, the importance of U.S. 70 to the military installations located along the corridor, Marine Corp Air Station Cherry Point and Seymour Johnson Air Force Base, was assessed through interviews and research.

3.2 THE ROLE OF U.S. 70 AND CURRENT CORRIDOR CONDITIONS

There was almost unanimous agreement that U.S. 70 is critically important to the economic well being and future growth potential of all the communities within the corridor. The only exception was Jones County whose respondents stated that they were more dependent on US 17. However, for the part of this County that was close to U.S. 70, it was of vital importance. U.S. 70 was variously described by respondents as “our main street,” “our life line,” “the main east west artery,” “the only way in or out,” and one elected official stated that “we live and die by what happens on U.S. 70.” Corridor wide, the importance of U.S. 70 was rated a 5 on a 1-5 scale with 5 being the most important. Although there is recognition that the completion of the bypass system will raise some issues, there is general agreement that the positive effects will more than outweigh the negative impacts. Some of the reported negative impacts of the current state of U.S. 70 were the number of traffic signals, the number of at grade intersections



and railroad crossings, and congestion. Bottlenecks at various points of the corridor were identified including industrial entrances, traffic signals at high traffic count intersections, east of Goldsboro, and particularly in James City. Many of the negative issues cited were safety related and it is widely noted that improvements will vastly improve the safety of the highway. Another benefit that the completion of the bypass system is quicker and safer hurricane evacuation routes.


The condition and role the highway plays varies widely from the western end in Johnston County to the eastern terminus in Carteret County. The bypass system is almost complete in Johnston and the benefits of improved safety, decreased congestion, and better connectivity are already paying dividends in that area. In other counties where some bypasses have recently been constructed, they are beginning to see improvements, and in others that are still waiting on a final decision on the routes of the bypasses, problems still abound, and the planning for development of property along the new corridor, and strategies to offset the negative effects on existing retail businesses on the current route are at a standstill. There was also unanimous agreement that the completion of the U.S. 70 bypass system was essential to improve safety and connectivity, and to allow communities to develop the economic development product that can provide jobs and investment to support current and future citizens.

3.3 ECONOMIC DEVELOPMENT

Existing Industry

The existing business and industry mix along the corridor has many common threads, although each county also has unique clusters attributable to some physical aspect of the county or other economic drivers. The common industrial sectors are Logistics and Distribution, Aerospace and Aviation, Food Processing, Biotech, Ag and Ag Products, Wood Products, and Healthcare. Companies in each of these industry sectors are located in multiple counties. Locations of unique clusters such as Marine Science, Marine Trades, and Medical Devices are driven by physical aspects that support a particular industry and the close proximity of other like businesses and support infrastructure.

Logistics is a critical element in the business model of any company regardless of the cluster or their location in the corridor. The degree of importance varies with the particular sector, but in all cases, logistics is a major factor in the cost of doing business. Businesses along the corridor rely almost exclusively on U.S. 70 as their primary route to reach suppliers, customers, or other transportation corridors. Every county interviewed reported that all their major employers were located within two miles of U.S. 70. In Kinston it was cited that 2000 jobs are located within $\frac{1}{4}$ mile of the U.S. 70 centerline. Further, in Lenoir County, 500 trucks go into and out of their main industrial park on a daily basis.



Approximately 70 trucks per day leave the DuPont Plant in Lenoir County to deliver product to customers using U.S. 70 to access I-95.

The importance U.S. 70 has to business and industry, and to the economic well being of the area, is evidenced by the concentration of companies and jobs along the corridor. U.S. 70 is obviously then, a factor in every decision on plant expansions made by these companies. Completion of the bypass system which would improve safety and connectivity, reduce travel time and cost, and would enhance the competitive position of corridor companies to compete for plant expansions; creating jobs and growing the local tax base. In addition to the improved prospects of plant expansions, an enhance U.S. 70 will better position the corridor to attract new companies to the area.


New Company Recruitment -Target Sectors

Target sectors for the counties along the corridor are similar to the existing industry mix in that there are several sectors identified as recruitment targets by multiple counties, and a number of sectors identified as targets by single economic development organizations. Each sector, whether targeted by one or multiple organizations, has been identified as compatible and desirable for those respective counties, and each is striving to leverage its assets to bring jobs and investment to their community. Target sectors that are shared by multiple counties include: Aerospace and Aviation, Advanced Manufacturing, Ag and Ag Products, Biotech, Food Processing, Logistics and Distribution, Military and Defense, Pharma, and Wood Products. These sectors are also targeted by the Eastern Region and the State of North Carolina. Again, improvements to U.S. 70 will enhance the ability of the counties to successfully recruit companies from these sectors.

When inquired about expansions of existing companies or locations of new companies that were lost because of transportation issues related to the current state of U.S. 70, a few were noted. Big Rock Sports employed 240 in Carteret County. The Company relocated their distribution operation for many reason; among which were the issues with U.S. 70. They now have only 80 employees in Carteret and there is concern that the Company will relocate them as well. Poor access to the Ports was cited as a factor in being eliminated from consideration by a boat building company. Likewise, it is reported that locations in the region were dismissed by Boeing and Gatorade because of the difficulty in getting trucks to I-95. From this anecdotal evidence, it is clear that the current state of U.S. 70 is *not* a neutral factor in the competition for jobs and investment but is a definite deterrent on those recruitment efforts.

Economic Development Product

There is a good mix of economic development product along the corridor. Park and sites vary in size and amenities, with some being Department of Commerce Certified. There were also several planned developments identified along the corridor primarily residential, commercial, and retail not industrial. There is




adequate acreage to handle almost any industrial project that comes along, but this is not the case in every county. While counties recognize the need to identify and develop additional industrial sites, some of the counties' efforts are on hold while the location of the bypasses are finalized. There are ongoing preliminary efforts to identify acreage around the proposed bypass routes but this is being kept at a very tentative level until a final location decision has been made. In Johnston County where the bypasses have almost been completed, there is more product available and in a higher level of readiness, such as being NC Department of Commerce Certified. The communities in Johnston County have been aggressive in securing and certifying property to position themselves for future growth and to capitalize on the improved transportation system going through the County. This proactive attitude and strategy could and should be a model for those counties along the corridor when the routes are finalized.

A professional evaluation of the economic development product available in the U.S. 70 corridor from I-95 to the Port of Morehead City indicates that there is an abundance of good site and building opportunities to choose from in each county traversed by the highway. Obviously the more populated counties have the most sites and buildings to offer and are generally better served with infrastructure but each county has at least a few viable sites to be considered by industrial and distribution prospects.

It is confirmed that the second most costly factor in a company's total operating expenses is the issue of logistics. The input and output supply chain costs will be at the top of a site selectors list of factors to evaluate to determine an optimum location. The difficulty of transportation to some locations within the U.S. 70 corridor presently is a major negative in successfully attracting businesses into those counties. This is the case in those counties where the bypasses have not been completed and it would be an excellent improvement if the corridor could be benefitted with bypasses to avoid the costly delays created by the stop and go traffic conditions that presently exist.

In summary, there is a good mix of quality product available along the current U.S. 70 Corridor. However, some sites and buildings are at a competitive disadvantage when considered in terms of logistics. The completion of the bypass system will benefit the entire corridor by improving the access of existing sites and buildings, and opening new areas for site and park development.

The dependence on U.S. 70 as it relates to economic development has many aspects. As has been noted above, industry is absolutely dependent upon U.S. 70 to get raw materials into their plants and their finished product out to their customers. Another aspect on which industry depends on U.S. 70 is for their employees to get to and from the plant. There are many commuters that use the highway every day to get to and from work. Completion of the bypass system will improve safety of those employees, reduce congestion, and reduce commute times, generally improving the quality of life of the workforce. In addition, as has been found in Johnston County, completion of the bypass system can expand the labor pool. With travel time measured in time not miles, workers can now



commute further distances in the same amount of time, greatly increasing the labor shed area from which companies can draw their employees. Currently there are individuals that live in Kinston that commute to Raleigh for their jobs. Not only is this a benefit for companies that can attract employees from a larger geographic area, but it can also encourage residential development in areas some distance away from employment centers. In turn, as rooftops drive retail, new residential developments can spur retail development.

Competitive Position

The completion of the bypass system and the associated improved connectivity, is almost universally viewed as the key to enhancing the area's competitive position in several economic development sectors; industrial, commercial, residential, retail, and tourism. As with other aspects of the study, how U.S. 70 affects the competitive position of any particular area of the corridor depends on which part of the corridor that is being considered. The bypasses in Johnston County have greatly increased the area's competitiveness. However, the corridor from eastern Johnston County to Beaufort is at a competitive disadvantage when compared to the surrounding regions; the Northeast and the Southeast. Both Regions have better highway corridors that provide access from I-95 all the way to the coast, serving all the counties in between.

In the Northeast Region US 64 provides interstate quality access the majority of the way from I-95 to the Outer Banks. The exceptions are a 28-mile, four-lane stretch that has multiple access points, at grade intersections, and several traffic signals, and a 30-mile, two-lane segment from Columbia to Manns Harbor. The last leg is slated to be four-laned in the near future. In addition, US 17 is four-laned from Williamston all the way to the Tidewater, VA area, with a large part of it being interstate quality. This highway system provides excellent connectivity to the area and allows for the efficient transportation of goods in and out of the Region. In addition, it facilitates easy access for tourists visiting historic sites and vacationing on the Outer Banks.

I-40 provides high speed connectivity from Wilmington all the way to I-95, the Triangle and beyond. In fact, I-40 runs all the way to Barstow CA. It was noted by respondents that the improvements that I-40 brought to the counties that it passes through should be viewed as a model of the potential that an upgraded U.S. 70 could bring to the counties included in the corridor.

Ports, GTP, and RTP

Respondents were in general agreement that it was important to complete the bypass system from I-95 to the Ports. When completed, the vastly improved connectivity would put all counties in a better position to compete for economic development projects. Better access to the Research Triangle would pay dividends to the counties east of I-95, as has been the case for those areas in Johnston County where the bypasses have opened. Better connectivity to I-95



was cited as very important by respondents. Access to this major north/south transportation corridor is another essential factor in industrial recruitment.

The bypass system was also seen as a key factor in assisting the Global TransPark reach to its envisioned potential. The transportation system that was to be an integral part of the GTP was never built. The U.S. 70 bypass system, while not as extensive as the proposed network, would provide much needed connectivity to points east and west along the corridor, and open those areas to projects that would use the GTP. The increased economic development product options this would provide prospects improves the chances for successful recruitments.

Easier, quicker, and safer access to the Port of Morehead City was also seen as a plus for the counties along the corridor as well as the Port itself. Obviously easier access to the Ports would open industrial property to prospects that would utilize the facilities in Morehead City. As in the case with the labor pool cited above, improved travel times would allow plants to be located farther from the Ports and still access them in a timely fashion. In addition, one respondent cited that the Port is forced to consider less than desirable projects because of the lack of opportunities that comes its way. Increased connectivity to I-95 and other corridors would bring more desirable projects for consideration by the Port, growing that facility and the corridor as well.


Residential

Another important aspect of economic development is the attraction of new residents. New residents bring investments in housing, goods, and services. New rooftops drive retail development, sparking other new business openings and locations. One issue cited was the difficulty in attracting retirees. This segment of the population is a desirable target for recruitment because they tend to have a high percentage of disposable income, typically have a minimum impact on public services, and generally are a positive influence in the area in which they live. The difficulty in attracting retirees is related to accessing specialized health care in areas such as Greenville, Raleigh and Chapel Hill. As U.S. 70 is the main corridor to access these metropolitan areas, and given its current conditions with congestions, multiple traffic signals, etc., attracting retirees to areas such as Carteret County is a challenge.

Retail

The effect that the construction of the bypass system will have on existing retail establishments located along the corridor has raised some concerns in several counties. It was generally acknowledged that strategies needed to be developed to minimize the negative impacts that the transportation improvements may bring with the diversion of traffic away from the current corridor.

In the Town of Clayton in Johnston County, 40,000 cars per day used U.S. 70 going to and from the Raleigh-Durham area before the completion of the bypass. There were many retail establishments located on this highway. When the



Clayton bypass was opened, a large percentage of this traffic was diverted but the impact on the retail establishments was minimal, in fact there were only two closings that were cited. What was found was that the majority of the traffic was commuters going to and from work and they did not stop to shop at the stores in Clayton. The retail establishments were being supported by the local population and with the diversion of the commuter traffic, shoppers found it easier to get in and out of parking lots. This also proved to be the case in other areas of the County, particularly in the Smithfield and Selma areas. This scenario may not be a model for other areas of the corridor where traffic will be diverted because the population base in the Clayton area is such that it can support the retail establishments there; they are not dependent on pass-by customers. This is not expected to be the case in areas such as Kinston.

In the Kinston area, there is great concern for the survivability of those businesses that live and die with the traffic count. It is believed that establishments such as Neuse River Sports, Wilbur's Barbecue, and King's Barbecue are destination businesses and people will be willing to get off the new bypasses and travel short distances to get to them. Along the areas that have a high concentration of retail establishments there is a consensus that strategies need to be developed to mitigate the negative effects of a reduced traffic count. Some of the ideas noted were: signage at new interchanges, service roads, local connectivity improvements, safety enhancements to the current corridor, relocation of stores, and selling or closing businesses. As has been noted above, a key issue is the finalization of the location of the bypass routes. The sooner the alignments of routes are determined, the sooner businesses can make plans on how they will address the potential loss of customers. But until route location decisions are made, business owners are limited in their planning.

3.4 TOURISM

Tourism is sometimes thought of as separate from other economic development. However, professionals in the field know that tourism *is* economic development; bringing much desired dollars (new, from outside the area) into the community. Tourism is a major economic engine in the State of North Carolina and in the counties of the U.S. 70 corridor, with the highway being the primary pathway to many attractions located there. Tourism has been, and continues to be, strong statewide and in the corridor. Data indicates that the industry was not as hard hit as other sectors by the recent recession; in fact, some counties in the State only experienced fractional decreases in their tourism revenues. The sector also recovered faster than other parts of the economy, setting a new Tourism Demand peak of \$24 billion in 2011.

In preparing the tourism analysis for the Corridor, Sanford Holshouser reviewed tourism attractions, occupancy rates, occupancy tax rates, occupancy tax

revenues, employment in the sector, and sales tax receipts. A synopsis of the data by county is contained in Table 3.1.

Table 3.1 Summary of Tourism Based Economic Activity along U.S. 70, 2012


County	Expenditures (\$ Millions)	Percent Change 2010/2011	Payroll (\$Millions)	Employment (Thousands)	State and Local Tax Receipts (\$Millions)	NC Travel Impact Rank (of 100)
Carteret	278.74	2.70%	48.77	2.96	30.58	14
Craven	116.29	7.40%	21.39	1.04	8.93	34
Johnston	191.12	9.20%	28.25	1.61	15.60	23
Jones	3.72	8.90%	0.49	0.02	0.33	98
Lenoir	78.36	4.80%	12.62	0.63	5.88	43
Wayne	138.58	9.60%	17.85	0.97	10.46	27

Source: NC Department of Commerce

As would be expected, the Tourism Industry has the largest impact in Carteret County, but as is also obvious, tourism plays a major role in all counties along the corridor with the possible exception of Jones. The corridor also is home to four of the top 25 highest visited attractions in the State, three in Carteret; Fort Macon State Park, the NC Aquarium at Pine Knoll Shores, and the NC Maritime Museum in Beaufort. The fourth being Tryon Palace located in New Bern in Craven County. Fort Macon was the second most visited attraction in 2012 and fifth in 2013 (One factor in this slip in the rankings could be transportation related that will be addressed later.). While these are high profile tourist attractions, each county has a good list of historical sites, parks and natural areas, amusement parks, etc. that draw visitors from a wide area. One growing attraction is Lion's Adventure Water Park in Kinston. The Park is growing in popularity and according to officials interviewed, turned away approximately 200 people per day this past season. They are hopeful that they will be able to expand their capacity by 1500 next year to accommodate the demand. Reaching this goal should push the water park into the top 25 of most visited attractions in the State.

Attractions as reported by tourism officials by county:

- Carteret: The N.C. Aquarium, Core Sound Waterfowl Museum, Fort Macon State Park, Historic Beaufort, the N.C. Maritime Museum, Cape Lookout National Seashore and lighthouse, Crystal Coast beaches, and fishing.

- 
- Craven: Tryon Palace and gardens, museums focusing on the Civil War and fire fighting, Historic New Bern, and Croatan National Forest.
 - Jones: Croatan National Forest, and Hoffman Forest, provide camping, boating, swimming, fishing, and hunting opportunities.
 - Lenoir: The CSS Neuse State Historic Site, Richard Caswell Memorial, and Harmony Hall.
 - Wayne: Charles B. Aycock Birthplace, Wayne County Museum, Cliffs of the Neuse, and the NC Pickle Festival.
 - Johnston: American Music Jubilee, Atkinson's Mill, Ava Gardner Museum, Bentonville Battleground, Clemmons Educational State Forest, Howell Woods, Carolina Premium Outlets, Tobacco Farm Life Museum, and colorful annual festivals.

As in the case with other sectors, the current condition of U.S. 70 and how it impacts tourism varies along the corridor. At the western edge, Johnston County is realizing the benefits the bypass improvements have had on other aspects of economic development, and while tourism has benefited, U.S. 70 is not the only major highway providing access to their attractions. However, the further east one goes, the greater the role U.S. 70 plays as the conduit to the attractions that draw visitors and their dollars. By the time the eastern terminus is reached, home to three of the top 25 tourist attractions in the State, U.S. 70 is *the* main transportation artery in and out of the area. According to officials interviewed, the area is losing market share to surrounding regions and to South Carolina because of the difficulties the current state of U.S. 70 presents in getting to travel destinations along the corridor. These difficulties include multiple traffic signals, increased travel time, congestion, and safety. It is believed that one factor in the decline in the most visited attractions ranking that Fort Macon experienced from 2012 to 2013 was attributable to the lack of easy access. As was noted, not only do US 64/US17 and I-40 provide a competitive advantage for business and industry locations in their respective regions, but they also play a significant role in tourism attraction, making it easier and safer to access the beaches of the Northeast and Southeast. Because of this the beaches of the Crystal Coast have been losing market share to the beaches in other North Carolina regions as well as to Myrtle Beach, S.C. With improved highway access, visitors from the Triad, who in years past vacationed in Carteret County, are now diverting to South Carolina. Competition for tourism dollars is just as intense as the competition for industrial projects. To remain viable and competitive the U.S. 70 Corridor tourism sector needs better and safer access to their attractions.




3.5 MILITARY

The two military installations located on the corridor are Seymour Johnson Air Force Base (SJAFB) and Marine Corp Air Station Cherry Point (MCAS Cherry Point). SJAFB is a major Air Combat Command base. The 4th Fighter Wing, the host wing at Seymour Johnson, was the first operational F-15E Strike Eagle wing in the Air Force. The wing consists of four groups -- 4th Maintenance Group, 4th Mission Support Group, 4th Operations Group and 4th Medical Group. Currently SJAFB has over 530 active duty officers, and over 3, 800 enlisted members and their families stationed here. The base also employs over 1,000 civilian employees plus numerous contractors. MCAS Cherry Point is home to the Second Marine Aircraft Wing and to the Marine Corps' only Naval Aviation Depot which performs work on aircraft and aircraft components used by the Marine Corps, Navy, and other services. Other major tenants are the Naval Clinic and Combat Service Support Group-21 (CSSD-21). More than 49,000 people make up the Cherry Point-related population, including active duty and retired Marines, the civilian workforce, and their dependents.

After numerous requests for an interview to determine how the current state of U.S. 70 affects operations, Sanford Holshouser was able to make contact with SJAFB Community Affairs Officer, Stewart Cox. The study team was unable to interview anyone from MCAS Cherry Point. However, since both military installations have missions that are aviation centered, it is logical that, in terms of U.S. 70 impacts to deployments and other mission related issues, the information supplied by SJAFB would apply to MCAS Cherry Point as well. Further, if considered as a business, and they are in fact businesses in the military industry sector, then all the issues cited by business and industry along the corridor would be pertinent to them as well.

The importance of U.S. 70 to SJAFB was rated 4 on a 1-5 scale with 5 being the greatest. Getting employees both civilian and active military, to and from the base, access to RDU, the Triangle area, and the coast, as well as delivery of goods and services were all cited as reasons of the critical importance of U.S. 70. Of particular importance to the Air Force Base was the delivery of aircraft fuel and parts. Most parts and fuel come via I-95 and then on to the base by way of U.S. 70. From a logistics standpoint, it is the main supply corridor including small shipments by UPS, FEDEX, and other package carriers. U.S. 70 is not important to SJAFB when it comes to deployment because, as its mission is aircraft centered, they deploy by air not by ground transportation.

In describing the current situation of U.S. 70, the issues cited were congestion and safety. Congestion primarily occurred during peak commute times when employees were coming to work and leaving the base at shifts end. A few years ago, a young officer was killed on the highway due to a grade crossing, so they are well aware of the safety issues related to traffic signals and grade crossings. They believe that the completion of the bypass system will alleviate some of the congestion problems and definitely improve the safety of the corridor.



The current number of traffic signals is not a hindrance to SJAFB in terms of their mission, but it does impact base personnel in terms of safety and commute times. As with other industry sectors, completion of the bypass system is projected to reduce commute times, which in turn extends the distance personnel can live from their place of employment, opening up additional areas for residential development, and expanding the potential labor pool.

Overall, the importance of completing the bypass system was rated 3-4. Completion of the section to the Ports was rated lower because the base does not use the facility for deployment, therefore it does not affect its core mission. The section of U.S. 70 to I-95 was rated higher because of the importance of the interstate for the delivery of goods and services, as well as transporting personnel to meetings and other functions in the Washington, DC area. The sections in and around the base were also rated high, but it was noted that there were already some improvements in process that would improve some of the issues on U.S. 70 stated earlier.

When asked about the strategic importance of the completion of the bypass system beyond the Region, the respondent stated that it would improve the quality of life for those using the corridor for commuting by expanding residential options d. In terms of the next round of BRAC discussions, the bypass system was described as a non-issue because they fulfill their mission by air. Ground transportation will be a bigger issue with the U.S. Army and Marines.

In summary, of the key issues for the bypass system as they affect SJAFB, the conditions and improvements are essentially logistics and commuting related. They do not impact the Base's core mission and deployments, which are accomplished via air.



4.0 Traffic Projections

4.1 MODEL DEVELOPMENT METHODOLOGY

Base-year counts, future No-Build and Build projections were made available by NCDOT. These projections were developed as part a series of project studies currently underway along the corridor. The projections are based on historical growth profiles and were developed in coordination with local communities along the corridor.

These final traffic forecasts were then used to compute Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT), which are inputs to the Economic Impact Analysis. Distance information feeding into the VMT calculation was derived from the NC statewide travel demand model (NCSTDM). Congested travel times were estimated using the Bureau of Public Roads (BPR) equation (shown below). As an input to the BPR equation, free flow travel times were calculated from the segment lengths and assumed free flow speeds reported by the NCSTDM.

$$S_a(v_a) = t_a (1 + \alpha (v_a / c_a)^\beta)$$

- t_a = free flow travel time on link a per unit of time.
- v_a = volume of traffic on link a per unit of time (somewhat more accurately: flow attempting to use link a).
- c_a = capacity of link a per unit of time.
- $S_a(v_a)$ is the average travel time for a vehicle on link a .

α and β were assumed to be standard BPR coefficients of 0.15 and 4 respectively⁷.

⁷ TMIP Online, Technical Synthesis: Speed Adjustments Using Volume-Delay Functions. (http://tmiponline.org/Clearinghouse/Items/Technical_Synthesis_-_Speed_Adjustments_Using_Volume-Delay_Functions.aspx)



4.2 RESULTS

As mentioned above, the traffic forecasts are consistent with the forecasts provided by NCDOT. Table 4.1 presents base-year (ranges from 2005 to 2010) and future (2040) No-Build and Build volumes, along with growth percentages. The final set of No-Build and Build volumes also are illustrated in Figures 4.1 and 4.2.

Goldsboro Bypass:

Going from west to east, the 2040 volume on U.S. 70 is projected to drop from 40,000 to approximately 16,000 daily two-directional vehicles, just west of the intersection with I-795. This translates to approximately 60 percent of the traffic diverting to the Goldsboro bypass. Although the traffic on U.S. 70 and the bypass are projected to increase significantly east of I-795, due to traffic to and from I-795, the percentage of traffic carried on the bypass decreases to approximately 47 percent. The percentage of traffic projected on the bypass east of U.S. 13 increases beyond 60 percent, although the actual volume of traffic drops significantly. There also is a sizeable amount of induced traffic, as can be seen from the difference between the total Build traffic on the bypass and U.S. 70, and the No-Build projections on U.S. 70.

Kinston Bypass:

The Kinston bypass also attracts a fair share of the traffic, away from U.S. 70. The percentage of traffic on the Kinston bypass, as compared to traffic on U.S. 70, ranges between approximately 40 and 60 percent. There appears to be less induced traffic on this bypass, as inferred from the total Build and No Build projections, which are similar in magnitude. A higher Build volume on the bypass and U.S. 70 combined, for example, would indicate induced traffic.

New Bern & Morehead Bypasses:

The New Bern bypass is projected to attract up to 50 percent of U.S. 70 traffic. The eastern portion of the New Bern bypass carries a lower percentage of the traffic volume as seen from Figure 4.2. Induced traffic is not significant as indicated by the total Build traffic compared to the No Build. However, this is not the case for the Morehead bypass. A comparison of the upstream and downstream Build versus No Build traffic volumes remain almost the same. However, an increase in traffic of almost 26,000 daily vehicles suggest that the Morehead bypass attracts a sizeable amount of induced traffic.

Table 4.1 U.S. 70 Base and Future Year Traffic Projections

	Base-Year Volume	2040 No-Build (from NCDOT)	2040 Build (From NCDOT)	Growth in Traffic Base Year to 2040	Change in 2040 Traffic Volumes Build vs. No- Build
I-95	21,400	33,800	33,800	58%	100%
Goldsboro Bypass Diverge	25,300	40,000	16,100	58%	40%
I-795	52,500	67,400	54,800	28%	81%
U.S. 13	33,300	51,100	36,700	53%	72%
Ash Street	17,100	33,600	12,400	96%	37%
Goldsboro Bypass					
Goldsboro Bypass Diverge			25,000		
I-795			49,400		
U.S. 13			27,600		
Goldsboro Bypass Merge	18,400	36,600	40,800	99%	111%
U.S. 70	33,800	37,000	24,800	9%	67%
Kinston Bypass					
U.S. 258 (West/North)	40,000	54,600	28,800	37%	53%
U.S. 258 (East/South)	27,000	32,000	12,600	19%	39%
U.S. 58	17,800	27,200	11,200	53%	41%
Kinston Bypass Diverge			27,600		
NC-11			22,400		
U.S. 258			18,200		
Trenton Highway			17,000		
Kinston Bypass Merge	16,700	29,200	29,200	75%	100%
New Bern Bypass					
NC-17 New Bern Bypass Diverge	16,700	29,400	18,800	76%	64%
NC-17 Bridge	45,400	82,100	65,800	81%	80%
Catfish Lake Road	28,700	52,000	34,300	81%	66%
Morehead Bypass Diverge	29,500	50,900	30,900	73%	61%
U.S. 24	18,400	29,200	28,300	59%	97%
Atlantic Beach Bridge	20,900	32,400	32,100	55%	99%
Morehead Bypass					
New Bern Bypass Diverge			9,000		
Morehead Bypass join in			26,400		

Source: NCDOT

Figure 4.1 Traffic Forecasts for Western Portion U.S. 70

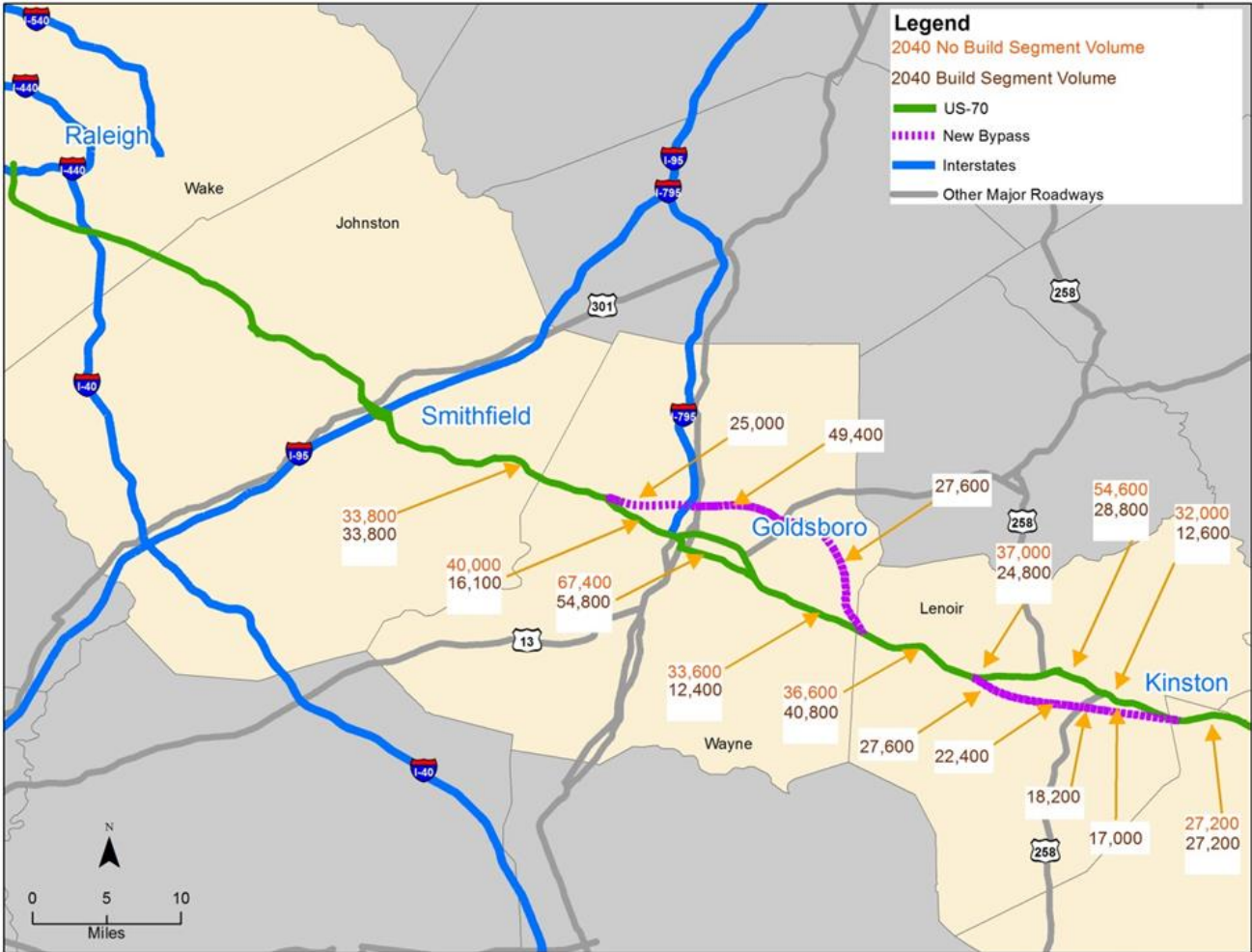
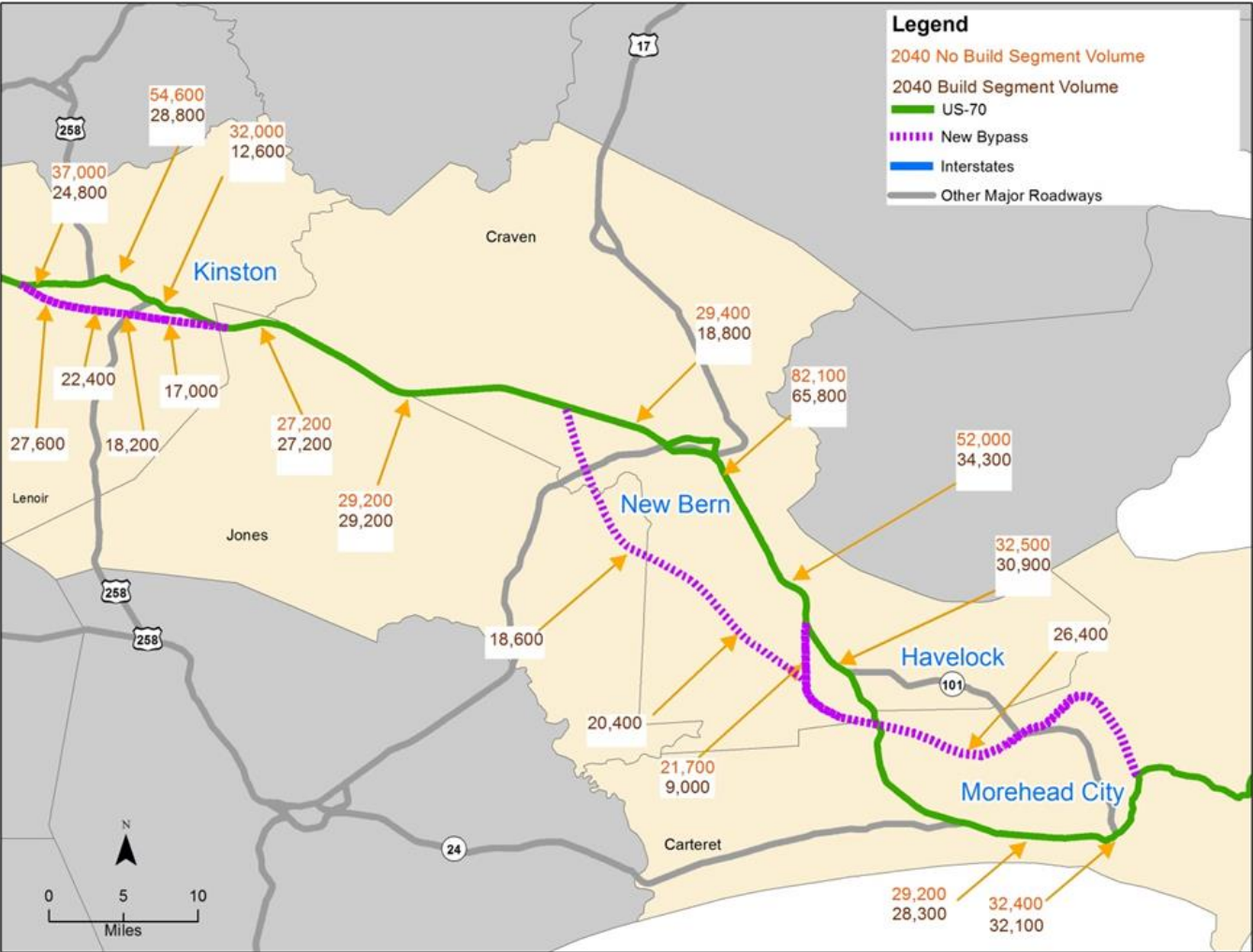


Figure 4.2 Traffic Projections for Eastern Portion U.S. 70





5.0 Economic Impact and Opportunities Assessment

The purpose of the U.S. 70 Corridor Economic Assessment study is to examine the economic impacts of proposed highway improvements along the Corridor. The economic framework and analysis process was vetted with the U.S. 70 Corridor Steering Committee and North Carolina Department of Transportation (NCDOT) with revisions based on their input. Direct economic impacts were developed from the analysis of existing and future traffic forecasts, and broader economic development data collected from various sources including stakeholders along the Corridor. These direct impacts were used to estimate total impacts, comprised of direct, indirect, and induced impacts using a customized economic model developed by Regional Economic Models, Inc. (REMI) for North Carolina. This methodological approach is designed to capture the economic impacts of U.S. 70 transportation performance changes and reactions associated with the proposed improvements.

5.1 ECONOMIC IMPACT OF TRAVEL EFFICIENCIES

The U.S. 70 Corridor Economic Analysis evaluates the economic implications of upgrading the U.S. 70 corridor based on regional traffic projections resulting from projected economic growth. This portion of the analysis answers the question of what is the economic impact of improving the corridor for existing businesses and residents. This involves evaluating two alternatives defined with input from the U.S. 70 Corridor Steering Committee, NCDOT, and local stakeholders. Scenarios evaluated include:

- **Business As Usual (BAU) or No Build:** Defined as ongoing maintenance and operations with no capacity expansion or completion of the bypasses from Morehead City to Raleigh. This scenario would result in worsening traffic conditions leading to increased transportation costs on U.S. 70. Traditionally, a base case scenario is compared to an improved network scenario, but in this study, an examination of how transportation costs are likely to change with limited improvements was needed. Thus, the team developed a BAU scenario to estimate the potential of foregone economic activity if improvements are not made to U.S. 70.
- **Build:** Defined as the implementation of the proposed improvements along the U.S. 70 to interstate standards with bypasses located in Goldsboro, Kinston, New Bern and Morehead City/Havelock. The improvements



include upgrading the length of the Corridor to interstate standards with retrofits to the existing highway and restricted access.

To ensure consistent understanding of the terms used in describing the analysis framework, key definitions and concepts are defined in Table 5.1.

Table 5.1 Variable Definition

Variable	Definition	Data Source
Vehicle miles traveled (VMT)	Measure of distance traveled (miles)	CS calculations based on NCDOT traffic forecasts
Vehicle hours traveled (VHT)	Measure of time spent traveling (hours)	CS calculations based on NCDOT traffic forecasts
Vehicle operating costs (VOC)	Measure of fuel and non-fuel vehicle maintenance costs of driving	AAA and American Transportation Research Institute (ATRI)
User impact	Impact to those directly driving on US 70 or any of the bypass routes	Calculated by project team

Economic impact analysis, in general, focuses on three types of impacts:

Direct User Impacts - These can include travel efficiency and logistics improvements in terms of change to:

- travel times,
- vehicle operating costs,
- changing traffic volumes leading to changes in business activities.

Business Competitiveness - Changes in business conditions that lead to more widespread economic impacts including:

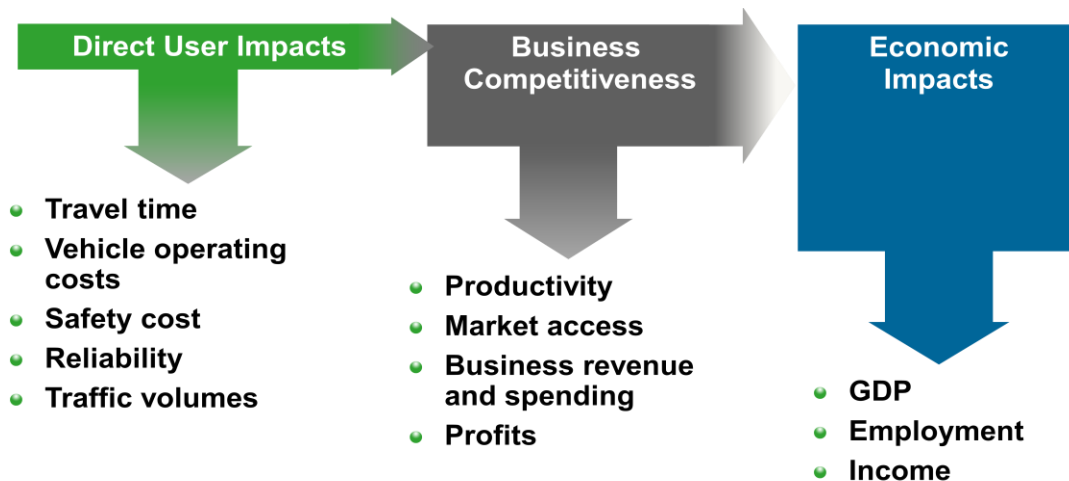
- productivity,
- market accessibility,
- business revenue or spending,
- tax incentives,
- profits, or
- a combination of factors.

Economic Impacts - The direct expenditures by the public and private sectors on any project have economic implications on the local and regional economies. These are exemplified by changes in gross regional product (GRP), employment, and income, to name a few.

Economic Modeling Methodology

The most important aspect of any impact analysis is understanding and accurately estimating the direct effects from investments, policies, and programs. Once quantified, the direct impacts are used in conjunction with economic impact models like REMI. REMI is a model that estimates the full economic impacts on local, regional, and state economies. These impacts are measured in terms of multiplier effects from indirect and induced effects on employment by industry, Gross Domestic Product (GDP) (or Gross Regional Product if discussing sub-national output), personal income, and business sales. Figure 5.1 provides an overview of the metrics included in the economic analysis methodology, which is explained in the section below.

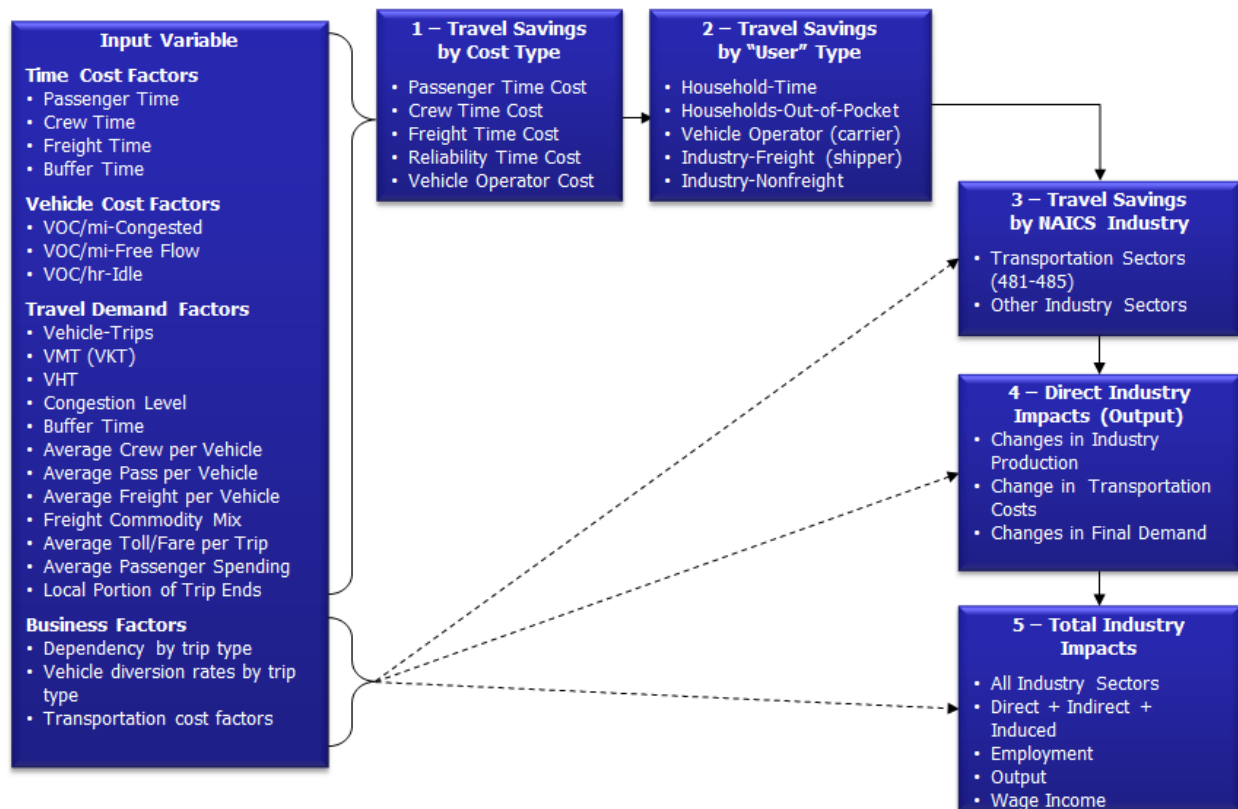
Figure 5.1 Impact Metrics for U.S. 70 Corridor Economic Assessment



Step-by-step approach

The direct inputs for the economic modeling of changes in travel efficiencies are derived in part from the results of the traffic demand model, including: time costs, vehicle costs, travel demand factors, and U.S. 70 business factors. Figure 5.2 depicts the process for estimating the economic impacts of the U.S. 70 Corridor improvements. The steps involved are summarized below.

Figure 5.2 General Analytical Framework



Step 1 – The travel savings are defined by category and then by stakeholder cost type to include cost type and user type. Costs associated with travel savings include passenger or crew time, freight time, reliability, and vehicle operating costs. These travel costs are influenced by changes in travel time and distance as well as U.S. 70 business factors, which contribute to the magnitude of changes in transportation costs.

Step 2 – The monetized costs are then assigned to specific users incurring these costs, which include households, carriers, freight shippers, and non-freight industries.

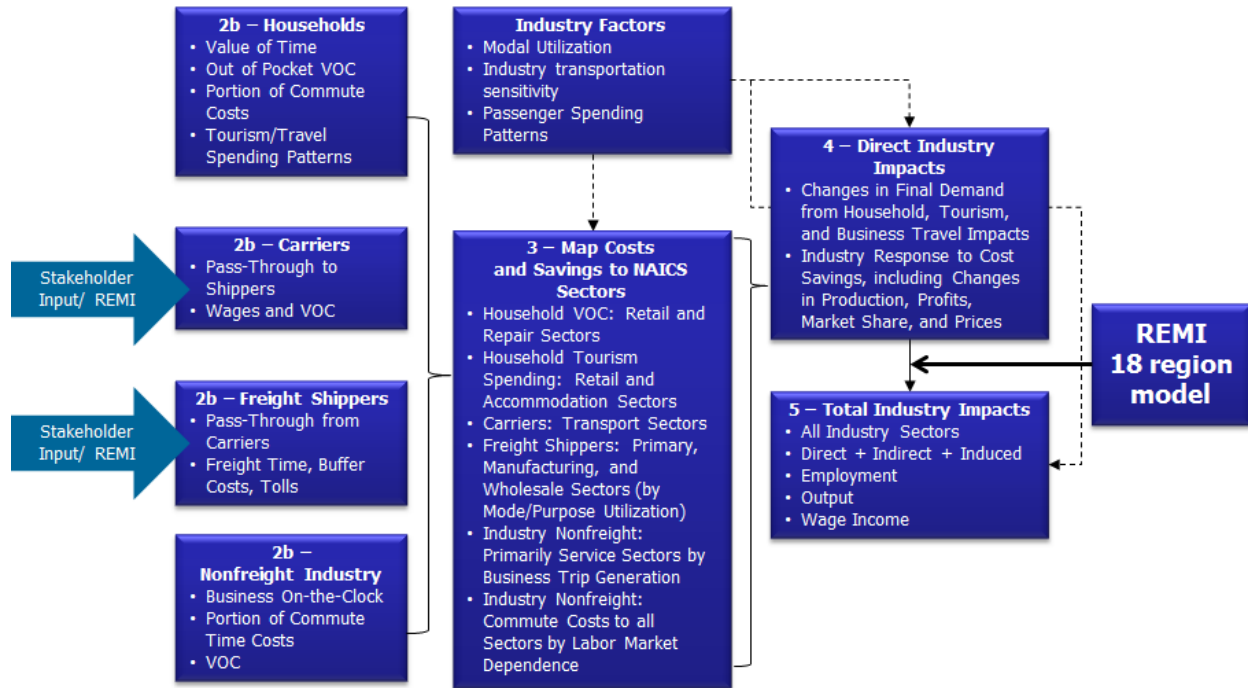
Household travel activity is divided into business and leisure travel to capture the different values of time associated with each activity, which impacts the economy differently. Business-related auto travel costs are borne by the employer, whereas non-business travel costs, including commute time, are borne by the individual as a personal expense or foregone benefits. In the case of the freight and freight-related industries, vehicle operators (carriers), shippers, and other industries and businesses bear the burden of the cost (or reap the benefit).

Each user travel savings (or cost) is estimated and assigned to the appropriate industry, including private households. Stakeholder input is critical to the analysis in providing insights to understanding specific nuances in the local

economy, such as carrier and freight shipper operating details. For example, the amount of buffer time applied to local trucking industries was provided by interviewees during the outreach activities.

Steps 3 and 4, depicted in Figure 5.3, drill down on the process of converting estimated transportation costs into inputs for the economic model and finally, total economic impacts.

Figure 5.3 Modeling Changes in Transportation Costs



Step 3 – Following the monetization by cost and user type, the travel savings (or costs) are then assigned to the appropriate industry sectors incurring the costs.

Step 4 – Once the users are identified and costs assigned, the corresponding increase or decrease in costs are prepared as inputs to the economic model by way of production cost, consumer spending, and personal tax variables for each study region.

Step 5 - When mapped to the North American Industrial Classification System (NAICS), the economic model produces results such as, but not limited to, employment, Gross Regional Product (GRP) or total level of economic activity, and disposable personal income. All results are provided for each of the counties along U.S. 70 and each of the study regions.

Valuation of Economic Impact of Travel Efficiencies

The analysis of economic impacts from transportation changes are based on changes to freight/crew or passenger time costs and vehicle operating costs.

Auto and freight movements along U.S. 70, as well as any changes to these movements, affect the vehicle cost, travel time, and travel demand factors of industries dependent upon the interstate in North Carolina. These changes are measured by the changes in vehicle miles traveled (VMT) or distance, and vehicle hours traveled (VHT) or total travel time. Both of these metrics are generated from the travel demand forecast discussed above.

User travel cost impacts are estimated as follows:

- Value of time (VOT)

$$VOT_{auto} = VHT_{auto} \times \text{avg number of passengers} \times \frac{\$}{\text{hour passenger}}$$

$$VOT_{truck} = VHT_{truck} \times \text{avg number of crew} \times \frac{\$}{\text{hour crewmember}}$$

- Vehicle operating cost (VOC)


$$VOC_{auto} = VMT_{auto} \times \left(\frac{\$}{\text{mile}_{fuel\ auto}} + \frac{\$}{\text{mile}_{non-fuel\ auto}} \right)$$

$$VOC_{truck} = VMT_{truck} \times \left(\frac{\$}{\text{mile}_{fuel\ truck}} + \frac{\$}{\text{mile}_{non-fuel\ truck}} \right)$$

Table 5.2 provides the source and value of each variable.

Table 5.2 Travel Cost Variable, Values, and Sources

Variable	Value (2012\$)	Source
Passenger Trip Purpose	Business – 20%	Based on information from Statewide travel demand model and stakeholder input
	Commute – 40%	
	Non-work/Non-commute – 40%	
Passenger VOT	Business – \$15.26 per hour	Statewide Hourly Median Value (All Occupations) – BLS
	Commute – \$15.26 per hour	Hourly Median Household Income – U.S. Census
	Non-work/Non-commute – \$10.95 per hour	
Passenger VOC	Fuel – \$0.18 per mile	AAA Driving Cost for North Carolina, 2012
	Non-Fuel – \$0.06 per mile	
Freight crew VOT	\$0.60 per mile	ATRI
Freight VOC	Truck – \$1.07 per mile	ATRI



The VOT encompasses the labor and non-labor costs associated with transporting goods along the U.S. 70 Corridor. Consisting of crew and freight costs, the VOT fluctuations are dependent upon changes to VHT. As congestion leads to delays, VHT increase, thereby increasing the VOT above the base year levels. These changes are translated into increases in production costs by industry.

Any changes in travel miles constitute fuel and non-fuel operation costs, which are identified as VOC. For example, as congestion increases on U.S. 70 resulting in delays, the VOC would most likely increase as a result of less fuel efficient speeds and increases in congestion-related idling.

Economic Impact Results

The following section presents results from the REMI economic model for each scenario. All results are for the study period 2014 to 2040, in constant 2012 dollars.

The BAU scenario assumes ongoing maintenance and operations with no capacity expansion or completion of the bypasses from Morehead City to Raleigh. Table 5.3 summarizes the economic impacts of the BAU over the period of 2014 to 2040. The continued growth of the population and overall economic activity is expected to lead to worsening traffic conditions along the Corridor, which is expected to increase business transportation for those utilizing the Corridor. These costs increase to as much as \$ 350 million in the U.S. 70 Corridor, over what costs would be if the current level of travel efficiencies is maintained between 2014 and 2040. These additional costs are over what costs would be if current level of travel efficiencies are maintained between 2014 and 2040. These increases in business transportation costs would be expected to lead to a weakening in economic activity as evidenced by decreases in GRP, personal income, and jobs over the study period for all regions in North Carolina as businesses bear the burden of increased production costs.

The BAU scenario presents a negative economic impact to North Carolina. It is important to note the decreases in the economic metrics are not negative levels of economic activity; rather, all results are presented in relation to an economic baseline forecast based on status quo activities. In other words, the economy is growing, but at a slower or reduced rate that is currently projected.

Table 5.3 Economic Impacts of Business as Usual Compared to the Baseline Economic Forecast
2014 to 2040

Metric	Incremental Change	%
U.S. 70 Counties		
Business Transportation Costs (\$billions 2012)	\$0.35	
Gross Regional Product (\$billions 2012)	(\$0.80)	(0.16)
Personal Income (\$billions 2012)	(\$0.60)	(0.11)
Jobs (average annual full-time)	(350)	(0.15)
Rest of North Carolina		
Gross Regional Product (\$billions 2012)	(\$1.08)	0.20
Personal Income (\$billions 2012)	(\$0.89)	0.17
Jobs (average annual full-time)	(450)	0.18

Source: Cambridge Systematics analysis using the REMI economic model. () denotes negative values

The Build scenario is defined as the implementation of the proposed improvements along the U.S. 70 to interstate standards with bypasses located in Goldsboro, Kinston, New Bern and Morehead City/Havelock. This scenario focuses on the positive impacts of improved traffic conditions. In this scenario, efficiencies are gained from the bypass improvements, which lead to business transportation cost savings totaling \$ 560 million between 2014 and 2040 along the Corridor. Thus, the U.S. 70 region as well as North Carolina are more economically competitive, with production cost decreases that lead to increases in GRP, personal income, and jobs. The results are displayed in Table 5.4. Much of the foregone economic activity seen in the BAU scenario is recovered with a forecasted increase in GRP of \$1.2 billion over the BAU forecast and an overall increase in North Carolina GRP of \$1.4 billion between 2014 and 2040. Clearly, the majority of benefits of the improvements are captured along the U.S. 70 Corridor but it is notable that the entire state benefits as well from the improvements. This finding supports the notion that the U.S. 70 Corridor is important to business activity in North Carolina. In addition to improved economic activity, much needed job growth is expected along the Corridor as well. Over the study period an increase of an average of over 550 jobs annually are expected along the Corridor from business transportation cost savings attributed to the proposed improvements.

Table 5.4 Incremental Economic Impacts Arising from Travel Efficiencies of Completing U.S. 70 Compared to the Business as Usual 2014 to 2040

Metric	Incremental Change	%
U.S. 70 Counties		
Business Transportation Costs (\$billions 2012)	(\$0.56)	
Gross Regional Product (\$billions 2012)	\$1.21	0.19
Personal Income (\$billions 2012)	\$0.91	0.18
Jobs (average annual full-time)	550	0.19
North Carolina		
Gross Regional Product (\$billions 2012)	\$1.41	
Personal Income (\$billions 2012)	\$1.04	
Jobs (average annual full-time)	600	


Source: Cambridge Systematics analysis using the REMI economic model. () denotes negative values

5.2 ECONOMIC DEVELOPMENT OPPORTUNITIES IMPACT

Economic changes in a region are not only driven by travel efficiencies but also by improved business attractiveness of an area. Since the assessment of 'attractiveness' is seemingly subjective and varies from one region to the next, local stakeholders were interviewed to provide a better understanding of the implications of an interstate quality Corridor between Morehead City and Raleigh on the economic development potential of the region. Those interviewed included: mayors, managers, planners, economic developers, elected and appointed board members, and business owners/operators. Additionally, economic development professionals from regional organizations and utilities were polled for their input. The combination of input from local stakeholders and growth along comparable corridors in North Carolina are used to present the potential economic development impacts of an improved U.S. 70 Corridor.

Improved Access and Economic Opportunities

The dependence on U.S. 70 as it relates to economic development possesses many aspects. Industry is unquestionably tied to U.S. 70 in order to get raw materials into plants and finished product out to customers. Another aspect on which industry depends on U.S. 70 is to get their employees to and from the employment centers. Completion of the improved Corridor will improve safety of those employees, reduce congestion, and potentially reduce commute times.



In addition, as has been found in Johnston County, the completion of the improvements and bypass can expand the labor pool and access to new markets. With travel time measured in time not miles, workers can now commute further distances in the same amount of time; greatly increasing the area from which companies can draw from. This is also the case with companies receiving or delivering products used in manufacturing. Based on the interviews and focus groups conducted, there are individuals that live in Kinston that commute to Raleigh for employment regularly. Under current conditions it would take a commuter approximately 1 hour and 22 minutes, under optimal conditions, to travel the nearly 80 miles to work each day in Raleigh. With the improvements, it could reduce travel time by almost 15 minutes each trip, totaling up to 30 minutes a day. This is but one example of the time savings potential of an improved U.S. 70 Corridor. Table 5.5 shows the potential time savings for businesses and commuters to key destinations along the Corridor.

Table 5.5 Potential Time Savings for Key Market Access Routes (Averages in minutes)


Route	Distance (miles)	Current Travel Times (minutes)	2040 No Build (minutes)	2040 Build (minutes)	Travel Time Savings in 2040
Global TransPark to Raleigh	81.5	91	126	70	56
Global TransPark to Port of Morehead	76.3	88	86	65	21
Global TransPark to I-95	54	60	65	50	15
Port of Morehead to Raleigh	147	152	198	130	68
Port of Morehead to I-95	116	122	155	110	45

Source: Google Maps and Cambridge Systematics, Inc. calculations using travel skims from the NS Statewide model. Build scenario speed limit is assumed as 70 mph.

Unencumbered access to the Global TransPark, Port of Morehead City, and I-95 are the key destinations for businesses in considering logistics costs associated with delivering or receiving products. The improvements along U.S. 70 could lead to time savings of an hour between key transportations assets along the corridor.

Comparison to Other Freeway Corridors

The completion of the improvements and bypasses will improve connectivity, which will enhance the region's competitive position in industrial, commercial, residential, retail, and tourism industries. The Corridor from eastern Johnston County to Beaufort is at a competitive disadvantage when compared to the surrounding regions in eastern North Carolina; the northeast and the southeast. Both regions have improved highway corridors that provide access from I-95 to the Coast, serving all the counties in between. Another way to evaluate the



potential impact of a improving U.S. 70 to a fully controlled access freeway is to compare the economic performance of the communities along U.S. 70 to those with similar attributes but are located along a fully controlled access facility. I-40 and U.S. 64/264 corridors provide such an opportunity.

In the northeast region of North Carolina U.S. 64 and U.S. 264 provide interstate quality access from I-95 to the Outer Banks and traverses several prominent cities in the regions; Rocky Mount, Greenville, and Wilson. With a few exceptions where at-grade intersections and traffic signals exist, this east-west corridor provides connectivity to the area and allows for the efficient transportation of goods. Additionally, it facilitates easy access for tourists visiting historic sites and vacationing in the Outer Banks. I-40, in the southeast region of North Carolina, provides interstate connectivity from Wilmington to I-95, the Triangle and beyond. In fact, I-40 is one of the predominate east-west corridors in the U.S. running from North Carolina to California. It was noted by local stakeholders that the improvements that I-40 brought to the counties that it passes through should be viewed as a model of the potential that an upgraded U.S. 70 could have on economic development in the counties included in the Corridor.

The improved connectivity that U.S. 64/U.S. 264 and I-40 provided contributed to the economic growth in those regions over time. The growth not only surpassed the growth along the U.S. 70 Corridor but in come cases attracted business away from the area. The U.S. 70 Corridor possesses the capability and potential of reaching economic growth targets seen by similar interstate Corridors in eastern North Carolina. As such, a comparison of the three corridors over the period of 1990 and 2012 is shown in Table 5.6. Between 1990 and 2012, the U.S. 70 Corridor region lagged significantly behind the U.S. 64/U.S. 264 and I-40 corridors in average annual growth by between half to almost 1 percent. The U.S. 64/U.S. 264 area is the fastest growing region among the three, which is mostly driven by the thriving utilities and services industries. It should be noted that several industries continue to struggle in all regions in eastern North Carolina, mostly the result of a lack in a skilled workforce. The competition with major nearby employment centers in Raleigh are also a factor.

While the U.S. 70 Corridor has had difficulty competing with the other two regional corridors, two notable industries remained strong along the U.S. 70 Corridor and exhibited explosive growth over the 1990 to 2012 period. Education services and mining are two industries that have nearly doubled in growth. With the planned improvements and bypasses, the U.S. 70 Corridor could stand to expect significant growth over a relatively short period of time. This growth may not only be limited to existing historical industries in the eastern North Carolina region but also in new target industries attracted to efficient transportation options.

Table 5.6 Comparison of Private Sector Employment Growth Along Key Corridors in Eastern North Carolina

<i>Corridor Comparison</i>	U.S.70 Corridor		I-40 Corridor		U.S.64/264 Corridor	
Employment Growth	Average Annual Growth Rate	Change in Employment Concentration	Average Annual Growth Rate	Change in Employment Concentration	Average Annual Growth Rate	Change in Employment Concentration
	1990-2012	1990-2012	1990-2012	1990-2012	1990-2012	1990-2012
Average	-0.05%	5%	0.45%	24%	0.87%	126%

Source: North Carolina LEAD (Labor & Economic Analysis Division) of the North Carolina Department of Commerce, QCEW data from <http://esesc23.esc.state.nc.us/d4/QCEWSelection.aspx>

Impact of Closing the Economic Growth Gap

Analysis of the employment growth in communities along all three corridors reveals that average annual employment growth for roughly the last two decades along the U.S. 70 corridor has lagged that of both I-40 and U.S. 64/264. Assuming that the existence of the fully controlled access highway facility is the primary difference between these communities, one could assert that enhancing U.S. 70 to interstate standards will play a key role in closing that employment growth gap.

Table 5.7 displays the potential gain in employment if communities along U.S. 70 had grown at the same average annual growth rate as those along I-40 and U.S. 264/64. Although simplified, this examination provides some insights into potential induced traffic above and beyond the traffic forecasts discussed in Chapter 3. If the communities are able to mitigate other potential competitive disadvantages in conjunction with an improved U.S. 70 corridor, they could possibly exceed the growth rates in the comparison corridors. Thus, the economic impacts arising from these additional opportunities may exceed those presented here.

Table 5.7 Employment Impact of Closing the Growth Gap between U.S. 70 and I-40 and U.S. 64/264

	I-40	U.S. 64/264
	Growth Rate	Growth Rate
Average Annual Additional Jobs along U.S. 70	600	1,350

Source: Cambridge Systematics analysis based on employment data from NS Department of Commerce

5.3 KEY FINDINGS

For each scenario and study region, summary impacts of improved travel efficiencies for traffic projected to use the corridor based on baseline economic growth forecasts include:

- Business transportation costs – Travel time cost plus vehicle operating costs without tolls;
- Gross Regional Product (GRP) – Total value of economic output and general measure of the size of a region’s economy;
- Personal Income – Value of wages, salaries and proprietor’s income; and
- Jobs – Measured in average annual full-time equivalent jobs.

Summary findings are presented in Table 5.8.

Table 5.8 Summary of Incremental Economic Impacts of U.S. 70 Corridor, 2014 to 2040

Source of Impacts	Travel Efficiencies Existing Traffic		Induced Traffic from Closing Employment Gap	Total Impacts
	No Build	Build	Build	Build
U.S. 70 Corridor				
Business Transportation Costs (\$ Billions)	\$0.35	(\$0.56)		(\$0.056)
Gross Regional Product (\$ Billions)	(\$0.80)	\$1.20	\$1.35- \$2.60	\$2.55 - \$3.80
Personal Income(\$ Billions)	(\$0.61)	\$0.90	\$1.00 - \$1.95	\$1.90 - \$2.85
Jobs (average annual full-time)	(350)	550	600 – 1,350	1,150 – 1,900
Rest of North Carolina				
Gross Regional Product (\$ Billions)	(\$1.08)	\$1.40		\$1.40
Personal Income(\$ Billions)	(\$0.89)	\$1.05		\$1.05
Jobs (average annual full-time)	(450)	600		600

Source: Cambridge Systematics analysis using a REMI economic model and employment data form NC Department of Commerce



Key takeaways include:

- Not making the improvements along U.S. 70 will result in slower economic growth along the corridor in the order of 350 fewer jobs per year and \$800 million less in GRP and \$610 million less in personal income between 2014 and 2040 in the corridor counties. For the state of North Carolina as a whole, the impact of not making the improvements would be \$1.9 billion in GSP, \$1.5 billion in personal income by 2040 and an average of 800 fewer jobs per year.
- A fully controlled access highway would give rise to significant travel efficiencies for existing business and residents in North Carolina. Along the corridor, these include \$56 million in business cost savings, \$1.2 billion in GRP and over \$900 million in additional personal income between 2014 and 2040. This translates into nearly 550 additional jobs on average per year when compared to business as usual. Statewide the impacts are projected to be \$2.6 billion on GSP and nearly \$2.0 billion in income by 2040, translating into an average of 1,150 more jobs annually.
- An interstate quality highway could also help the region be more competitive in inducing additional business and populations. If the corridor could match the growth rates of the similar corridors in eastern North Carolina, that could translate into 600 to 1,350 additional jobs per year along U.S. 70.
- In total, the upgrading the entire U.S. 70 corridor could give rise to an additional 1,150 to 1,900 jobs per year for communities along on the corridor and an additional 600 jobs statewide for a total potential impact of 2,500 jobs annually.