

CHAPTER 2 – STUDY AREA CONDITIONS

Existing and historic conditions within the study area were examined as part of this study, including socioeconomic information, existing transportation infrastructure, traffic and operational characteristics, and environmental issues.

A. SOCIOECONOMICS AND LAND USE

The socioeconomic overview outlines information related to the characteristics and features that serve to define the travel patterns within the I-66 study corridor from Somerset to London and the surrounding region. While providing an initial priority segment for the Southern Kentucky I-66 Corridor, the implementation of the Somerset to London segment will allow for a linkage between the Louie B. Nunn (Cumberland) and Daniel Boone Parkways. The development of this facility is intended to support the economic vitality of a broad region of southern Kentucky and Appalachia. It is also intended to improve travel safety, increase accessibility, enhance mobility and reduced congestion. These benefits will also result in the social, economic and land use impacts within the region. This section addresses population levels, labor force and employment characteristics, and land uses within the region, along with potential impacts related to the proposed I-66 corridor development.

1. Population

The study corridor from Somerset to London includes Pulaski and Laurel counties in south-central Kentucky. The estimated population levels of these counties for 1990 and 1999, and the projected population levels through 2020 are provided in **Table 2.1**. Predictions for historic population growth are obtained from the U.S. Bureau of the Census *1990 Census of Population and Housing*. Estimates of existing and future population levels are obtained from the Kentucky State Data Center at the University of Louisville.

Table 2.1 Population Estimates

Year	Pulaski	Laurel
1990	49,489	43,438
1999	57,110	52,015
2000	58,226	52,792
2010	63,712	59,710
2020	66,629	65,122

As shown, Pulaski and Laurel counties have experienced significant growth levels since 1990, with the population of Pulaski County increasing by 15 percent and the population of Laurel County increasing by nearly 20 percent.

Using the U.S. Census Bureau counts of population by census block group, the concentration of population within Pulaski and Laurel counties is illustrated in **Exhibit 2.1**. Much of the population within these counties is centered along north-south corridors in the region, with

the heaviest concentrations occurring within the cities of Somerset and London. In Pulaski County, population is concentrated north and south of Somerset along the U.S. 27 corridor. In Laurel County, population is generally concentrated south of London along the I-75 and US 25 highway corridors.

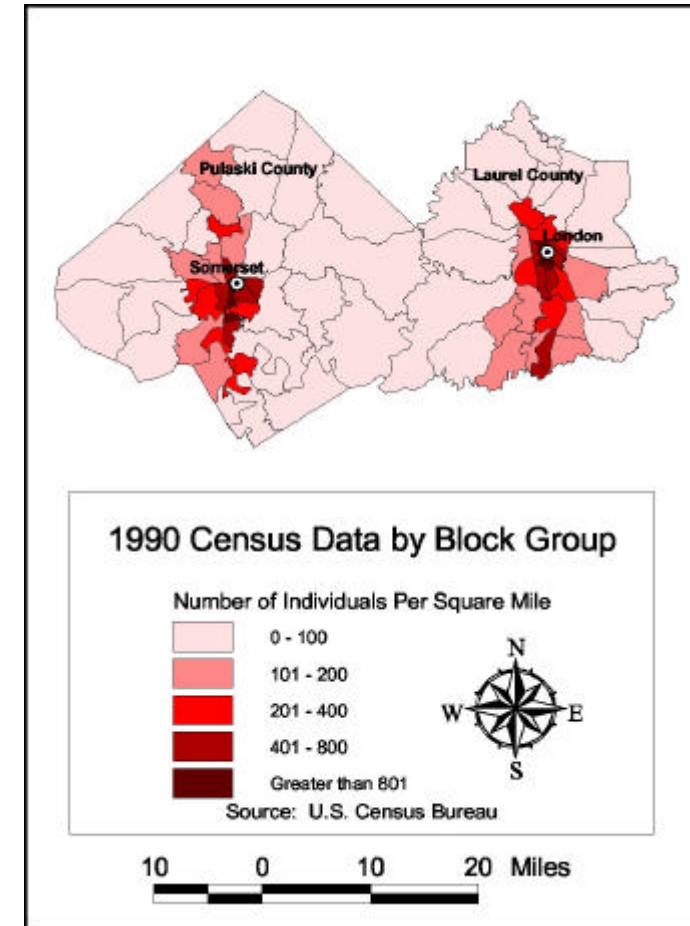


Exhibit 2.1 Block Group Population

In comparison to surrounding counties within the south-central Kentucky region, Pulaski and Laurel counties are clearly the population centers for the region in terms of both total population and population growth. Shown in **Exhibit 2.2** are 1999 population estimates for Pulaski and Laurel counties as well as the ten counties that surround these two counties. In addition to Somerset and London, other population centers in the surrounding area include:

- Corbin, Whitley County (8,000)¹
- Williamsburg, Whitley County (6,008)
- Monticello, Wayne County (5,720)
- Barbourville, Knox County (3,973)
- Stanford, Lincoln County (2,989)
- Mt. Vernon, Rockcastle County (2,603)
- Liberty, Casey County (2,003)
- Jamestown, Russell County (1,732)
- Manchester, Clay County (1,776)

Also shown in Exhibit 2.2 are population growth rates from 1990 to 1999 for the region. A number of the counties adjacent to the study area have experienced higher population

growth in the last ten years than the Kentucky average rate of 7.4%, including Lincoln (12.2%), Russell (10.0%), Wayne (9.9%), Jackson (9.1%), Whitley (8.4%), Rockcastle (7.9%), and Knox (7.8%) counties.

The implementation of the I-66 corridor through Pulaski and Laurel counties as well as through the entire southern Kentucky region could help to support population growth within this area. Improved access to the region would support existing populations and facilitate ever-increasing traffic flow between Somerset and London. Future project development activities should consider the impact that this potential population growth may have on the region in terms of compatible land uses and development issues.

¹ Population data is based on the U.S. Census Bureau 1998 census data and is shown in parentheses in terms of persons within each population center.

CHAPTER 2 – STUDY AREA CONDITIONS

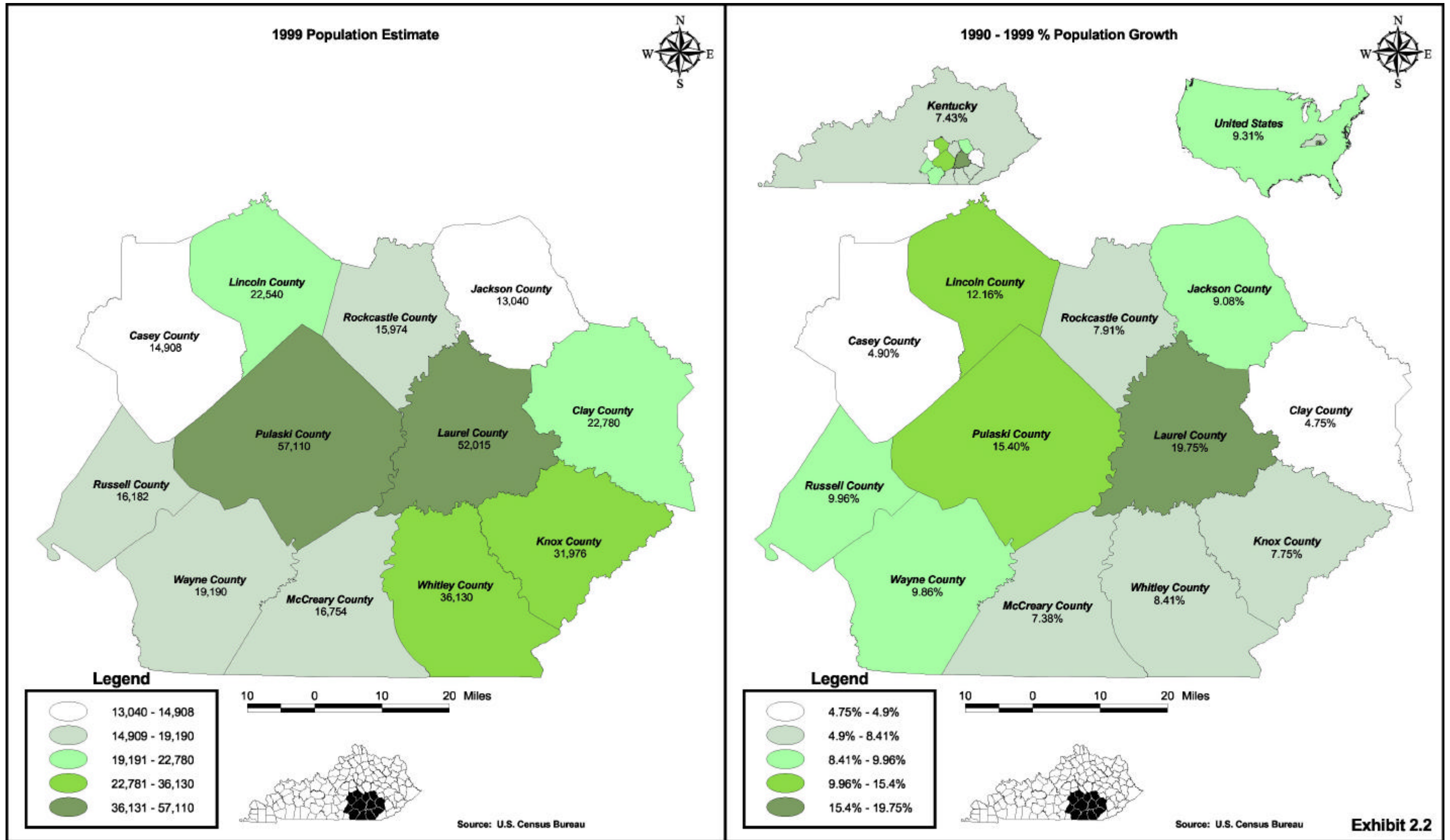


Exhibit 2.2

Population Characteristics

CHAPTER 2 – STUDY AREA CONDITIONS

2. Labor Force and Employment Characteristics

This section examines the labor force characteristics for the region, considering issues by place of residence of the workers. The section also examines employment characteristics, examining issues by place of employment of the workers. As of the year 2000, Pulaski County has an estimated total civilian labor force of 25,245, with an unemployment rate of 4.0 percent. Laurel County has a total estimated civilian labor force of 23,157, with an unemployment rate of 4.6 percent. As shown in **Exhibit 2.3**, the Pulaski and Laurel County unemployment rates are slightly lower than the rates in most of the surrounding counties. On the other hand, the Laurel County rate is higher than the state average unemployment rate of 4.0 percent.

Based on 1997 data, as shown in **Exhibit 2.4**, the per capita personal income (pcpi) for Pulaski County was \$17,470. This number is 85 percent of the state average pcpi (\$20,570) and 69 percent of the national average of \$25,288. For Laurel County, the 1997 pcpi was \$16,478, which is 80 percent of the state average and 65 percent of the national average. 1995 poverty estimates for the area indicate that 21.2 to 41.4 percent of the population in the study area counties is at or below poverty level. These rates are higher than the statewide poverty average of 17.9 percent. As of 1997, full and part time jobs totaled 30,872 in Pulaski County and 27,173 in Laurel County. Both of these figures are significantly higher than those for surrounding counties, as shown in **Exhibit 2.5**. Average earnings per job for the study area counties indicate that earnings in Pulaski and Laurel counties are higher than most of the surrounding counties, but quite similar to those in Clay, Knox and Whitley Counties.

Based on a 1992 breakdown of labor force characteristics in the I-66 corridor region, the components of employment in the study counties are listed in **Table 2.2**. Shown in **Table 2.3** are major businesses and industries that are located within the study area as of March, 2000. Agriculture also plays a large part in the local economies. The Kentucky Agricultural Statistics Service reported Pulaski County's 1997 total cash receipts as just over \$41 million dollars, ranking it 21st of the 120 counties in Kentucky. Laurel County, ranked 66th, had \$2.9 million in total cash receipts reported.

Table 2.2 Labor Force Characteristics

Type of Labor	Percent of Labor Force	
	Pulaski	Laurel
Wholesale and Retail Trade	32	28
Manufacturing	23	22
Services	19	20
State and Local Government	11	16
Contract Construction	7	4
Other	8	10

Potential benefits were identified through the results of the "Southern Kentucky Corridor (I-66) Economic Justification and Financial Feasibility" report completed for the corridor. Many area businesses, along with others within the categories listed in Table 2.2, are expected to have

an increase in trade due to the construction of the I-66 corridor. The retail trade and manufacturing businesses could have better interstate connections while the service industry (i.e., motels, gas stations, convenience marts, etc.) could see an increase in locations for potential business development near the I-66 interchanges. New jobs would be created to construct the I-66 corridor and to serve the development that accompanies a limited access highway, bringing an additional influx of people to the area. Furthermore, the contract construction business could increase as new developments are built, along with the construction of I-66. Both the state and local governments may need to provide more services in order to keep up with the demand of the additional business generated by I-66. In short, the implementation of the I-66 corridor through the study region could potentially decrease the unemployment rate and increase the pcpi.

Table 2.3 Study Area Industry

Pulaski	Employees	Laurel	Employees
CDR Manufacturing	100	Aisin Automotive Casting Inc	275
Crane Plumbing LLC	300	American Greetings Corp	950
Crane/FIAT/Sanymetal	135	Begley Lumber Co.	250
Mid-State Automotive Industries	100	CTA Acoustics	500
General Electric Co	180	Flav-O-Rich	250
Glen Oak Lumber & Millings Inc	100	Kern Earthgrains	300
Hartco Flooring Co.	285	Laurel Cookie Factory	300
Hayes Lemmerz Intl. Inc.	400	Leeco, Inc.	350
Kingsford Manufacturing Co	125	Mrs. Smith's Bakery of London	425
Lake Cumberland Regional Hospital	1500	Phoenix Manufacturing Co	100
Plaid Clothing	500	Thermo-Disc, Inc.	300
Somerset Refining, Inc.	178		
Southern Belle Dairy Co., Inc.	175		
Somerset Houseboats	200		
Techumseh Products Co.	750		
Toyotetsu America Inc.	230		

The proximity of a new route in the study area could also benefit businesses, employment opportunities and income levels in the surrounding counties. It is important to note that Clinton and Wayne Counties are designated U.S. Empowerment Zones, areas targeted for growth and revitalization through improved economic opportunities and community development. Likewise, Knox County (Corbin) is a Kentucky Enterprise Zone, encouraging development through tax incentives and eased regulations for new businesses.

CHAPTER 2 – STUDY AREA CONDITIONS

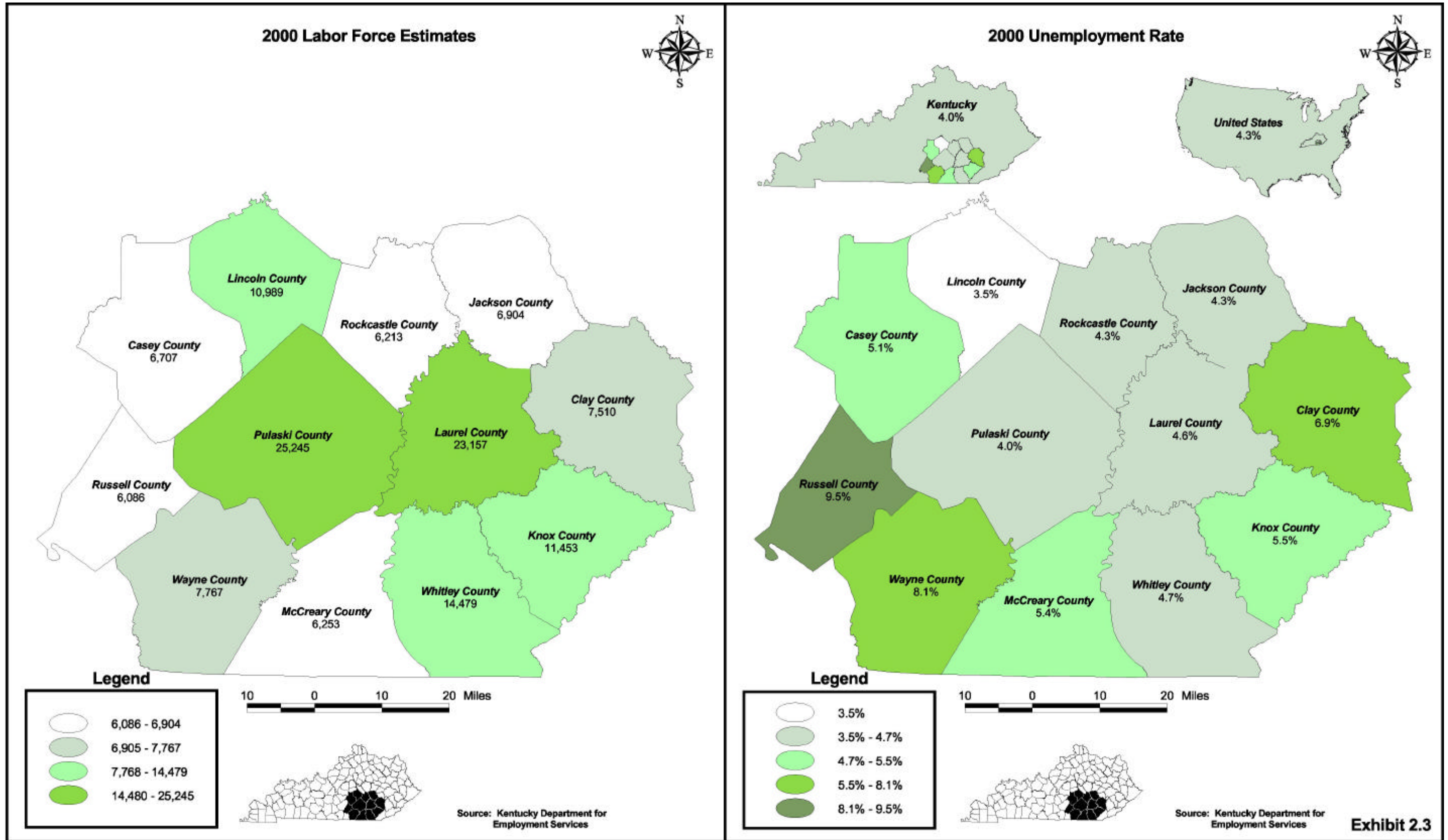


Exhibit 2.3
Labor Force Characteristics

CHAPTER 2 – STUDY AREA CONDITIONS

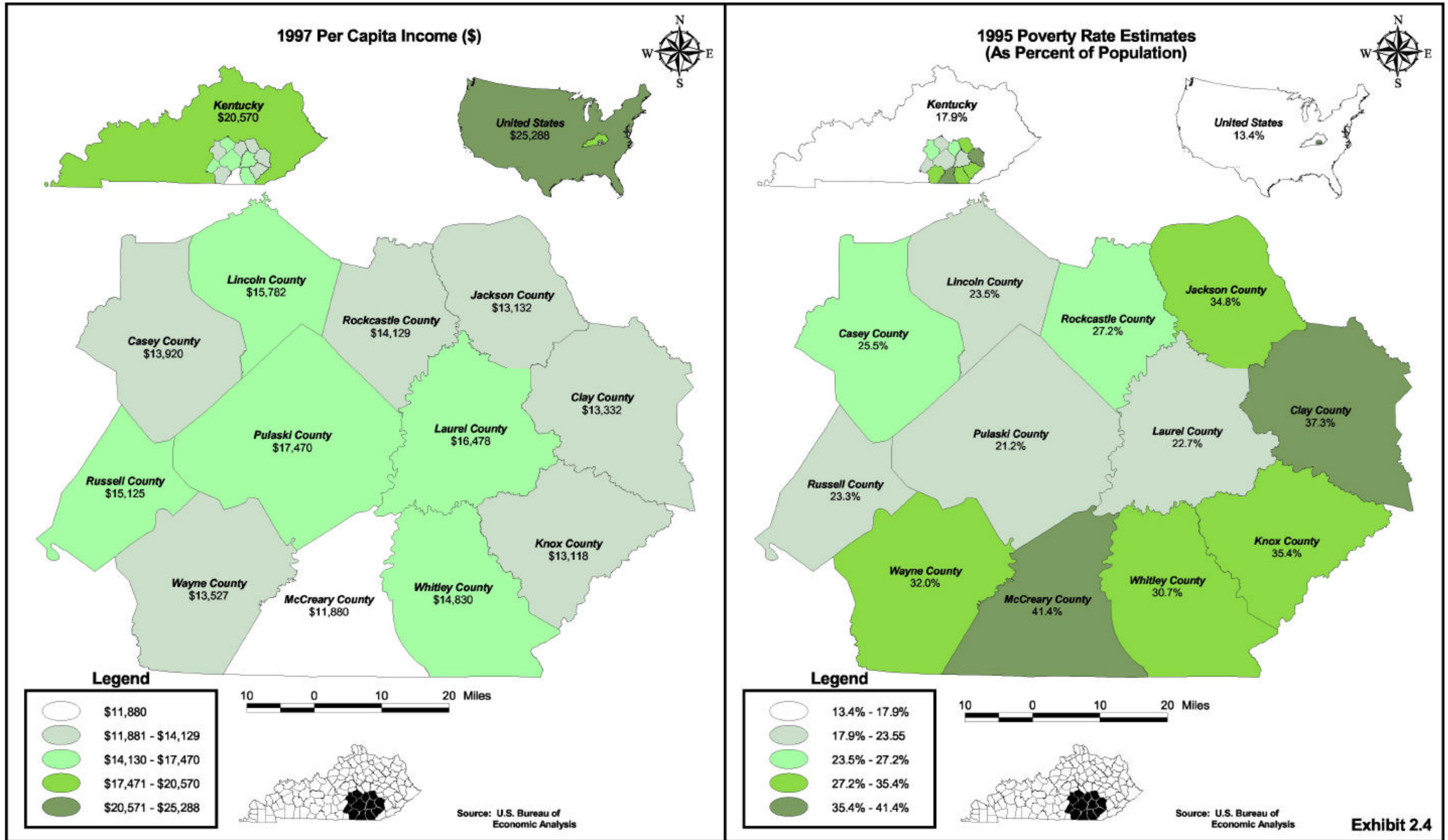


Exhibit 2.4
Earnings Information

CHAPTER 2 – STUDY AREA CONDITIONS

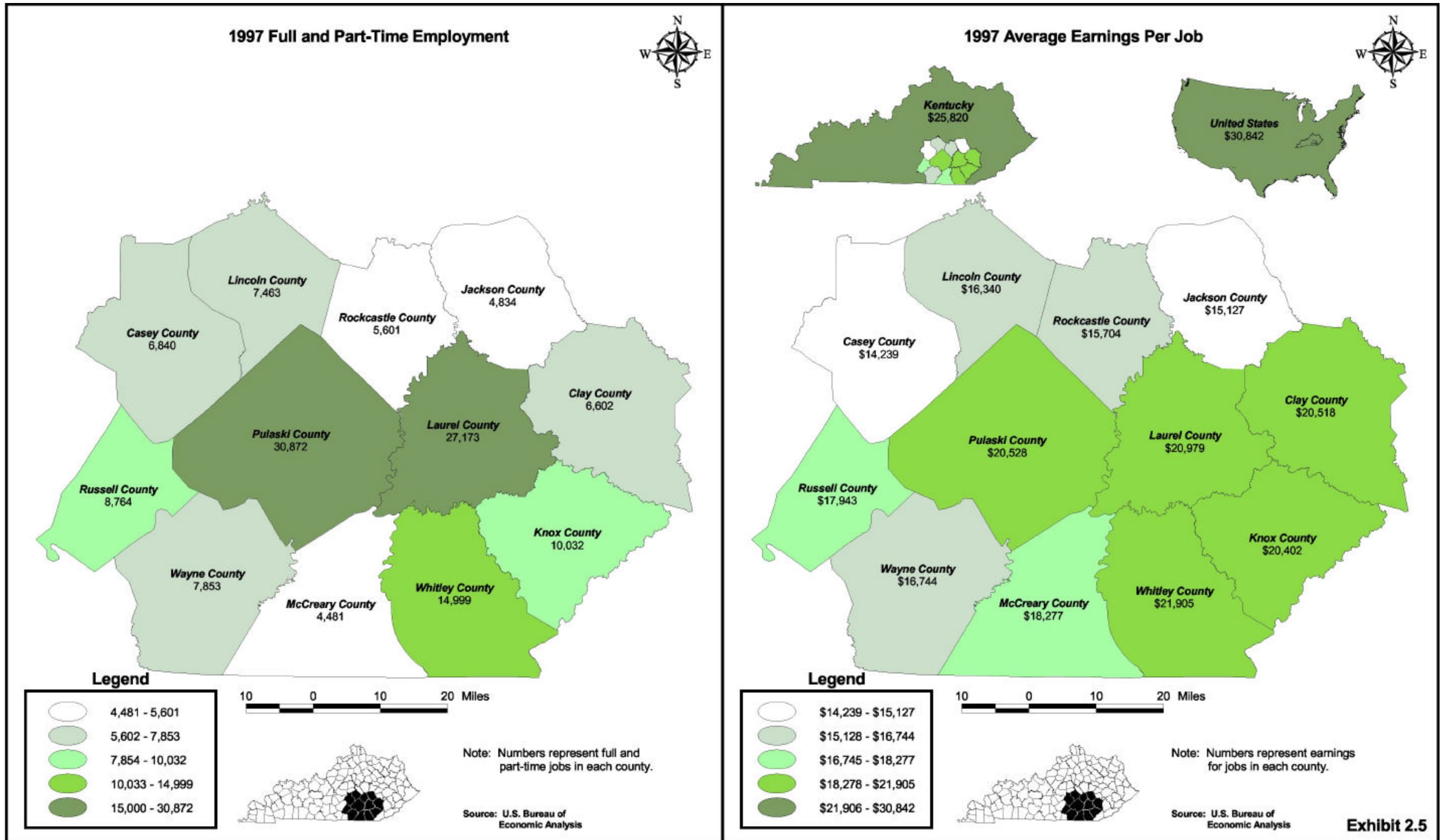


Exhibit 2.5
Employment Characteristics

CHAPTER 2 – STUDY AREA CONDITIONS

In addition to the possible increases in the employment sectors listed above, the tourism industry could experience substantial growth due to the improved access to the region from I-66. Lake Cumberland, Laurel River Lake, the Daniel Boone National Forest and Levi Jackson Wilderness Road State Park are a few of the major attractions located within the I-66 corridor. In 1994, Pulaski County had over 1,600 persons employed in travel and tourism-related enterprises, while Laurel County had over 1,800 persons involved in this type of employment. The potential growth in tourism could cause an increase in needed employment in the travel and tourism-related industry. Furthermore, the additional summer population generated by the tourism industry could put more dollars into the local economy, which could benefit the non-tourist businesses as well. Some of the regional tourism attractions are shown on **Exhibit 2.6**.

Although the impacts of a new interstate facility could be very beneficial to the economy by stimulating job growth and increasing each county's tax base, communities will have to plan for additional infrastructure and community services to serve the potential increases in businesses, future population growth and community needs. Because of projected population increases, potential areas of concern include noise and air quality issues, roadway congestion, and the need for additional infrastructure improvements to serve these demands. These are some of the items that will require additional coordinated and comprehensive planning with appropriate local and state agencies as the I-66 project continues through the development process.

3. Land Use

The I-66 study corridor features many types of rural and urban land uses. These include agricultural and woodland operations, commercial, residential, industrial, tourism, public/semi-public and transportation facilities (i.e., air, rail and highway). Urban land uses around Somerset and London and rural land uses for the remainder of the corridor characterize the study area. A generalized illustration of land uses within Pulaski and Laurel counties is provided in **Exhibit 2.7**.

Urban land uses include residential, public and semi-public, commercial, retail trade and personal service businesses and various types of manufacturing activities. Urban area boundaries are defined for cities where the population is 5,000 persons or greater. Within the corridor, there are two urban area boundaries – Somerset in Pulaski County and London in Laurel County. According to the U.S. Census, 1995 population figures estimate 6,629 people in London and 10,769 people in Somerset. The urban area that may be affected by the corridor near Somerset is generally located west of the KY 192 and KY 80 intersection. In London, the affected area is generally located between I-75 and the Daniel Boone Parkway. The city of Corbin, an urban area with a 1995 population of 7,932 persons, is situated south of the study area in Knox County and may also be impacted by a new interstate corridor.

Rural areas consist of a mixture of residential, agricultural and federally and state-owned forest property. Much of the rural land between Somerset and London is characterized by a mix of deciduous, evergreen and mixed forest lands of the Daniel Boone National Forest and other areas. Rural areas in the proximity of Somerset and London are characterized by a large amount of crop and pasturelands. Major crops and farm production within the study area include corn, soybeans, wheat, burley tobacco, alfalfa hay and other hays. The chief livestock in the study area includes cattle, hogs and pigs.

The impacts of developing the proposed highway corridor could potentially alter land use patterns by increasing the amount of land used for new development. In turn, these

developments could create an increase in the need for more infrastructure (i.e., water, sewer, schools, housing, etc.). Existing and potential land use effects should be considered in selecting a recommended corridor and in the future development of highway alignment options. While this consideration is being afforded at the earliest practical stages of highway planning, such considerations should continue through design, right-of-way acquisition and construction.

Highway development options to minimize land use impacts consist of visual aesthetics, land use buffers, transition zones, and other important environmental considerations. Aesthetics and viewsheds are especially important near existing tourism and recreational areas, such as the Daniel Boone National Forest, Cane Creek Wildlife Management Area and other scenic natural areas.

B. EXISTING STUDY AREA CHARACTERISTICS

The major characteristics of the study area were identified with respect to the existing transportation network system data, geometric roadway conditions, bridge data, major crossroads, intermodal information, and planned highway improvements.

1. Highway Systems

To gain information on the existing features of the study area highways, data from the KYTC Highway Information System (HIS) computer database were accessed and summarized. Existing roadway system information for the major routes in the area is included in **Table 2.4**. Important east-west links across Pulaski and Laurel counties include the KY 80 and KY 192 corridors. At the US 27 intersection on the west side of Somerset, the Louie B. Nunn (Cumberland) Parkway transitions into the KY 80 corridor. At the US 25 intersection on the northwest side of London, the Daniel Boone Parkway also becomes KY 80. North-south routes include US 27 through Somerset as well as the US 25 and I-75 corridors through the London area.

Most of the routes listed in Table 2.4 are on the State Primary or State Secondary system, with a functional classification of either Principal Arterial or Major Collector. Several of these routes provide access to the National Highway System (NHS), AAA highways and the National Truck Network (NTN). **Exhibit 2.8** shows the existing truck route designations for Pulaski, Laurel and the surrounding counties.

Except for those highways otherwise designated by the KYTC, basic legal truck dimensions are 13.5 feet in height, 8 feet in width, with an overall length of 65 feet including tractor and trailer. Also permitted on non-designated highways are trucks with basic dimensions of 8.5 feet in width with a single trailer of 28 feet in length. Weight restrictions for the roadways are classified as "A" (44,000 pound gross limit), "AA" (62,000 pound gross limit) or "AAA" (80,000 pound gross limit).

On designated National Truck Network highways, shown in blue on Exhibit 2.8, increased dimensions of 8.5 feet in width, with a single trailer up to 53 feet in length, or two trailers each up to 28 feet per truck tractor, can be accommodated. Routes crossing the I-66 corridor are an important consideration for trucking movements. Potential interchanges should be designed to accommodate these trucks. In accordance with the 603 KAR 5:070, in reference to the designated National Truck Network "102-inch wide trucks shall be allowed five (5) driving miles on state maintained highways from the highway segments designated as such, for the purpose of attaining reasonable access to terminals, facilities for food, fuel, repairs and rest. In addition to state-maintained highways, these trucks are allowed one (1) driving mile on non-state maintained public use highways."

CHAPTER 2 – STUDY AREA CONDITIONS

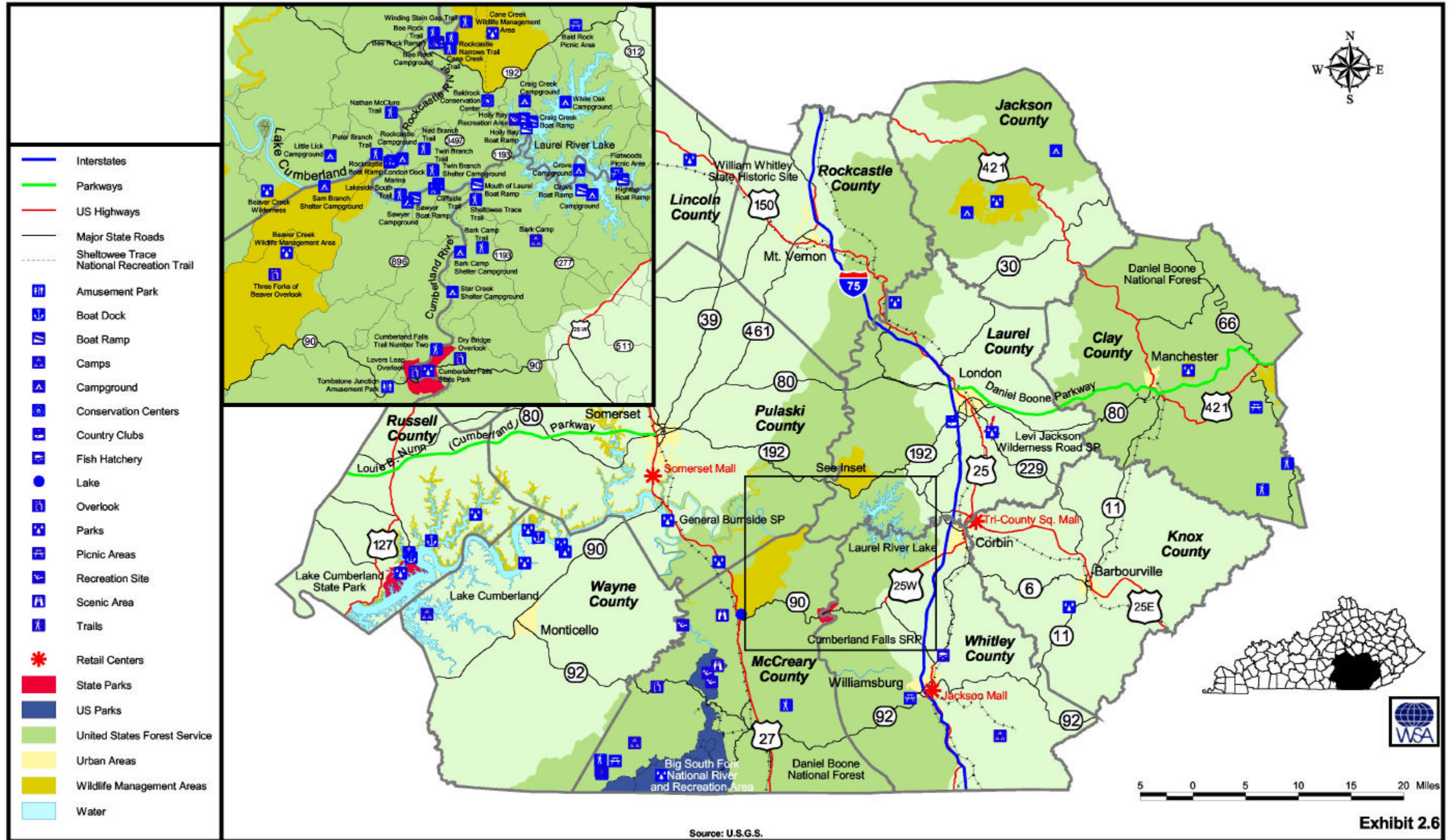
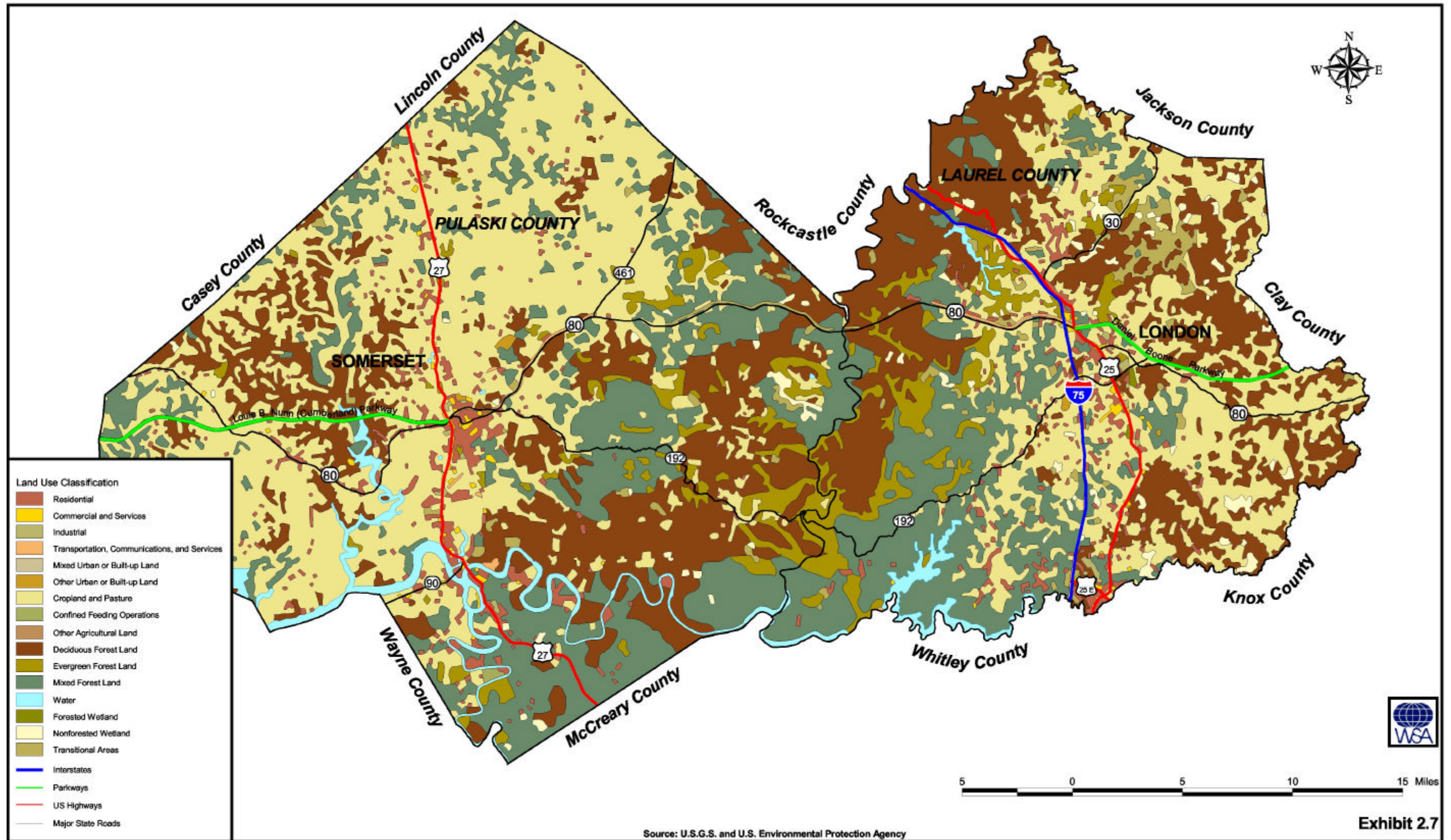


Exhibit 2.6
Regional Tourism

CHAPTER 2 – STUDY AREA CONDITIONS



Source: U.S.G.S. and U.S. Environmental Protection Agency

Exhibit 2.7

Land Use Classification

CHAPTER 2 – STUDY AREA CONDITIONS

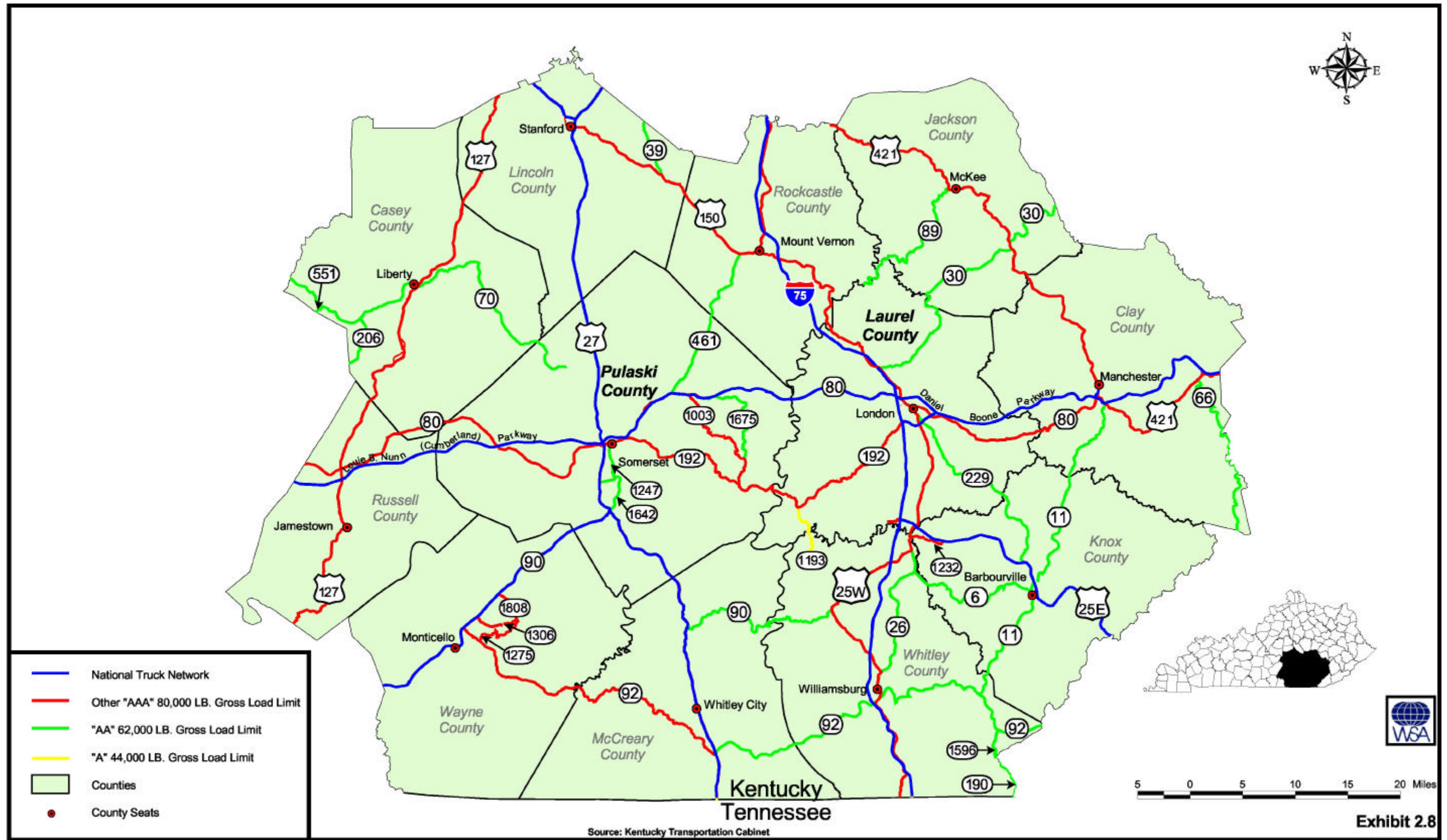


Exhibit 2.8
Regional Truck Network

CHAPTER 2 – STUDY AREA CONDITIONS

Table 2.4 Existing Route Inventory

County	Route	No. Lanes	Lane Width	¹ Functional Classification	² State System	³ NHS	⁴ Truck Route Designation	⁵ Natl. Truck Network
Pulaski	Louie B. Nunn (Cumberland) Pkwy.	4	12'	PA	PKWY	Yes	"AAA"	Yes
	US 27	2-6	12'	PA	PRIM	Yes	"AAA"	Yes
	KY 80	2-4	10'-15'	PA	PRIM	Yes	"AAA"	Yes
	KY 80 Bypass	4	12'	PA	PRIM	Yes	"AAA"	Yes
	KY 192	2	9'	MJC	SSEC	No	"AAA"	No
	KY 461	2	12'	MNA	SSEC	No	"AAA"	Yes
	⁶ I-75	4	12'	INT	INT	Yes	"AAA"	Yes
Laurel	Daniel Boone Pkwy.	2	12'	PA	PKWY	Yes	"AAA"	Yes
	US 25	2-4	11'-12'	MJC	SSEC	No	"AAA"	No
	US 25E	4	12'	PA	PRIM	Yes	"AAA"	Yes
	US 25W	2	12'	PA	PRIM	No	"AAA"	No
	KY 80	2-4	10'-12'	PA	PRIM	Yes	"AAA"	Yes
	KY 192	2-4	9'-12'	MJC	SSEC	No	"AA"	⁷ No
	KY 229	2	10'-12'	MJC	SSEC	No	"AA"	No
	KY 312	2	9'-10'	MJC	SSEC	No	"A"	No
	KY 1193	2	10'	MJC	SSEC	No	"A"	No

Note: Data represent major characteristics of area routes.

¹ INT=Interstate, PA=Principal Arterial, MJC=Major Collector, MNA=Minor Arterial

² INT=Interstate, PKWY=Parkway, PRIM=Primary, SSEC=State Secondary

³ National Highway System

⁴ "AAA"=80,000 Lb. Gross Load Limit, "AA"=62,000 Lb. Gross Load Limit, "A"=44,000 Lb. Gross Load Limit

⁵ Designated routes where 102" wide vehicles are allowed access

⁶ I-75 is currently under construction to 6-8 lanes

⁷ Segment between I-75 and Daniel Boone Parkway is on network

2. Roadway Geometrics

Geometric characteristics for major existing routes in the study area are listed in **Table 2.5**. This highway information focuses on lane and shoulder information, adequacy ratings and route speed limits. Such data helps to identify the extent of necessary highway and interchange improvements for routes intersecting with I-66.

Lane widths along these corridors average between 10-feet and 12-feet, with 9-foot sections found along portions of KY 192 in Pulaski and Laurel counties. Narrow shoulders are present along portions of KY 80, KY 192, and KY 229. Highway adequacy, or sufficiency ratings are numerical indices that provide a composite representation of the physical condition, safety, service and efficiency of operation of roadway sections throughout Kentucky. Adequacy ratings range from zero to 100, where a score from 92 to 100 is very good; 85 to 91.9 is good; 75 to 84.9 is fair; and any number less than 75 is considered to be a poor rating. Ratings below 75 are found along sections of KY 80, US 27, the Daniel Boone Parkway, US 25 and KY 229.

Table 2.5 Highway Characteristics

Route	County	Description	Mile-points	# Lanes	Lane Width (ft.)	Shoulder Width (ft.)	¹ Adequacy Rating	Speed Limit (mph)
KY 80	Pulaski	Sardis to KY 1248	13.5 - 16.2	2	10	8	88	55
		KY 1248 to US 27	16.2 - 17.8	2	10 - 12	8	86 - 91	45 - 55
		US 27 to KY 192	17.8 - 21.5	2	10 - 20	3 - 10	57 - 93	25 - 45
		KY 192 to KY 1317	21.5 - 25.9	2 - 4	12	8 - 12	81 - 90	45 - 55
	Laurel	KY 1317 to Laurel Co.	25.9 - 40.0	4 - 2	12	10 - 12	85 - 92	55
		Pulaski Co. to KY 1535	0.0 - 7.5	2 - 4	12	0 - 10	69 - 87	55
		KY 1535 to I-75	7.5 - 10.6	4	12	10	87 - 90	45 - 55
		I-75 to US 25	10.6 - 11.1	4	12	10	57 - 82	45
		US 25 to KY 192	11.1 - 13.2	2	11	10	82	45 - 55
KY 192 to KY 830	13.2 - 17.2	2	10	2	82	45 - 55		
Louie B. Nunn (Cumberland) Parkway	Pulaski	Exit 78 to US 27	78.0 - 88.0	4	12	10	94	65
US 27	Pulaski	Sloans Valley to KY 90	0.0 - 9.8	2	12	8 - 10	60 - 89	35 - 55
		KY 90 to KY 2299	9.8 - 15.4	2 - 6	12	8 - 10	57 - 89	35 - 45
		KY 2299 to KY 80	15.4 - 16.8	6	12	10	64	45
		KY 80 to KY 1247 North	16.8 - 20.8	6 - 2	12	10 - 12	70 - 84	45 - 55
		KY 1247 North to KY 70	20.8 - 30.7	2	12	10	83	55
KY 192	Pulaski	KY 80 to Blaze Valley Rd.	0.0 - 3.0	2	9	2	75	45 - 55
		Blaze Valley Rd. to Laurel Co.	3.0 - 18.6	2	9	2 - 3	75 - 85	55
	Laurel	Pulaski Co. to Marsh Br. Rd.	0.0 - 7.3	2	9	2	79 - 81	55
		Marsh Br. Rd. to KY 552	7.3 - 12.6	2	9 - 10	1 - 2	79	55
		KY 552 to I-75	12.6 - 18.2	2	10	1	79 - 84	55
		I-75 to US 25	18.2 - 20.1	4	12	10	79 - 84	55
US 25 to DB Pkwy.	20.1 - 22.0	4	12	10	81	55		
DB Pkwy.	Laurel	I-75 to KY 354	0 - 1.7	4 - 2	12	10	56 - 75	55
		KY 354 to KY 192	1.7 - 4.1	2	12	10	56 - 84	55
		KY 192 to Clay Co.	4.1 - 10.6	2	12	10	83 - 91	55
² I-75	Laurel	Exit 29 to KY 192	29.0 - 38.2	4	12	10	86-89	65
		KY 192 to KY 80	38.2 - 40.7	4	12	10	88	65
		KY 80 to Exit 48	40.7 - 49.0	4	12	10	87	65
US 25	Laurel	US 25E to KY 3431	0.0 - 2.0	4 - 2	12	10	93	55
		KY 3431 to KY 1006	2.0 - 9.0	2	12	10	93	45 - 55
		KY 1006 to KY 192	9.0 - 10.4	2	11	10	70	45
		KY 192 to KY 80/DB Pkwy.	10.4 - 13.6	2 - 4	11 - 12	2	61 - 83	25 - 45
		KY 80/DB Pkwy to Pittsburg Overpass	13.6 - 14.4	4 - 2	12	10	81 - 93	45
		Pitts. Overpass to KY 490	14.4 - 16.3	2	12	-	90	45
		KY 490 to Rockcastle Co.	16.3 - 23.9	2	11	-	90 - 95	55
KY 229	Laurel	KY 1023 to KY1189	4.3 - 7.7	2	10	1	72	55
		KY 1189 to KY 1006	7.7 - 8.8	2	10	1	72	55
		KY 1006 to US 25	8.8 - 12.3	2	10 - 12	1	80 - 83	45 - 55
KY 461	Pulaski	Sardis to KY 1248	0.00-2.20	2	12	10	91	55
		KY 1248 to US 27	2.20-7.02	2	12	10	91	55
		US 27 to KY 1317	7.02-8.44	2	12	10	91	55

¹ 92 - 100 = Very Good; 85 - 91.9 = Good; 75 - 84.9 = Fair; less than 75 = Poor

² I-75 is currently under construction to 6-8 lanes

3. Bridge Inventory

Exhibit 2.9 shows the locations of bridges and their proximity to the corridors. It is important to note that some crossroads and access routes, to and from the proposed I-66 corridor, may need to be upgraded to sufficient design standards to handle truck traffic. This will include replacement or rehabilitation of some existing bridge structures along those routes. Improvement costs for potential widening or replacement options will depend on the class of roadway and the adequacy of the existing bridge structure.

Throughout the course of this study, particular interest has been expressed concerning the existing bridge along KY 80 at the Rockcastle River which falls within a Wild River boundary. Administered by the Division of Water in the Department for Environmental Protection, the Kentucky Wild River program protects designated rivers from developments which could cause long-term harm to the river's resources. According to the Division of Water, eligible rivers "must have good to excellent water quality, be essentially wild and undeveloped and have no impoundments; there is no minimum size or length requirement." Investigation of the Kentucky Wild River statutes (KRS 146) indicates that relocation of the KY 80 corridor from Billows to its current location was not prohibited, and that an additional bridge at this new location would be allowed. However, continuing considerations should include items such as buffer zones, erosion control, viewsheds, and potential enhancement projects which may accompany any bridge improvements at this important location.

4. Major Crossroads

The access points selected for the I-66 corridor will be based on the concept of moving traffic through the region so it can reach its final destination safely and efficiently. The majority of west-to-east traffic through the region is traveling between Somerset and London, or to access I-75, the parkway corridors, and the recreational facilities located in Pulaski and Laurel counties. The access points will serve all major roadway facilities and help to alleviate congestion on the surrounding roadway network.

Major crossroads within the corridor study area include key arterials and collectors, such as US 27, KY 80 and KY 192 in Pulaski County. In Laurel County, key crossroads include KY 80, KY 192 and the US 25 corridor (see Table 2.4 and Table 2.5). Major interchanges are also anticipated at the Louie B. Nunn (Cumberland) Parkway in Somerset, as well as the I-75 and the Daniel Boone Parkway corridors near London.

5. Multimodal Facilities

The TEA-21 legislation emphasizes the consideration of all transportation modes and intermodal connections in the planning, building and operation of transportation systems. In addition to the railroad facilities that service the study area, such facilities include airports, trucking facilities and industrial parks in this region of the state.

There are two main railroad lines located within the project study area, as shown on **Exhibit 2.10**. In Pulaski County, the *Norfolk-Southern Corporation* rail line lies between Somerset and US 27. In Laurel County, the *CSX* line lies east of London, between US 25 and the Daniel Boone Parkway. Both of these rail lines provide north-south service throughout this area. Approximately 30 to 40 CSX trains pass through London every week. The main types of freight include coal, coke and iron ore. Additional freight consists of paper, chemicals, wood, automobile components and finished automobile parts. The Norfolk-Southern freight through Somerset

typically includes coal, coke, lumber, iron ore, paper, chemicals and automobile parts. Coal tipple facilities are concentrated primarily in the easternmost counties of the Commonwealth, as well as in Hopkins and Webster counties in western Kentucky.

One general aviation (public) airport is located in each of the two study area counties. These airports provide no commercial airline service. The nearest commercial airline facilities are located in Lexington, Kentucky (Blue Grass Airport) and Knoxville, Tennessee (Magee-Tyson Airport). Both of these commercial airports are approximately 75 miles from the I-66 corridor.

The Somerset-Pulaski County – J.T. Wilson Field Airport is located about three miles south of Somerset. The elevation is 927 feet above mean sea level (msl), and Runway 04-22 is paved, 5000 feet long and 100 feet wide. According to 1999 figures, this airport has an average of 77 aircraft operations per day. The 1998 Kentucky Aviation Systems Plan includes recommendations for a total of \$5.6 million in improvements to the Somerset-Pulaski Airport through the year 2002. Improvement projects include:

- Non-directional beacon and localizer (1998);
- Overlay for Runway 04-22 (1998);
- Site preparation for a new terminal complex (1999);
- Precision approach path indicator (2000);
- Parallel taxiway pavement and medium intensity runway lights (2000);
- Master plan preparation (2001); and
- Apron and access road pavement (2001).

In addition to Pulaski County's general aviation airport, it should be noted that there is one private airport facility (Boss Field) near Burnside, south of Somerset.

The London-Corbin Airport, Magee Field, is located three miles south of London and handles an average of 37 operations per day. The elevation is 1212 feet above msl with one paved runway, 05-23, 6002 feet long and 150 feet wide. The 1998 Kentucky Aviation Systems Plan includes recommendations for a total of \$2.7 million in improvements to the London-Corbin Airport through the year 2002. Improvement projects include:

- Medium intensity runway lights (1998);
- Completion of a parallel taxiway (2000);
- Omni-directional approach lighting system (2001);
- Ten-unit T-hangar (2001);
- Medium intensity taxiway lights (2002);
- Taxiway extension – 4,000' by 35' (2002); and
- Apron expansion – 10,000 square yards.

More information for each of these area airports can be found in **Appendix A**. A private, unnamed airstrip is also located about 1.5 miles northeast of Bunch, providing access for coal companies mining in the area. Exhibit 2.10 details multimodal facilities for the entire Commonwealth of Kentucky.

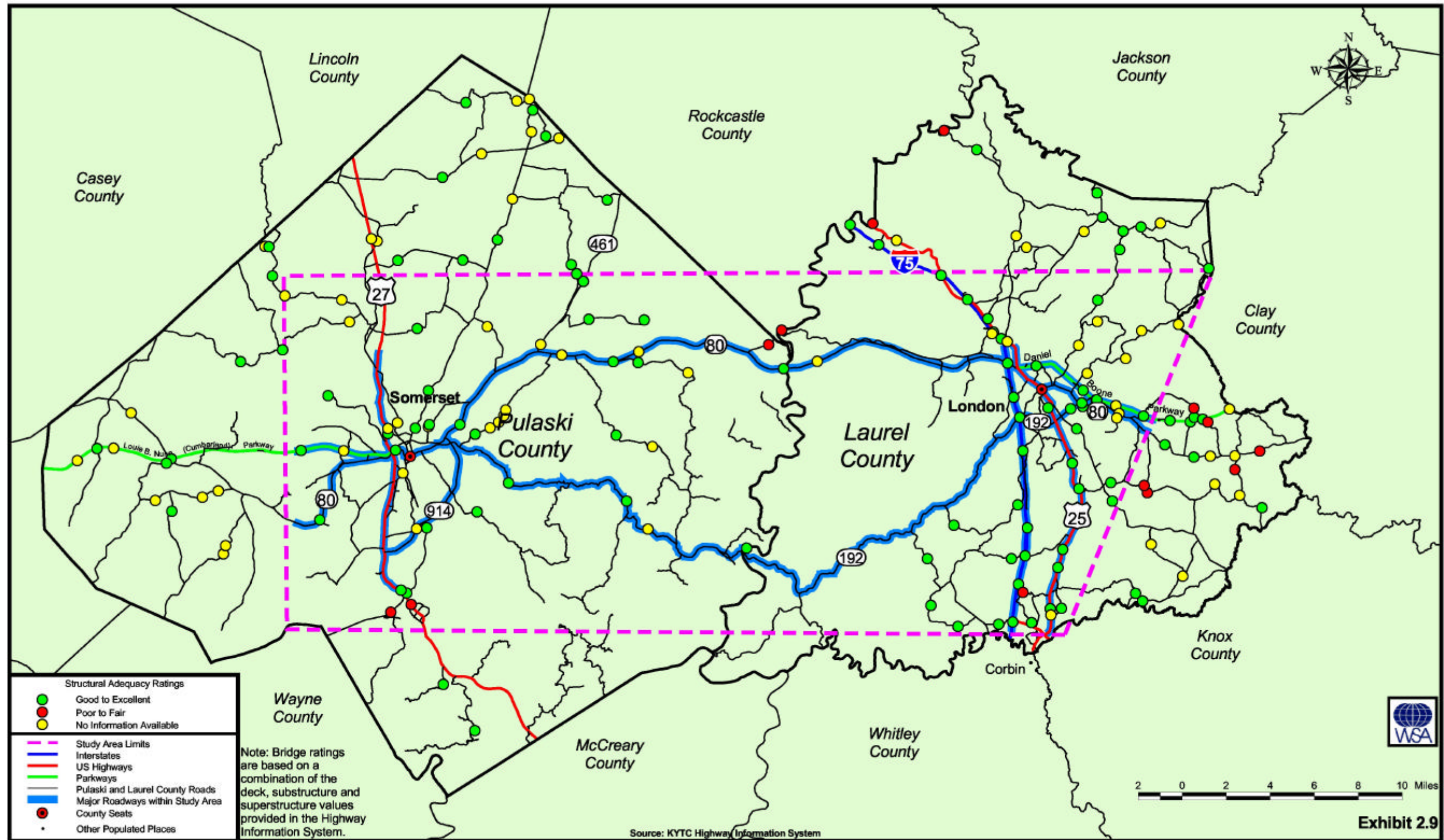


Exhibit 2.9
Existing Bridge Inventory

CHAPTER 2 – STUDY AREA CONDITIONS

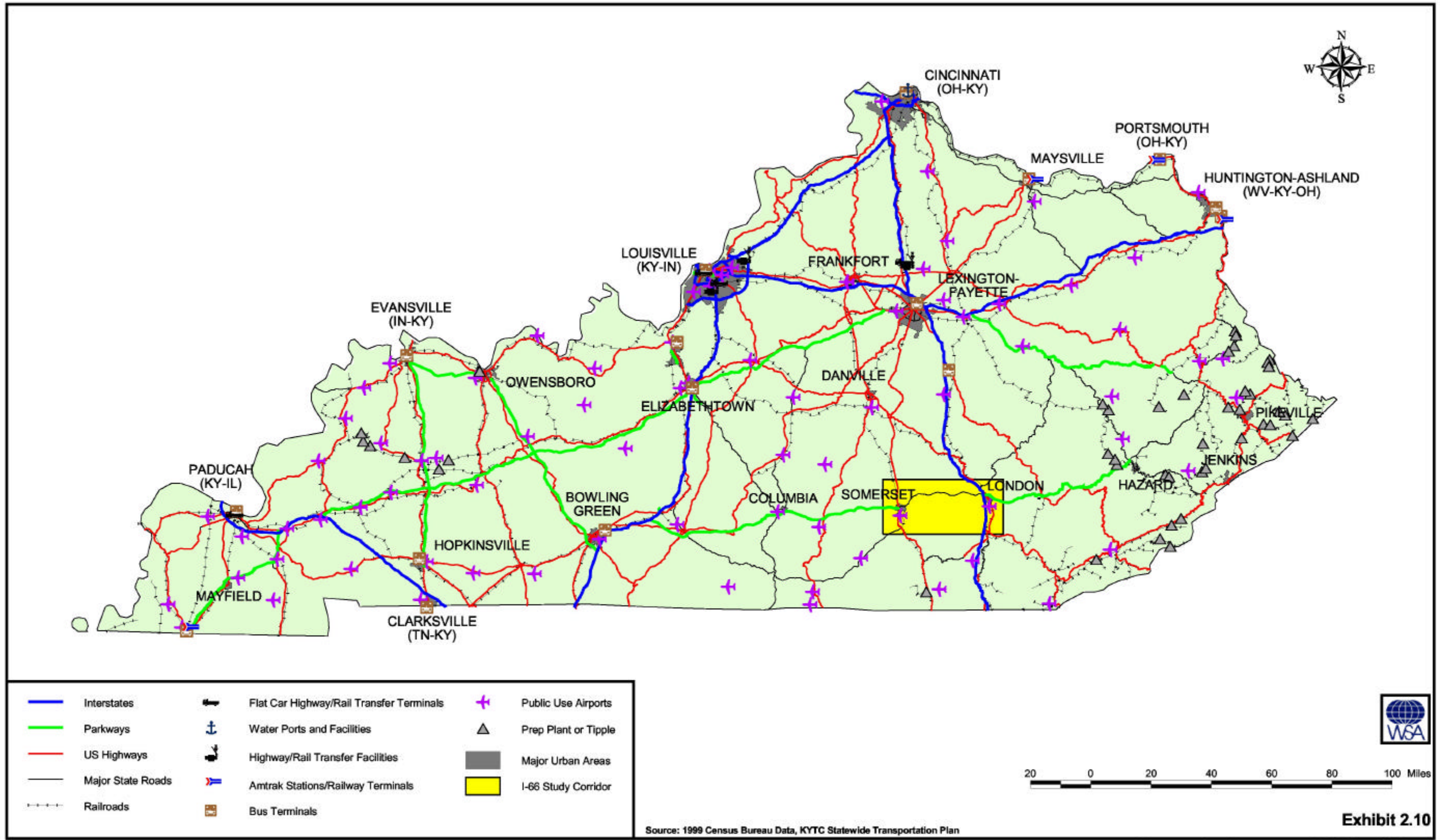


Exhibit 2.10
Kentucky Intermodal Facilities

CHAPTER 2 – STUDY AREA CONDITIONS

Other facilities in the study area include 21 trucking companies that provide goods to the Pulaski County region as well as 22 trucking companies that deliver to Laurel County. Somerset is in the process of planning local bus service through a private transit company called RTEC. Transit service is not currently available in the London area, although local taxi service is provided. Greyhound bus service is available in both London and Corbin. Listed in **Table 2.6** are a number of industrial park facilities also located in the study counties and the region. As shown, some of the larger industrial facilities are located in Knox County, with a county total of 1,045 acres dedicated to industrial sites.

Table 2.6 Area Industrial Park Facilities

County	Site ID	Name of Park	Total Acres
Casey	045-001	Liberty Industrial Park Site 2	7.0
Clay	051-001	Clay/Leslie County Industrial Park	54.3
Jackson	109-001	Jackson County Regional Industrial Park	32.0
Knox	121-001	Barbourville	153.0
	198	Corbin Tri-County Industrial Park	276.6
	121-003	Southeast Kentucky Regional Industrial Park	615.8
Laurel	125-001	London	176.9
Lincoln	137-001	Stanford/Lincoln County Industrial Park	16.2
McCreary	198	Pine Knot Potential Site	47.6
	147-002	Stearns	9.0
	147-003	Chewford Industrial Park	170.0
	147-004	Meadows Grove Industrial Park	100.0
	147-005	Strunk Industrial Park	45.0
Pulaski	199-001	Valley Oak Commerce Complex East	73.6
	199-002	Valley Oak Commerce Complex West	158.0
		Lake Cumberland Commerce Complex	70.0
Rockcastle	203-002	Rockcastle Industrial Park South	52.7
Russell	207-001	Russell County Business Park	81.0
	207-002	Jamestown Industrial Park	34.7
Wayne	231-001	Wayne County Potential Site	71.3
		Monticello Industrial Park	100.0
		Wayne County Industrial Park 1	59.0
		Wayne County Industrial Park 2	70.0

6. Planned and Programmed Improvements

The KYTC's *Statewide Transportation Plan (STP)*² identifies programmed and planned short-term and long-term improvements over a twenty-year period. Programmed short-term improvements are those projects that have been specifically defined and have some commitment of funding. The KYTC's *Six Year Highway Plan (FY 2001-2006)*³ comprises the short-term component of the STP. Short-term improvements within Pulaski and Laurel counties are summarized in **Appendix B**. A number of projects exist within both Pulaski and Laurel counties. In Laurel County, the most significant projects are the major widening of I-75 and relocation of KY 30. In Pulaski County, major projects are the widening of US 27 and new routes between the Louie B. Nunn (Cumberland) Parkway and KY 80 and the Somerset Southwest Bypass between US 27 and the Louie B. Nunn (Cumberland) Parkway. Programmed short-term funding also exists for further design and development of the I-66 corridor within Pulaski and Laurel counties.

Long-term improvements are those improvements that have been identified as needed but do not have a commitment of funding. These improvements are contained in the STP as part of the 1999 Long-Range Highway Plan. The Long-Range Highway Plan comprises the years 7 through 20 of the Statewide Transportation Plan. Long-range improvements within Pulaski and Laurel counties are also summarized in Appendix B. The projects listed as long-range improvements are generally a continued effort from the short-term plan including widening of I-75 and US 27, relocation of KY 30 and providing a new southwest bypass for Somerset. Several long-range improvements are identified for the I-66 corridor within Pulaski and Laurel counties, as well as other counties statewide, as "illustrative" projects. Illustrative highway projects are a special category of needed highway system improvements that are unlikely to move forward until and unless, project-specific funding is identified at the federal level. Approximately \$2.6 billion of projects involving I-66 segments within Pulaski and Laurel counties are identified.

C. TRAFFIC AND OPERATIONAL CONDITIONS

The study area's traffic and operational conditions were identified with respect to general traffic conditions, levels of service, accident analysis, and access needs. It is important to note that the following analyses include committed improvement projects, but do not take the potential I-66 corridor into consideration.

1. Existing Traffic Conditions

The annual average daily traffic (AADT) is the average number of vehicles that travel a roadway each day. AADT is typically adjusted to account for seasonal, monthly and daily traffic variations throughout the year. The KYTC Highway Information System (HIS) database was used to provide the existing traffic volumes (Year 1998) for segments of the major study area routes. The existing traffic volumes, shown in **Table 2.7**, range from 1,000 vehicles per day (vpd) along KY 192 near the Pulaski and Laurel County Line to just over 42,000 vpd along US 27 near KY 80. Existing truck percentages are also shown in the table, ranging from 2.3% along KY 229 in Laurel County to 29.0% along I-75 in Laurel County.

² Statewide Transportation Plan (FY 1999-2018), Kentucky Transportation Cabinet, December 1999.

³ Approved 2000-2002 Biennial Highway Construction Program and Identified Preconstruction Program Plan for FY 2003-FY 2006, Kentucky Transportation Cabinet, June 2000.

Table 2.7 Traffic Characteristics

Highway	County	Description	% Trucks ¹	1998 AADT ¹	2010 AADT ²	2030 AADT ²	1998 LOS	2010 LOS	2030 LOS
KY 80	Pulaski	Sardis to KY 1248	3.9	6,100	7,200	9,700	D	D	E
		KY 1248 to US 27	-	10,400	12,300	16,500	E	E	F
		US 27 to KY 192	3.5	9,600	11,300	15,200	C	D	D
		KY 192 to KY 1317	-	13,800	18,100	28,600	B	B	D
	Laurel	KY 1317 to Laurel Co.	16.0	6,400	8,700	14,200	B	B	D
		Pulaski Co. to KY 1535	27.7	6,600	9,000	14,700	B	B	D
		KY 1535 to I-75	11.8	15,400	21,600	37,300	B	C	F
		I-75 to US 25	9.4	22,000	30,900	53,400	B	C	F
	Laurel	US 25 to KY 192	3.6	5,100	7,100	12,400	B	B	D
		KY 192 to KY 830	-	3,600	5,000	8,700	C	C	E
Louie B. Nunn (Cumberland) Pkwy.	Pulaski	Exit 78 to US 27	10.7	10,200	13,500	21,500	A	A	B
US 27	Pulaski	Sloans Valley to KY 90	4.1	11,200	14,600	22,700	C	E	F
		KY 90 to KY 2299 (2-lane)	5.0	30,600	40,000	62,300	F	F	F
		KY 90 to KY 2299 (4-lane)	5.0	30,600	40,000	62,300	C	E	F
		KY 90 to KY 2299 (6-lane)	5.0	30,600	40,000	62,300	B	C	E
		KY 2299 to KY 80	5.0	42,200	55,200	86,000	C	D	F
		KY 80 to KY 1247 (6-lane)	6.6	17,500	22,700	34,700	A	B	B
		KY 80 to KY 1247 (2-lane)	6.6	17,500	22,700	34,700	D	E	F
		KY 1247 to KY 70	8.8	8,400	10,800	16,600	E	E	F
KY 192	Pulaski	KY 80 to Blaze Valley Rd.	-	4,300	5,700	9,200	D	D	E
		Blaze Valley Rd. to Laurel Co.	-	1,000	1,400	2,200	B	B	B
	Laurel	Pulaski Co. to Marsh Br. Rd.	-	1,000	1,400	2,500	B	B	B
		Marsh Br. Rd. to KY 552	-	3,300	4,700	8,500	C	C	E
		KY 552 to I-75	3.8	8,900	12,700	22,600	E	E	F
		I-75 to US 25	-	25,500	36,400	65,000	C	F	F
		US 25 to DB Pkwy.	-	16,300	23,300	41,600	B	C	F
Daniel Boone Pkwy.	Laurel	I-75 to KY 354	11.1	12,600	16,700	26,400	C	D	F
		KY 354 to KY 192	12.3	10,800	14,300	22,600	B	C	F
		KY 192 to Clay Co.	-	7,700	10,300	16,900	B	C	E
I-75	Laurel	Exit 29 to KY 192	29.0	35,700	46,900	73,600	C	C	D
		KY 192 to KY 80	29.0	33,700	43,500	66,400	C	B	C
		KY 80 to Exit 48	29.0	30,600	39,900	61,700	B	B	C
US 25	Laurel	US 25E to KY 3431	-	13,000	18,200	31,700	E	F	F
		KY 3431 to KY 1006	-	10,200	15,400	30,100	E	F	F
		KY 1006 to KY 192	-	19,400	29,300	57,300	F	F	F
		KY 192 to KY 80/DB Pkwy.	2.7	15,800	22,700	40,700	D	E	F
		KY 80/DB Pkwy to Pittsburg Overpass	6.3	16,000	22,400	38,600	E	F	F
		Pitts. Overpass to KY 490	-	9,000	13,000	23,900	E	E	F
KY 229	Laurel	KY 490 to Rockcastle Co.	8.0	2,000	2,900	5,000	B	C	D
		KY 1023 to KY1189	2.3	3,100	4,400	8,000	C	C	D
		KY 1189 to KY 1006	2.3	6,600	9,600	17,400	D	E	F
KY 461	Pulaski	KY 1006 to US 25	-	10,200	14,700	26,700	E	F	F
		Sardis to KY 1248	-	5,980	7,814	12,203	D	E	E
		KY 1248 to US 27	-	5,800	7,579	11,836	D	D	E
		US 27 to KY 1317	-	5,380	7,030	10,979	D	D	E

¹ Source: KYTC's Highway Information System Database² Source: Kentucky Statewide Traffic Model projections

2. Future Traffic Conditions

The use of mathematical models capable of simulating existing traffic patterns and estimating future travel demand is an important phase of the transportation planning process. For the I-66 Corridor Planning Study, a set of traffic forecasting models was constructed from the Kentucky Statewide Traffic Model (KYSTM) prepared by Wilbur Smith Associates for the Kentucky Transportation Cabinet and the Kentucky Transportation Center. The development and calibration of the KYSTM has been documented in the *Kentucky Statewide Traffic Model Calibration Report*, dated February 1997.

Using the statewide model, traffic volumes through the Year 2025 can be predicted by applying variables, including projections of future population, employment and traffic growth. The future projections were prepared assuming the completion of existing projects under construction and those projects committed for construction within the Kentucky Transportation Cabinet's *Six-Year Highway Plan*. Highway projects are typically designed to handle estimated traffic volumes for a designated future year, called the "design year." Since the Year 2030 is the design year for this study, the Year 2025 traffic volumes predicted by the KYSTM were factored up to Year 2030 volumes. The Year 2010 and 2030 traffic volumes predicted by the model are shown in Table 2.7, where they can be compared against existing volumes on the highway network within the study area. Future volumes shown in the Table do not include any considerations for the I-66 corridor.

As shown in the table, design year (2030) traffic volumes are estimated to range from 2,200 vpd along KY 192 near the Pulaski/Laurel County line to about 86,000 vpd along the US 27 corridor near KY 80 in Pulaski County. Other high-volume routes in the design year include I-75 near KY 192 (73,600 vpd), US 25 near KY 192 (57,300), KY 80 near I-75 (53,400 vpd), and KY 192 near I-75 (65,000 vpd). The KYSTM was also used to predict Year 2030 traffic volumes for I-66 and the surrounding highway network based on the same variables discussed previously. Different I-66 corridor alternatives were coded into the KYSTM, along with access points to existing roadways. Results of this analysis are discussed in later sections of this report.

3. Level of Service

Level of Service (LOS) is a qualitative measure defined in the Highway Capacity Manual and used to describe traffic conditions. Individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined. They are given letter designations, from A to F, with LOS A representing the best conditions and LOS F representing the worst. A minimum of LOS D is acceptable in urban areas and LOS C in rural areas. Each level of service represents a range of operating conditions and is described in general terms in **Table 2.8**.

Table 2.7 includes the calculated levels of service for existing (1998) and future (2010 and 2030) traffic conditions for routes within the I-66 study area. These figures indicate that the existing traffic congestion is concentrated along a few corridors in the study area. Short sections of KY 80 and KY 192 are currently operating at LOS E near the urban areas of Somerset and London, respectively. Significant portions of the US 25 corridor are currently operating at LOS E and LOS F. It should be noted that such areas of congestion may be reduced with the addition of the I-66 corridor; however, the effects of an additional interstate corridor in this area are not considered for the analysis presented in Table 2.6. Most of the other surrounding routes are within acceptable levels (LOS C or better) for existing traffic volumes; however, some rural spot locations with LOS D occur.

Table 2.8 Level of Service Definitions

Level of Service	Traffic Flow Along Arterial
A	Free flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream.
B	Reasonably unimpeded operations at average travel speeds. The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome.
C	Stable operations causing some tension for motorists. The ability to maneuver and change lanes in midblock locations is restricted along with noticeable queues at intersections.
D	Small increases in flow cause substantial increases in delay and decreases in arterial speed. The ability to maneuver along the arterial is severely restricted.
E	Significant delays and average travel speeds of less than one-third the free-flow speed are experienced along the arterial segment.
F	Intersection congestion, long delays and extensive queuing along the arterial cause for extremely low free-flow speeds and stand-still conditions for motorists.

As indicated in the table, a number of routes in the study area are expected to fall below acceptable LOS levels by the design year of 2030. Even with committed highway improvements, it is expected that major sections of a number of routes will be operating at LOS F, including US 25 and US 27. LOS F conditions are also expected along sections of KY 80, KY 192 and KY 229 near the urban areas of London and Somerset. Traffic volume and LOS data are shown for study area routes for the years 1998, 2010 and 2030 in **Exhibits 2.11, 2.12 and 2.13**, respectively.

4. Accident Analysis

Accident data for selected routes (US 27, US 25, KY 80 and KY 192) in the study area were analyzed for a 36-month period from January 1, 1995 to December 31, 1997. The location of accidents, recorded in the HIS database, with valid milepoint designations are shown by corridor segment in **Appendix C** to aid in the determination of possible high accident locations. A spot or section of roadway is considered to have a high accident rate when the actual annual accident rate (accidents per 100 million vehicle miles) is higher than the critical accident rate. **Table 2.9** includes a listing of accident data for segments of highways within the study area.

The critical accident rate (or number) is the maximum accident rate (or number of accidents) one might expect to occur on a road given the average statewide accident rates, type of roadway, length of section and average annual daily traffic (AADT) volume. The ratio of these two rates (the actual annual accident rate to the critical accident rate) produces a critical rate factor or measure of accident frequency for each segment or spot. Any portion of the corridor with a critical rate factor greater than 1.0 is considered to be a high accident location. This process is based on the methodology described in *Analysis of Traffic Accident Data in Kentucky (1993-1997)*.⁴ The accident location is treated as a spot rather than a section (and the accident rate is expressed in accidents per year) when its length is less than 0.30 miles.

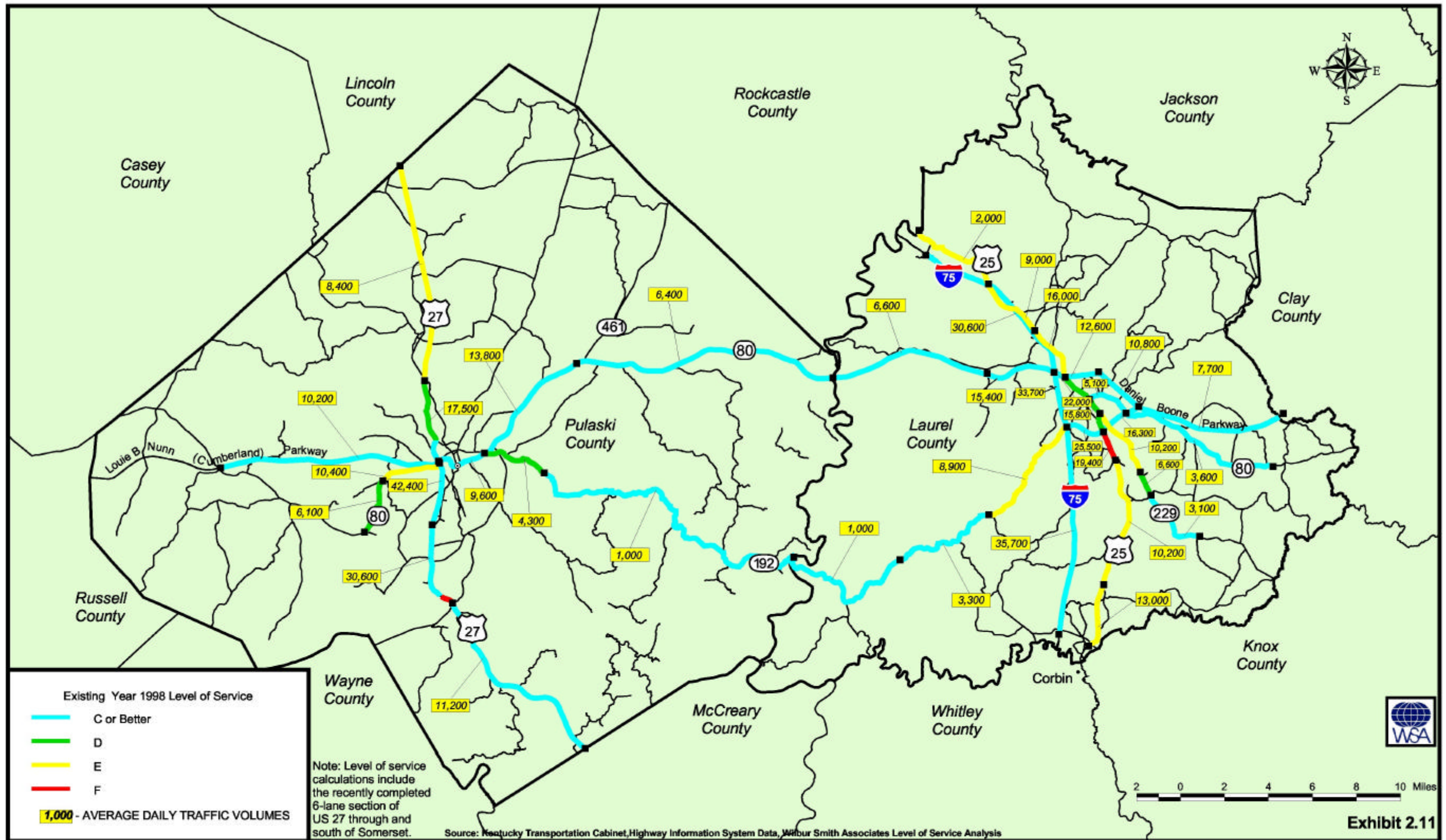
Using the calculated critical accident rates along with the actual annual accident rates for the selected corridors, critical rate factors are determined for spots or segments of each corridor. These factors are presented in the final column of the Appendix C tables and those greater than 1.0 indicate high accident locations. In summation, high-accident locations account for about 37 percent of the total mileage of US 27 in the project area; 28 percent of KY 80; 48 percent of US

25; and 59 percent of KY 192. It is expected that future traffic volume increases on these routes will add more vehicles (and vehicle-miles) and create the potential for additional high-accident locations.

Table 2.9 Critical Accident Rates

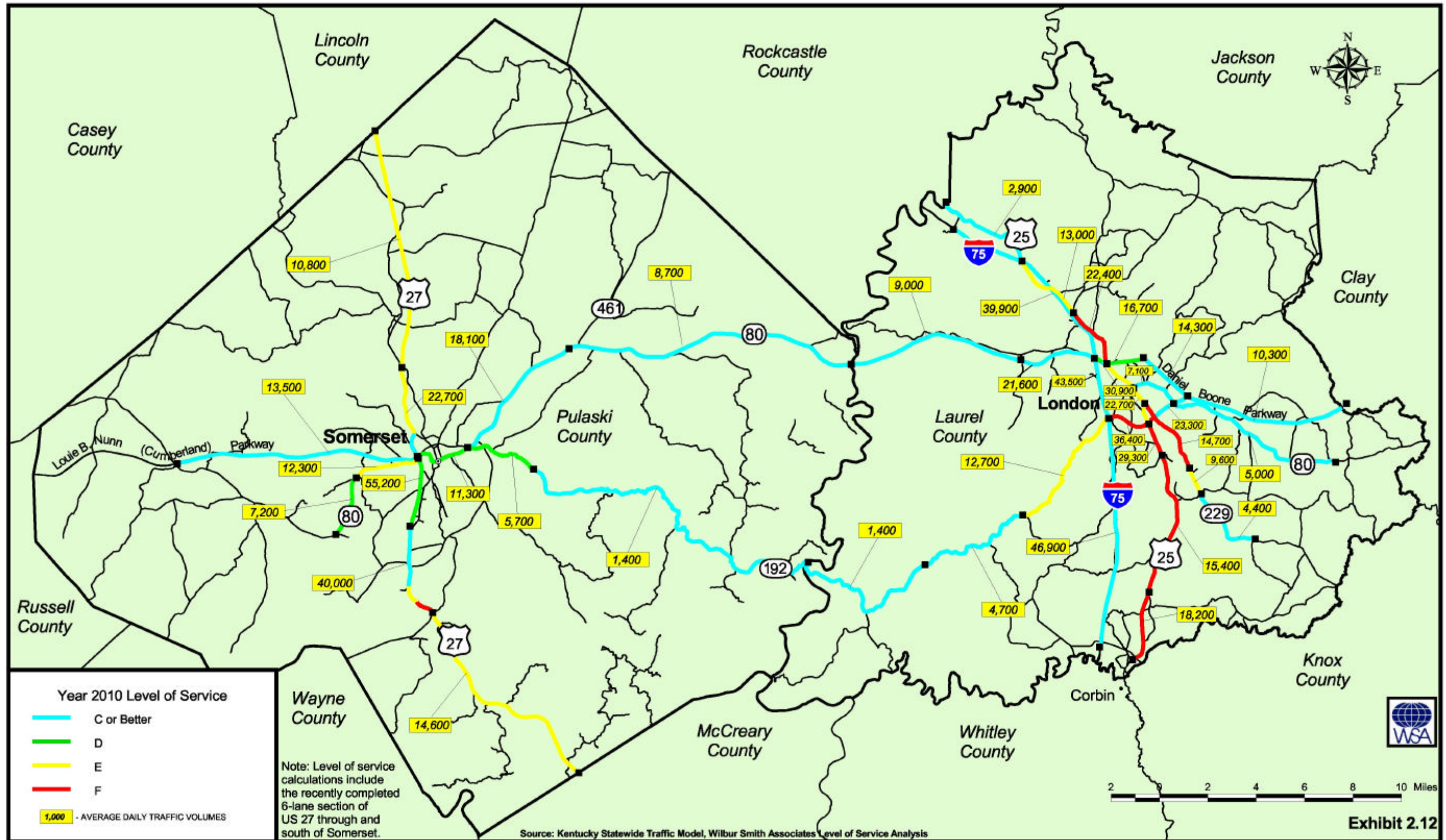
Route	County	Begin MP	End MP	Critical Acc. Rate	Rates per HMVM or MV				Critical Rate Factor
					Fatal	Injury	PDO	Total	
US 27	Pulaski	0.000	5.134	313.00	0.00	146.09	266.39	412.48	1.318
		11.374	12.360	378.50	3.06	119.22	229.26	351.53	0.929
		12.360	13.727	366.10	0.00	90.18	257.66	347.83	0.950
		13.727	14.326	395.70	0.00	97.61	385.80	483.41	1.222
		15.461	15.840	400.00	0.00	135.30	573.41	708.71	1.772
		15.840	16.214	389.00	0.00	143.34	660.37	803.70	2.066
		16.214	16.520	1.30	0.00	0.51	2.63	3.14	2.421
		16.520	16.782	1.23	0.00	0.27	1.32	1.59	1.298
		16.782	16.854	1.40	0.00	0.14	1.70	1.85	1.319
		16.854	17.030	1.44	0.00	0.29	3.03	3.31	2.305
		20.759	22.515	296.80	0.00	89.28	195.31	284.59	0.959
KY 80	Pulaski	0.000	1.796	394.00	0.00	382.73	1804.31	2187.04	5.551
		1.796	2.315	514.00	76.17	228.52	609.39	914.09	1.778
		7.491	9.256	379.00	0.00	160.97	183.97	344.95	0.910
		13.575	16.205	301.00	11.67	140.06	140.06	291.80	0.969
		16.205	17.248	323.00	0.00	105.75	243.22	348.97	1.080
		18.850	19.016	1.94	0.00	0.15	1.98	2.13	1.098
		19.016	19.350	610.00	0.00	128.97	748.05	877.03	1.438
		20.318	20.710	615.00	0.00	168.30	601.06	769.35	1.251
	Laurel	20.710	21.521	619.00	0.00	110.76	461.50	572.26	0.924
		28.177	28.377	1.49	0.00	0.75	0.62	1.37	0.925
		11.380	11.680	2.25	0.00	0.64	1.61	2.25	1.000
		13.150	20.522	282.00	0.00	113.26	159.27	272.54	0.966
		20.522	21.225	453.00	0.00	234.49	468.98	703.46	1.553
US 25	Laurel	0.000	0.170	1.22	0.00	1.30	0.90	2.19	1.798
		0.170	2.080	273.00	7.53	150.59	286.13	444.25	1.627
		2.080	4.069	289.70	0.00	127.00	161.19	288.19	0.995
		8.432	9.041	346.70	0.00	45.26	331.90	377.16	1.088
		9.473	10.350	224.60	0.00	92.89	161.33	254.22	1.132
		10.484	10.940	559.00	0.00	173.21	573.75	746.96	1.336
		11.000	11.382	588.00	0.00	197.73	539.25	736.98	1.253
		11.900	12.141	1.99	0.00	1.57	5.08	6.65	3.341
		16.258	17.346	511.00	0.00	524.61	1049.22	1573.83	3.080
19.350	23.102	455.20	43.86	350.85	570.13	964.83	2.120		
KY 192	Laurel	7.288	12.570	325.00	0.00	78.08	278.87	356.95	1.098
		15.300	16.372	407.00	0.00	280.85	187.23	468.08	1.150
		16.372	18.190	295.00	5.74	91.86	177.97	275.57	0.934
		18.657	19.320	403.00	0.00	237.87	492.34	730.21	1.812
		19.320	20.411	400.00	0.00	112.98	287.58	400.56	1.001
		0.320	1.006	374.00	0.00	89.35	268.04	357.38	0.956
		3.091	7.178	348.00	0.00	211.91	259.00	470.92	1.353
		7.178	14.407	289.00	0.00	128.78	218.92	347.70	1.203

⁴ Kentucky Transportation Center Research Report KTC-98-16



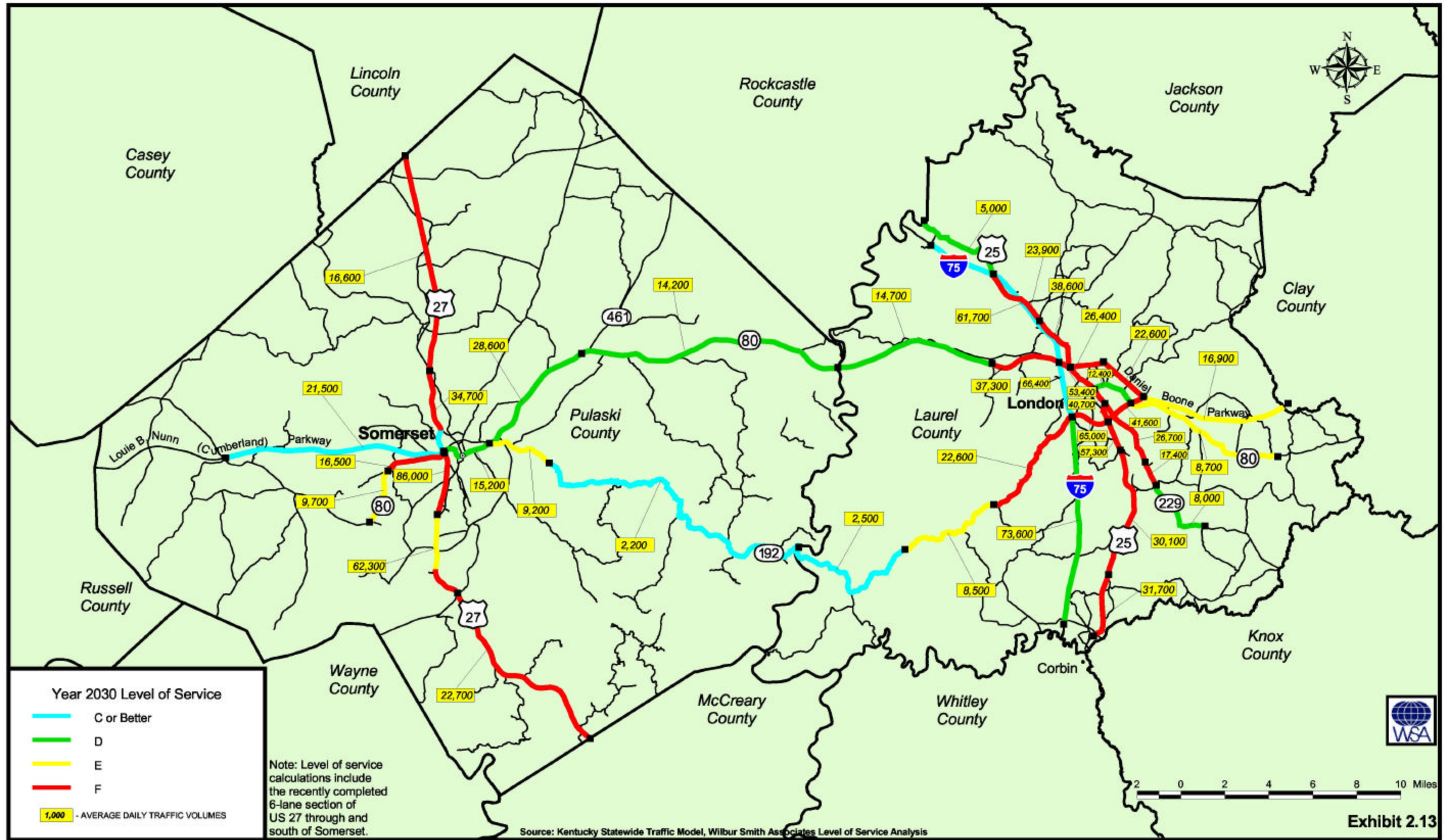
Year 1998 Level of Service and Average Daily Traffic Volumes

CHAPTER 2 – STUDY AREA CONDITIONS



Year 2010 Level of Service and Average Daily Traffic Volumes

CHAPTER 2 – STUDY AREA CONDITIONS



Year 2030 Level of Service and Average Daily Traffic Volumes

CHAPTER 2 – STUDY AREA CONDITIONS

D. PLANNING LEVEL ENVIRONMENTAL CONSIDERATIONS

The consideration of environmental factors along the proposed I-66 corridor is of primary importance. In order for the decision-making process to best reflect the overall public interest, a balance must be achieved between transportation and economic needs and environmental responsibilities. To accomplish this in the planning phase of project development, this study has undertaken a process to integrate a comprehensive set of available environmental information, along with early agency coordination and public involvement.

1. Environmental Process

The scope of environmental efforts undertaken as part of this study for I-66 serves to fine-tune the interest and focus of the project prior to fully engaging in the forthcoming NEPA process. Recognizing the corridor-level basis for this study, the current environmental efforts are intended to identify known or potential environmental effects and values in adequate detail to allow for a corridor evaluation process that will best minimize environmental consequences while also achieving the project goals. Further discussion of environmental issues is presented in Chapter 4 of this report.

It should be recognized that a recommended corridor does not represent a specific alternative, but instead defines an area within which design alternatives will be developed. Subsequent project activities will involve a formal analysis within the recommended corridor that will consider specific alignment options and other appropriate alternatives. During the NEPA process, environmental base studies will be performed along with the preparation of appropriate environmental document(s).

2. Primary Issues

Through the pre-NEPA planning process, a number of primary environmental issues have been identified. These include natural areas, sensitive plant and animal species, karst geology, historic sites, archaeological sites and other important areas. Vital to the determination of these issues was the consideration of input from a variety of environmental resource agencies, key stakeholder groups and the general public. These groups provided input to the determination of an “environmental footprint” for the project area, resulting in a better understanding of potential environmental consequences. Subsequent sections of this report will detail the activities involved with agency coordination and public involvement.

The study counties are home to many natural, scenic and sensitive areas, such as the Daniel Boone National Forest, the Wild River portion of the Rockcastle River, Cane Creek Wildlife Management Area, Levi Jackson Wilderness Road State Park, and the Shelton Trace National Recreation Trail. These areas are not only known for their scenic beauty, but also for the diversity of species they harbor. Threatened and endangered species in the study area include the Red Cockaded Woodpecker, Indiana Bat, Pearly Mussel, Cumberland Bean, Ashy Darter, Oyster Mussel, White Snakeroot and Wood Lily, among others. A full listing of these species is included in **Appendix D**. Natural wetland areas and blue-line streams are found throughout the study area, with particular concentrations near Wood Creek Lake, Laurel River Lake and Lake Cumberland.

The study area is also known for its unique geologic structure, including an extensive cave system throughout the western portion of the study area. Scenic cascades and cliff lines are present in the central and eastern portions of the study area. Many prehistoric archaeological

sites have been identified in the study counties, and it is likely that some occur within the project corridor, particularly in areas where sandstone escarpments are exposed.

A diversity of social and economic considerations is present within the study area that reflects areas of potential impact on individuals, population groups, businesses and communities. Developed corridors in the area have concentrations of homes, businesses, schools, churches and other features which highway construction would have difficulty avoiding. Undeveloped corridors are home to isolated communities with unique cultures and social characteristics that could be impacted by the development of a major highway corridor in close proximity to their location.

3. Data Sources

A spatial analysis of environmental data has been completed for the study area. Using information from state, federal and private resources along with Geographic Information System (GIS) technology, environmental issues have been identified within Pulaski and Laurel counties and the surrounding region. More specifically, any environmental concerns falling within 2000 feet (500-foot zones were used for some evaluation elements) of the identified study corridors have been documented and used in comparing the potential environmental consequences associated with each corridor. Results of this environmental analysis are presented in Chapter 4 of this report. Data categories considered for this analysis include:

- Archaeology Sites
- Churches, Cemeteries and Schools
- Historic Structures
- Daniel Boone National Forest Property
- Threatened and Endangered Species
- Potential Threatened and Endangered Species
- Cave Routes and Cliff Lines
- Stream Crossings
- Wetland Sites
- Wild River Areas
- Oil and Gas Wells
- Hazardous Sites

The environmental data used in this analysis were collected from a wide range of sources. Participating agencies and groups and their respective contributions include:

- Kentucky Heritage Council: historic and archaeological sites
- United States Geological Survey: cemeteries, churches and schools
- Kentucky Natural Resources and Environmental Protection Cabinet: wildlife management areas and Wild River boundaries
- Daniel Boone National Forest: National Forest boundaries and property, threatened and endangered species, potential threatened and endangered species, cave routes and cliff lines
- Kentucky State Nature Preserves Commission: threatened and endangered species, and potential threatened and endangered species
- Department of Natural Resources: blue-line stream crossings
- Kentucky Department of Fish and Wildlife: wetland locations
- Kentucky Geological Survey: wells and underground storage tanks, geologic features
- U.S. Environmental Protection Agency: hazardous waste data, toxics release inventory, water discharge permits, and superfund sites
- Local Cave Society: cave routes and cliff lines
- National Speleological Society: karst and cave data