



Comprehensive Economic Development Strategy

SEPTEMBER 2012

Doe Mountain Recreation Area



Courtesy of the Mountain City Tomahawk

3211 N. Roan St.
Johnson City TN 37601

Phone: 423/928-0224
Website: www.ftdd.org

**FIRST TENNESSEE DEVELOPMENT DISTRICT
 COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY (CEDs)
 TABLE OF CONTENTS**

CHAPTER	TITLE	PAGE
1	INTRODUCTION	
	CEDs Introduction	1
	CEDs Committee	1
	CEDs Objective	2
	FTDD Map	3
2	POPULATION DEMOGRAPHICS	
	Population	4
	Age Distribution	4
	Education Level	4
	Per Capita Income	5
	Poverty Level	6
	Employment	6
	Retail Sales	7
	Health Outcomes	7
	Strategic Findings 1-3	8
	Table Two A Population Growth (2000-2011)	11
	Table Two B Population by Race (2011)	12
	Table Two C Age Distribution (2011)	13
	Table Two D Education Attainment (2006-2010)	14
	Table Two E Per Capita Income (2005-2010)	15
	Table Two F Median Household Income (2005-2010)	16
	Table Two G Poverty Data (2005-2010)	17
	Table Two H Employment Growth (2007-2011)	18
	Table Two I Employment by Industry (2009)	19
	Table Two J County Employment by Industry (2009)	20
	Table Two K Unemployment Rates (2007-2011)	21
	Table Two L Retail Sales (2010-2011)	22
	Table Two M Health Outcomes (2012)	23
	Table Two N Health Factors (2012)	24
3	CLUSTERS	
	Definition of Cluster	26
	Product Development	26
	Recommended Target Clusters	27
	Potential Target Activities	28
	Other Potential Target Activities	29
	Strategic Findings 4	29
	Table Three A Value Chain Cluster Screening Matrix	31

4	INFRASTRUCTURE	
	Water Resources	35
	Wastewater Resources	41
	Airports	45
	Industrial Parks	45
	Roads	46
	Planning	47
	Broadband	48
	GIS	48
	Electricity	49
	Natural Gas	49
	Natural Disasters	49
	Public Recreation Lands	50
	Strategic Findings 5-11	50
	Table Four A Water System Information	56
	Table Four B Sewer System Information	60
	Table Four C Industrial Sites	62
	Table Four D Electric Utility Data	64
5	FINANCIAL RESOURCES	
	Strategic Findings 12	65
	Table Five A Tax Financed Indices	67
6	EXTERNAL FORCES	
	Economic Environment	68
	Natural Environment	70
	Social and Political Environment	71
7	STRATEGIC PROJECTS, PROGRAM, AND ACTIVITIES	
	Tennessee Strategies	73
	Northeast Tennessee Regional Strategic Plan	75
	Northeast Tennessee Industrial Development Association	75
	Appalachian Regional Commission Strategies	76
	Regional CEDS Strategic Findings	76
	Regional Solutions	78
	Suggested Projects Listing	78
	Goals/Vital Projects List	80
8	GOALS, OBJECTIVES, ACTION PLAN, PERFORMANCE MEASURES AND REPORTING	
	Narrative	82

CHAPTER ONE INTRODUCTION

CEDS INTRODUCTION

The First Tennessee Development District (FTDD), in cooperation with the Comprehensive Economic Development Strategy (CEDs) Committee, has developed this document to serve as both a planning document and a benchmarking tool. The CEDs is designed to address economic development in the First Tennessee Development District's eight-county region which includes: Carter, Greene, Hancock, Hawkins, Johnson, Sullivan, Unicoi and Washington counties. These eight counties are comprised of 2,896 square miles. A map of the FTDD region can be found as Table One-A.

FTDD is a regional organization established to assist its member governments with strategic planning for their community and economic development needs. From 1986 to 2011, the First Tennessee Development District has assisted communities with 515 grant and loan projects totaling \$158.6 million. These projects have resulted in the creation of 18,000+ jobs and private sector investment of \$2.6 billion. In addition, these projects have provided public water and sewer service to 2,900 homes.

CEDS COMMITTEE

The Northeast Tennessee Workforce Investment Board (WIB) serves as the CEDs committee for the First Tennessee Development District. The WIB serves as a catalyst in bringing together major workforce development stakeholders and provides strategic planning and oversight of the local service delivery system.

The Northeast Tennessee Workforce Investment Board (WIB) is composed of community and business leaders throughout the FTDD.

Susan Arwood	Private
Dean Blevins	Public
Christy Brady	Private
Teresa Broome	Public
Dawn Clark	Private
Mike Cummings	Private
Carolyn Ferrell	Private
Mike Freeman	Private
Dr. Janice Gilliam	Public
Jack Greene	Public
Mary Jane Greene	Private
Wallace Grills	Private
Jewell Hamm	Public
Larry Hatfield	Private
Nancy Kenner	Private
Jack Lawson	Public
Linda Lewis	Private

Gary Mabry	Public
Iliff McMahan	Public
Paul Montgomery	Private
Kathy Pierce	Public
Leslie Pope	Private
David Quick	Private
Susan Reid	Public
Lottie Ryans	Private
Jacqueline Sensabaugh	Public
Melanie Shepherd	Public
Lee Shillito	Private
Kenny Smith	Private
Lois Smith	Public
Melanie Stegall Stanton	Private
David Stout	Private
Duncan Street	Private
Donna Tate	Private
Carol Trahan	Private
Kenneth Treadway	Private
Billy Wells	Private
Walter West	Public
Koren Winters	Private
Morris Woodring	Public

Of the thirty-six members, twenty-one (58%) are from the private sector and fifteen are from the public sector.

Numerous facets of economic development are addressed, including employment, diversification and quality of life.

CEDS OBJECTIVE

First Tennessee Development District is one of the nation's 380 Economic Development Districts (EDDs) designated by the U.S. Department of Commerce, Economic Development Administration (EDA).

FTDD is committed to pursuing excellence in regional economic development and organizational performance. This includes fostering a regional strategic planning and implementation framework that is results oriented, focused on aligning and leveraging resources, inclusive of public, private and nonprofit sector leaders, and emphasizes the importance of asset-based regional economic development.

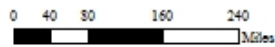
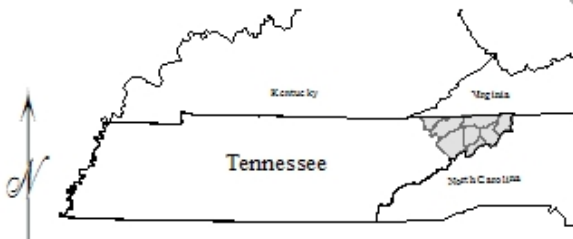
Under federal law, one of the primary functions of EDA-designated Economic Development Districts (EDDs) is to coordinate a regional economic development strategy and implementation process known as the Comprehensive Economic Development Strategy (CEDS) process.

TABLE ONE-A

FIRST TENNESSEE DEVELOPMENT DISTRICT



LOCATION MAP



CHAPTER TWO POPULATION DEMOGRAPHICS

Economic trends within the eight counties of the FTDD were mixed during recent years. The population of the FTDD has grown steadily from 2000 to 2011, posting a 6.9 percent increase, while the number of employed has decreased by 1.1 percent from 2007 to 2011. Per capita income at the District level has increased by 13.8 percent from 2005 to 2010. Counties within the FTDD did not gain equally as urban counties fared better than rural counties.

POPULATION

The U.S. Census Bureau estimates the FTDD had a population of 508,215 in 2011, an increase of 32,803 people, or 6.9 percent, between 2000 and 2011. While the FTDD experienced solid population growth from 2000 to 2011, the state and the national population experienced even greater increases of 12.6 percent and 10.7 percent respectively (Table Two A).

The racial composition of the region remains primarily white, 95.3% in 2011, but has become more diversified in the past eleven years. Minority populations increased from 3.8 percent in 2000 to 4.7 percent in 2010. The Hispanic ethnic group also increased from 0.9 percent in 2000 to 2.1 percent in 2011 (Table Two B).

AGE DISTRIBUTION

The First Tennessee Development District had a median age of 42.5 years in 2011 compared to 38.0 years for the State of Tennessee and 37.3 years for the U.S. Unicoi County in the region had the highest median age in the region, 45.0 years, and Washington County had the lowest, 39.8 years (Table Two C).

The higher median age of the region is reflective of several trends. Traditionally, the region's population has been older than the State and U.S. as people tend to stay in the region, even with major lifestyle changes. People are living longer, the baby boom generation is reaching retirement age, and retirees are moving to the area. Many of the retirees are people who grew up in the region, worked elsewhere and raised a family, and returned to the area after retirement. Another trend is retirees being attracted to the area because of the natural beauty, four seasons, and affordable cost of living. The region has 17.7 percent of its population 65 years of age or older in 2011 compared to 13.7 percent in Tennessee and 13.3 percent in the U. S.

EDUCATION LEVEL

The education attainment level of the region's population over 25 years of age improved from 2000 to 2006-10 (Note that the U.S. Census estimates over a 5 year period to

improve the accuracy of its measurements). The percentage of the population that was a high school graduate or higher increased from 72.6% in 2000 to 79.8% from 2006-2010. The region's percentage (79.8%) was below the state (82.5%) and above the nation (71.0%) (Table Two D).

The region's percentage of population 25 years or older with a bachelor's degree or higher increased from 16.1% in 2000 to 18.7% in 2010. Tennessee had 22.7% of its population with a bachelor's degree or higher compared to 27.9% in the U.S.

The correlation between per capita income and education was strong in the region. Sullivan and Washington counties had the highest per capita income and the highest percentage of its population that were high school graduates or higher. Hancock and Johnson counties had the lowest per capita income and lowest education attainment percentages. However, Hancock and Johnson counties are improving, especially in the percent of high school graduates in the 25-34 and 35-44 year age groups when compared to the previous decade.

PER CAPITA INCOME

From 2005 to 2010, per capita income grew 13.8% within the FTDD, greater than the state growth rate, 11.6%, and greater than the U.S. 12.8% (Table Two E).

The 2010 per capita income of \$30,802 for the FTDD was 77.1% of the U.S. level and 88.2% of the state level.

Sullivan County's per capita income of \$33,846 was the highest within the FTDD in 2010, and it was 84.7% of the U.S. level and 96.9% of the state level. Hancock County had a per capita income of \$19,465 and was 55.7% of the state and 48.7% of the U.S. Johnson County had a per capita income of \$23,435, which was 67.1% of the state and 58.7% of the U.S.

Median household income was \$36,348 in 2010 for the District compared to \$41,461 for Tennessee and \$50,046 for the U.S. The rate of growth in median household income was 5.4% for FTDD from 2005 to 2010 compared to 7.1% in Tennessee and 8.2% in the U.S. Median household income was highest in Washington County, which exceeding the State average (Table Two F).

Some of the difference between income levels compared to the nation can be explained by the region's lower cost of living. Different sources have communities in the region with a cost of living 85-94% of the national average.

POVERTY LEVEL

The region's percent of persons in poverty increased from 17.5% of persons in 2005 to 20.0% in 2010. (Table Two G) The poverty rate of the region was above the state, 17.8% and the nation, 15.3%.

Hancock County had the highest percentage of persons in poverty in the region in 2010 with 30.9%. Johnson County had the second highest percentage of its persons in poverty in the region in 2010 at 26.4%. Unicoi County had the lowest percent of its population below poverty, 17.3%.

EMPLOYMENT

EMPLOYMENT TRENDS

There were 2,570, or -1.1%, fewer people employed within the FTDD in 2011 than in 2007 (Table Two H). FTDD employment loss (-1.1%) was near the state (-1.0%) and less than the national rate (-4.2%). The region is on pace to have employment levels increase above the 2007 pre-recession level if 2012 employment growth continues.

Employment growth varied widely in the region with Washington County adding 1,730 jobs and Greene County losing 2,180 jobs from 2007 to 2011.

Employment data is compiled in two ways. For example, employment growth (Table Two H) is by place of residence and does not factor commuting patterns within counties of the region. Employment by place of work, which reflects commuting patterns, is non-agricultural employment data (Table Two I).

The Tri-Cities are employment centers that draw from a multi-county area in Northeast Tennessee and Southwest Virginia. Sullivan and Washington counties make up 55.3% of the region's 2010 population and 70.2% of employment by place of work. Carter, Hawkins and Unicoi counties have significant portions of its population that work outside their home county.

The region's employment mix in 2009 is 61.7% from service-producing sectors, 22.0% from goods-producing sectors, and 16.5% from government (Table Two I). The employment mix for the region is less service-sector oriented compared to the State and U.S., but a higher percentage of employment is based in service-producing sectors in 2009, 61.7% than in 2003, 58.1%.

The region's percentage of employment in manufacturing of 16.8% was above Tennessee, 12.1% and the U.S., 9.1%. Hawkins County had the highest percentage of its employment based in manufacturing, 33.0% (Table Two J). Manufacturing output continues to increase, but companies are making products with fewer employees.

UNEMPLOYMENT RATE

The unemployment rate within the FTDD was 8.8% in 2011 compared to 9.2% in the state and 8.9% in the U.S. (Table Two K).

Some counties within the FTDD are doing better than others with regard to their unemployment rate. While Sullivan County (7.7%) and Washington County (7.8%) have lower unemployment rates for 2011, Greene County (11.8%), Hancock County (14.1%), and Johnson County (12.0%) have significantly higher unemployment rates for the year. Greene County tends to have an unemployment rate higher than surrounding counties due to the seasonal work patterns of some of its manufacturers and agricultural businesses.

The unemployment rate for the region increased from 4.9% in 2007 to 8.8% in 2011 as the region's economy continues to recover from the recession. While the unemployment rate increased significantly, the region weathered the recession better than the state and nation.

RETAIL SALES

Retail sales within FTDD increased 4.9% from 2010 to 2011 compared to 6.0% for Tennessee and 7.9% for the U.S. (Table Two L). The region's retail sales were concentrated in the retail centers of Bristol, Kingsport and Johnson City. Washington and Sullivan counties accounted for 71.2% of the regional retail sales while being 55.4% of the population.

HEALTH OUTCOMES/HEALTH FACTORS

The University of Wisconsin Population Health Institute put together data on the health outcomes of Tennessee counties. The data gauges counties' health outcomes and health factors ranked against the 95 counties in Tennessee. While the data is an estimate and variance can often be explained by factors other than health, it does give a relative measure.

Health outcome was measured by equally weighing of mortality data (percentage premature death) and morbidity data (percentage poor or fair health days, poor physical health days, poor mental health days, low birthrate). The region had wide variance in Health Outcomes. Washington County ranked 31st in the State and Carter County ranked 78 (Table Two M). Washington County had premature death rates slightly below the state average, but above the national average. Morbidity factors for percentage of poor or fair health, poor physical health days, and poor mental health days ranked above the state and nation. Low birthdate percentages were below the state, but above the nation.

Health factors are based on weighted scores for health behaviors (30%), clinical care (20%), social and economic factors (40%), and physical environment (10%). Again the region had wide variance with Washington County ranked 4th in the State and Hancock County ranked 91st.

STRATEGIC FINDINGS

Strategic Finding 1. Matching Labor Force Skills. A major opportunity for the region is matching the labor force skills with new job opportunities. Talented young people will leave the area if opportunities are not available. Opportunities exist for the region to in-fill jobs available with many of its employers if the depth of the region's workforce skills were upgraded through education and training. Excellent opportunities exist in science, technology, engineering and mathematics (STEM) as well as health care, teaching and welding.

The labor force is a strength of the region and generally compares favorably with companies having multiple facilities in the U.S. and abroad. A major problem in the region is that many companies, even in slow economic times, would have higher levels of employment in the region if they could find qualified employees in certain highly skilled fields. Sectors with major issues in this area include medical, engineering, fields requiring math and science backgrounds, management and certain technical areas. Thus, there is an opportunity to improve employment through expansion of existing companies. Companies making an expansion or location decision are not only looking for an available workforce, but an educated workforce.

Concerns have been expressed by several businesses regarding the academic preparedness, preparedness and soft skills of some high school graduates entering the labor force. Also, failure of drug screens is a major detriment to greater employment in some fields.

Several **regional initiatives** are occurring to provide **better education** and **workforce training** opportunities. A long-term threat to the region identified by Education 2010 is that many K-12 school systems have a large percentage of teachers and administrators who will reach retirement age in the next ten years. This threat is complicated by a shortage of college students choosing to become teachers.

The Tennessee Department of Labor and Workforce Development works to educate and train individuals with the skills needed to enter the workforce. Locally, these services are coordinated through the Workforce Investment Board. Youth empowerment programs at the high school level help blend education with economic and community development.

In addition, the region has an effective State university (East Tennessee State University), community colleges (Northeast State Community College and Walters State Community College), the Tennessee Technology Center in Elizabethton and private colleges (King College, Milligan College, Tusculum College and Virginia Intermont) that

are continually developing and refining education programs to meet the needs of the labor force. Many higher education institutions are at record levels as laid off employees are retraining for a new vocation. The average age of students has increased in the last ten years due in part to this trend. Traditional classes supplemented by online classes are making it feasible for non-traditional students with a busy lifestyle to obtain a degree.

The City of Kingsport has completed some innovative and award winning projects to address the education and training needs of its employers. The Kingsport Academic Village is a center for higher education and workforce development in Downtown Kingsport. The Village consists of the Regional Center for Health Professions, the Regional Center for Advanced Manufacturing, the Kingsport Center for Higher Education, Regional Center for Applied Technology and the School of Automotive Technology.

The Kingsport Center for Higher Education is a \$12 million, 54,000-square-foot facility. The facility, which opened in fall 2009, is administered by Northeast State and combines the resources of Carson-Newman College, King College, Lincoln Memorial University, and the University of Tennessee under one roof. Students will be able to earn selected baccalaureate and graduate degrees from participating colleges and universities as well as associate degrees from Northeast State. The City of Kingsport is also offering a kindergarten through 14 education system.

Northeast State Community College is offering distance learning through sites in Elizabethton, Gray, Kingsport, and Mountain City. The opportunity exists to obtain an education with less travel demands. Northeast State is in the process of completing a facility to offer curriculum in Johnson City.

Strategic Finding 2. Entrepreneurial Development. The region is developing business infrastructure that encourages entrepreneurs and needs to continue supporting this effort.

A threat to the region's economy is that the **entrepreneurial environment** as measured by new businesses per capita is low compared to other areas. Since many jobs in the U.S. are being created by small, innovative businesses, this trend is a concern for the region. A factor affecting entrepreneurial development is the limited availability of capital for potential businesses in fast growing industries, especially in the seed and venture capital areas. Entrepreneurs tend to have smaller swings in employment and are not as likely to locate to another area. This is important as the region has many branch plants and facilities that can experience major increases and declines.

ETSU and the Holston Business Group have been operating business incubators for several years. Both facilities have a good mix of businesses in developing sectors. ETSU uses the business incubator to place research in the private sector and as an opportunity for students to interact with entrepreneurs. This is one of several examples

of the ETSU College of Business emphasizing entrepreneurial opportunities to its students. ETSU also partners with the Holston Business Development Center for management of the facility.

East Tennessee State University has created a Regional Entrepreneurial Accelerator in 2012. The accelerator will assist entrepreneurs as they establish new businesses and add jobs to the local economy. ETSU will use funds to provide mentoring, education and training; strategic and technical support; and assistance identifying sources of capital. The accelerator represents a new approach to building our region's economic base.

Strategic Finding 3. Higher Paying Jobs to Address Per Capita Income Gap. The region's affordable cost of living addresses some of the income gap, but issues remain, including pay levels and education attainment, which are below the state and nation.

A weakness of the region is that **per capita income** levels were below state and national levels. The percentage of families living in poverty for the region was higher than the state and nation.

Raising per capita income includes addressing several issues including targeting higher paying industries, K-12, secondary and post secondary education, matching skills with available fields, coordinating with state and regional economic development initiatives, and providing and developing the necessary support services to industries in higher paying job sectors. A more detailed analysis of this issue is in Chapter 3, Cluster Analysis.

The changing demographics of the region will present several unique opportunities and threats in future years. Northeast Tennessee already has a population that has a **higher median age** than the state and nation. Business service opportunities will be prevalent to meet the needs of the elderly. Finding health insurance and long-term care solutions for an aging population will be difficult. The First Tennessee Area Agency on Aging and Disability works diligently with the public and private sector to address these needs.

Table Two A

POPULATION GROWTH

AREA	2000	2010	2011	2000-2011	
				NUMBER CHANGE	PERCENT CHANGE
Carter County	56,742	57,424	57,185	443	0.8
Greene County	62,909	68,831	69,339	6,430	10.2
Hancock County	6,786	6,819	6,737	-49	-0.7
Hawkins County	53,563	56,833	56,671	3,108	5.8
Johnson County	17,499	18,244	18,231	732	4.2
Sullivan County	153,048	156,823	157,419	4,371	2.9
Unicoi County	17,667	18,313	18,280	613	3.5
Washington County	107,198	122,979	124,353	17,155	16.0
FTDD	475,412	506,266	508,215	32,803	6.9
TN	5,689,262	6,346,105	6,406,353	717,091	12.6
US	281,421,906	308,745,538	311,591,917	30,170,011	10.7

Source: U.S. Census Bureau 2000 & 2010 Census, 2011 Estimates

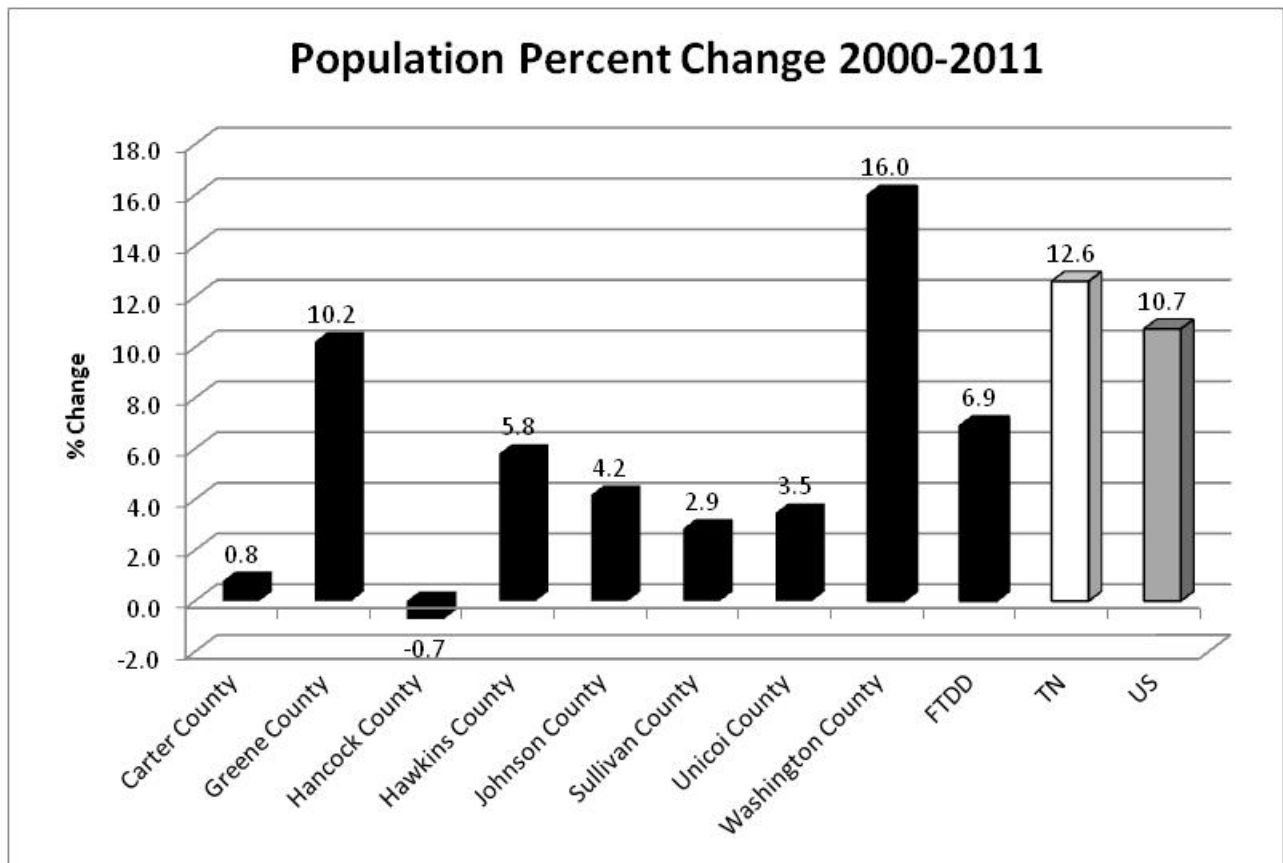


Table Two B

PERCENT POPULATION BY RACE, 2011

AREA	White	Black	2 or More Races	Other	Hispanic *
Carter County	96.7	1.6	1.2	0.5	1.6
Greene County	96.0	2.2	1.0	0.8	2.6
Hancock County	98.0	0.4	1.2	0.4	0.3
Hawkins County	96.6	1.6	1.0	0.8	1.3
Johnson County	96.4	2.2	0.9	0.4	1.6
Sullivan County	95.4	2.4	1.2	0.9	1.6
Unicoi County	98.1	0.4	1.0	0.6	4.1
Washington County	92.6	4.2	1.5	1.7	3.0
FTDD	95.3	2.5	1.2	1.0	2.1
TN	79.5	16.9	1.6	2.0	4.7
US	78.1	13.1	2.3	6.4	16.7

* Hispanic is an ethnic group and not a race.
 Source: U.S. Census Bureau Estimates

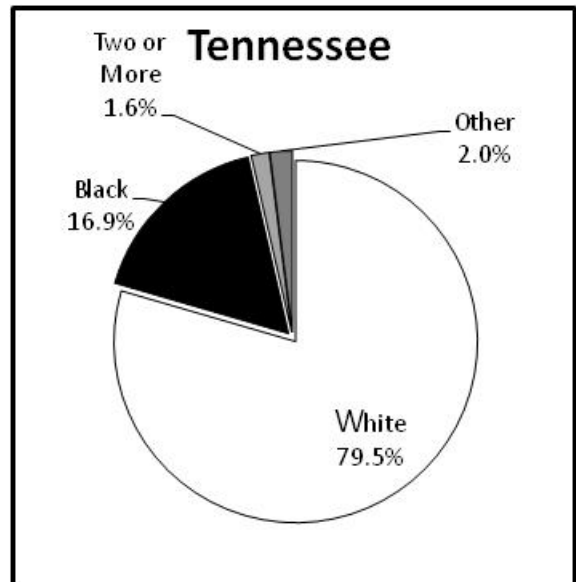
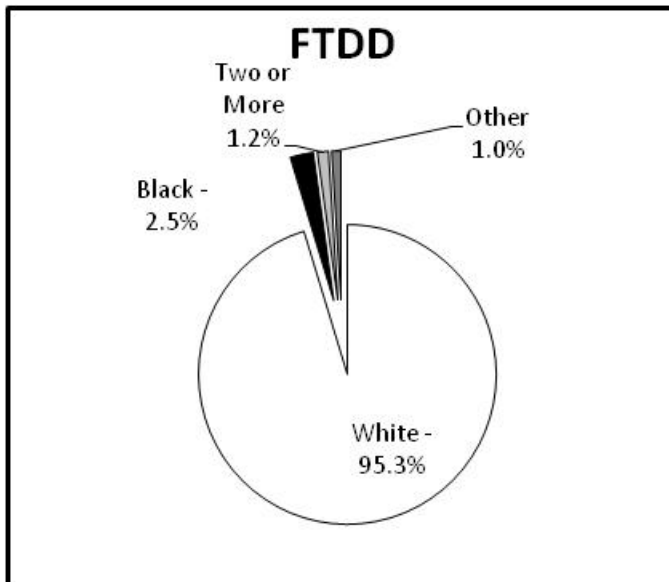


Table Two C

AGE DISTRIBUTION - PERCENTAGE - 2011

AREA	Under 5	5-13	14-24	25-44	45-64	65 & Up	Median Age
Carter County	5.2	10.1	13.9	24.1	29.3	17.4	42.5
Greene County	5.3	10.6	13.5	23.4	29.3	18.0	42.9
Hancock County	5.7	10.5	12.6	23.4	30.2	17.6	43.3
Hawkins County	5.3	11.4	12.2	24.3	29.6	17.1	42.8
Johnson County	4.7	9.1	12.0	26.1	29.6	18.6	43.6
Sullivan County	5.1	10.3	12.6	23.4	29.6	19.0	44.0
Unicoi County	4.8	10.7	11.3	23.1	30.1	19.9	45.0
Washington County	5.4	10.1	15.8	25.7	27.4	15.7	39.8
FTDD	5.2	10.3	13.5	24.2	29.0	17.7	42.5
TN	6.3	11.7	14.9	26.2	27.1	13.7	38.0
US	6.5	11.8	15.4	26.5	26.6	13.3	37.3

Source: U.S. Census Bureau Estimates

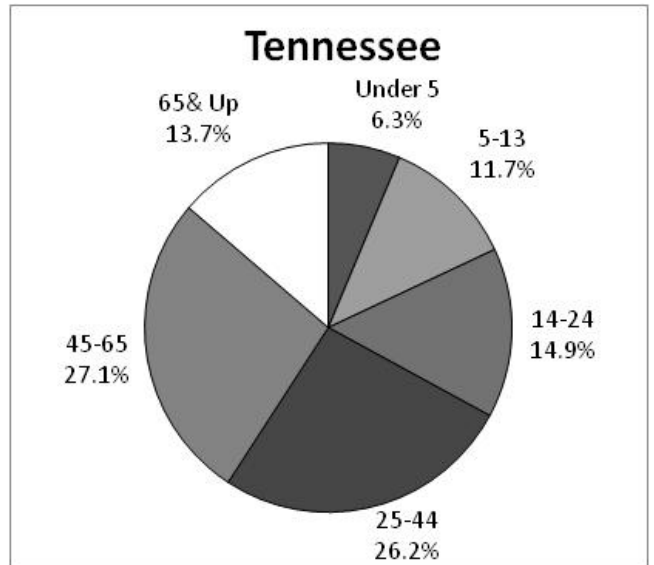
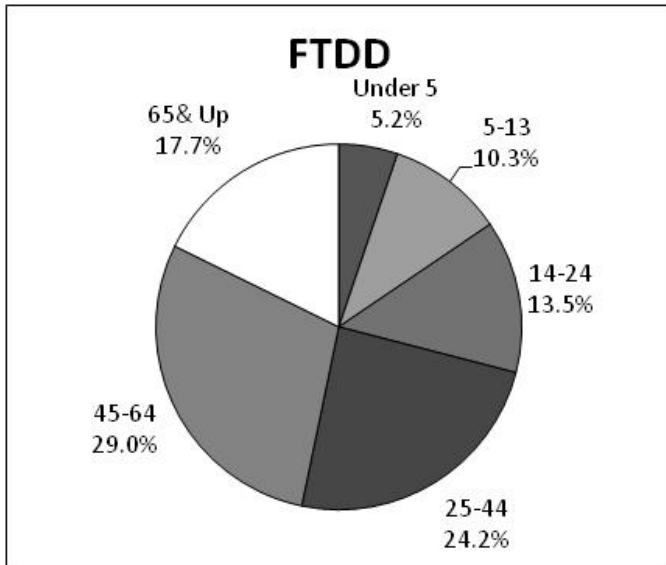


TABLE TWO D

EDUCATIONAL ATTAINMENT - PERSONS 25 YEARS AND OLDER, 2006-2010 *

	25 YEARS AND OLDER	NOT A HIGH SCHOOL GRADUATE	HIGH SCHOOL GRADUATE	SOME COLLEGE NO DEGREE	ASSOCIATES DEGREE	BACHELOR'S DEGREE	ADVANCED DEGREE
Carter	40,387	23.1	39.2	17.8	5.0	9.7	5.1
Greene	48,165	23.4	41.6	17.1	4.0	8.4	5.6
Hancock	4,834	31.7	47.4	12.0	1.6	4.5	2.9
Hawkins	39,741	21.9	40.5	19.7	5.5	8.4	4.0
Johnson	13,583	30.9	39.4	14.7	5.0	6.1	4.0
Sullivan	111,615	18.0	34.0	20.5	7.6	13.0	7.0
Unicoi	13,285	25.3	38.2	19.3	5.0	8.2	4.0
Washington	81,837	15.6	29.8	20.6	6.0	17.4	10.5
FTDD	353,447	20.2	35.9	19.3	5.9	11.9	6.8
TN	4,156,132	17.5	33.4	20.4	6.0	14.7	8.0
US	199,726,659	29.0	14.9	20.6	7.5	17.6	10.3

* Data is cumulative based on the highest educational level attained. Columns add to 100%.

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2006-2010.

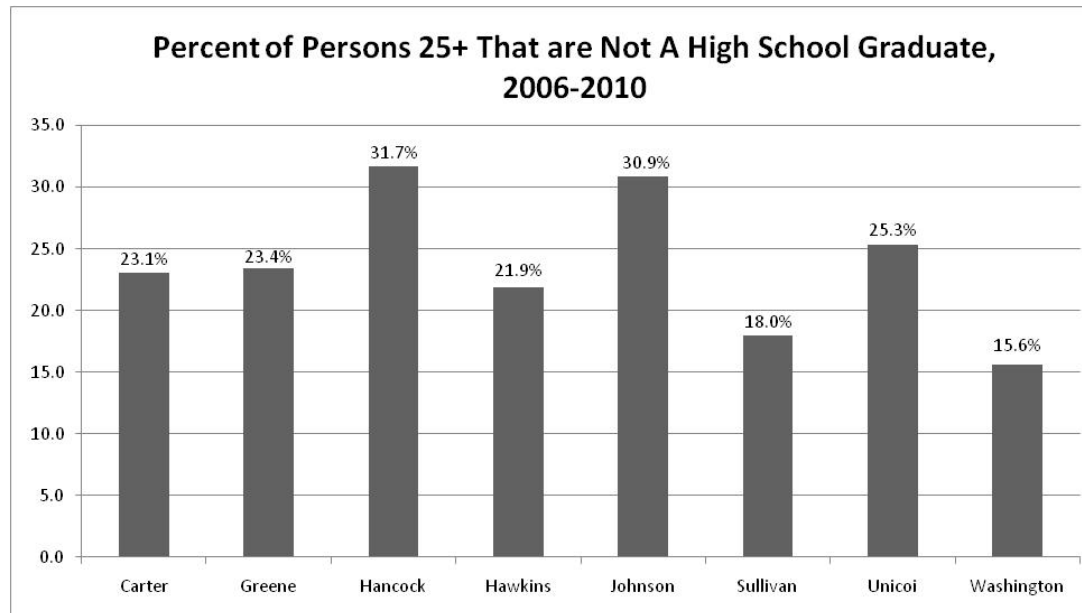


Table Two E

PER CAPITA INCOME

AREA	2005	2010	Number Change	Percent Change
Carter County	22,826	27,108	4,282	18.8
Greene County	29,645	29,700	55	0.2
Hancock County	16,275	19,465	3,190	19.6
Hawkins County	23,410	26,860	3,450	14.7
Johnson County	18,162	23,435	5,273	29.0
Sullivan County	29,240	33,846	4,606	15.8
Unicoi County	26,912	29,794	2,882	10.7
Washington County	28,735	32,950	4,215	14.7
FTDD	27,060	30,802	3,742	13.8
TN	31,302	34,921	3,619	11.6
US	35,398	39,937	4,539	12.8

Source: U. S. Bureau of Economic Analysis Estimates

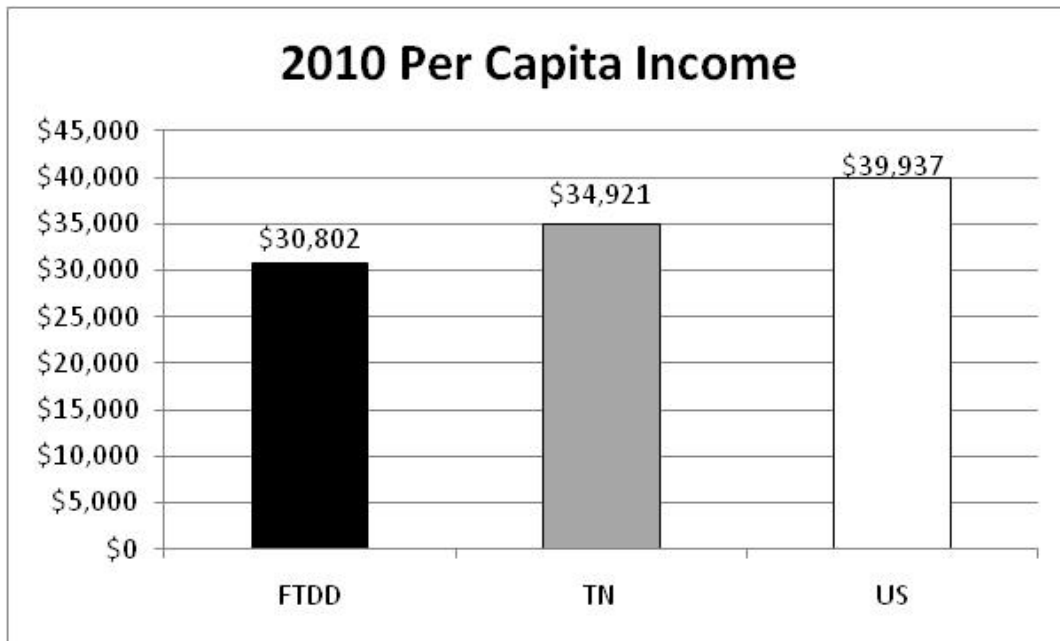


Table Two F

MEDIAN HOUSEHOLD INCOME

AREA	2005 MEDIAN HOUSEHOLD INCOME	2010 MEDIAN HOUSEHOLD INCOME	PERCENT CHANGE
Carter County	\$32,707	\$31,145	-4.8
Greene County	32,519	34,649	6.6
Hancock County	21,026	24,891	18.4
Hawkins County	32,456	37,164	14.5
Johnson County	25,791	29,219	13.3
Sullivan County	35,375	36,337	2.7
Unicoi County	34,796	35,976	3.4
Washington County	38,411	41,702	8.6
FTDD *	34,482	36,348	5.4
TN	38,947	41,461	7.1
US	46,242	50,046	8.2

Source: U. S. Census Bureau

**Weighted Average Median Household Income*

Median household income is not available for the First Tennessee Development District.

In order to compute a similar measure, the following weighted average calculation was made.

Population multiplied by the median household income for all 8 counties.

The aggregate number divided by the population of the FTDD.

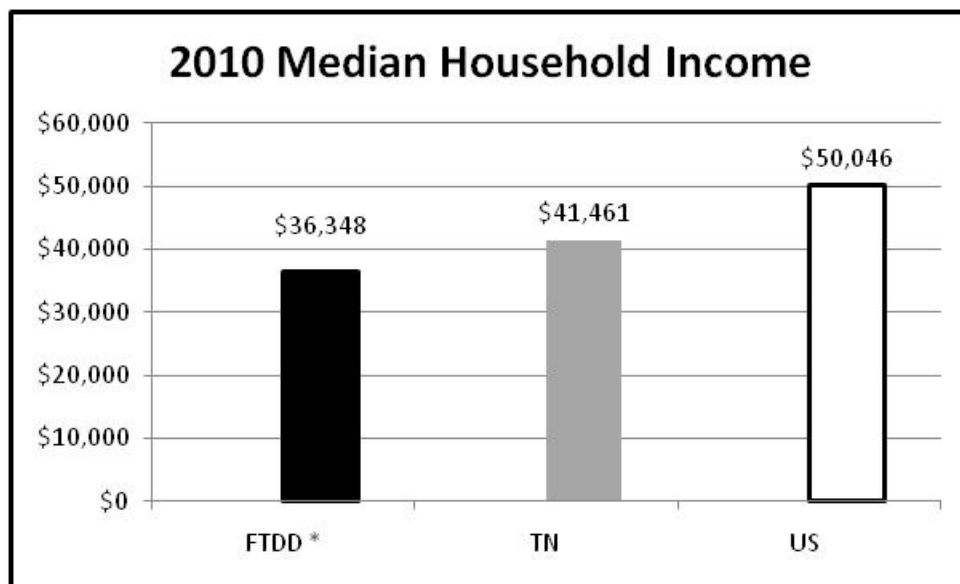


Table Two G

POVERTY DATA

AREA	% PERSONS IN POVERTY 2005	% PERSONS IN POVERTY 2010	NET CHANGE
Carter County	19.1	26.0	6.9
Greene County	19.2	22.6	3.4
Hancock County	39.5	30.9	-8.6
Hawkins County	18.8	18.8	0.0
Johnson County	24.5	26.4	1.9
Sullivan County	15.7	18.0	2.3
Unicoi County	15.6	17.3	1.7
Washington County	14.4	17.8	3.4
FTDD	17.2	20.0	2.8
TN	15.6	17.8	2.2
US	13.3	15.3	2.0

Source: U.S. Census Bureau Estimates

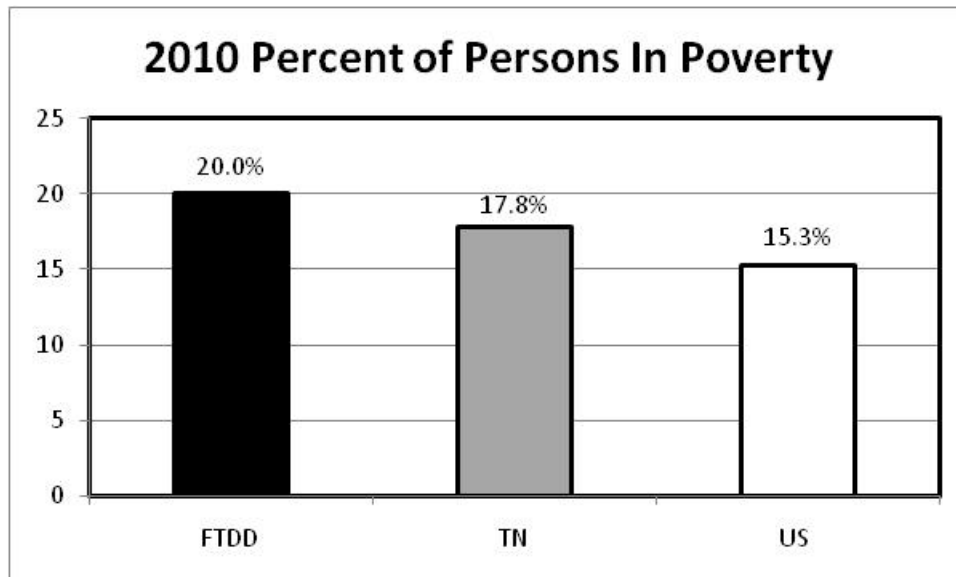
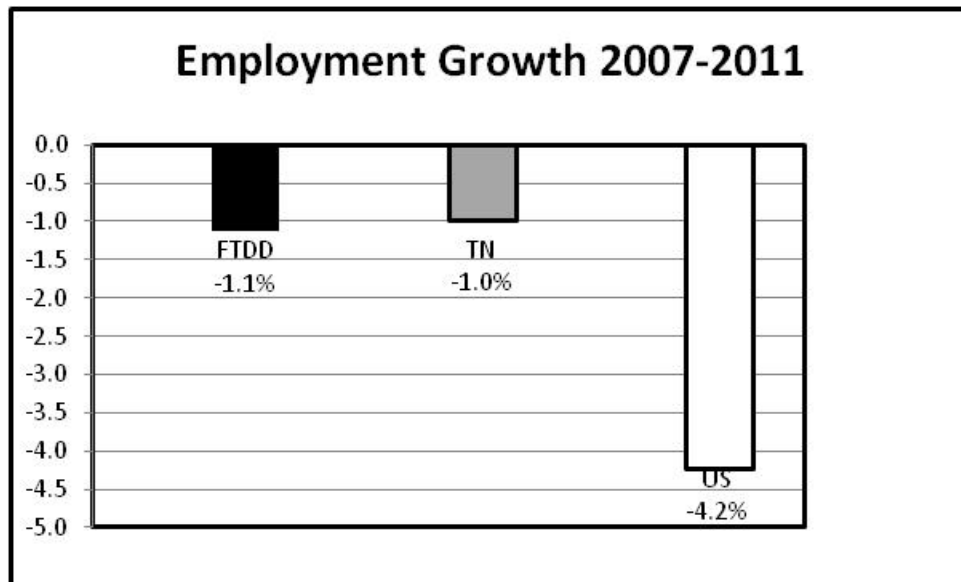


Table Two H

EMPLOYMENT GROWTH BY PLACE OF RESIDENCE

AREA	2007	2011	Change 2007-2011	
			NUMBER	PERCENT
Carter County	27,830	26,370	-1,460	-5.2
Greene County	29,060	26,880	-2,180	-7.5
Hancock County	2,290	2,120	-170	-7.4
Hawkins County	24,790	24,240	-550	-2.2
Johnson County	6,890	6,690	-200	-2.9
Sullivan County	69,950	70,130	180	0.3
Unicoi County	7,860	7,940	80	1.0
Washington County	58,170	59,900	1,730	3.0
FTDD	226,840	224,270	-2,570	-1.1
TN	2,873,600	2,845,000	-28,600	-1.0
US	146,047,000	139,869,000	-6,178,000	-4.2

Source: Tennessee Department of Employment Security.



**Table Two I
2009 FTDD EMPLOYMENT BY INDUSTRY
BY PLACE OF WORK**

	FTDD NUMBER	FTDD PERCENT	TN PERCENT	US PERCENT
Total Employees	178,467	100.0	100.0	100.0
Goods Producing:	39,240	22.0	16.6	14.2
Manufacturing	29,994	16.8	12.1	9.1
Construction	8,726	4.9	4.1	4.6
Mining, Forestry	520	0.3	0.4	0.5
Service Providing:	110,163	61.7	67.2	68.6
Retail Trade	23,023	12.9	12.0	11.1
Wholesale Trade, Utilities & Transportation	9,727	5.5	9.7	8.0
Financial Activities	8,274	4.6	5.4	5.9
Health Services & Education (Private Sector)	30,226	16.9	13.9	14.7
Leisure & Hospitality	16,817	9.4	10.3	10.0
Information	4,127	2.3	1.8	2.1
Professional & Other Services	17,969	10.1	14.1	16.8
Government	29,064	16.3	16.2	17.2

Numbers may not add due to rounding.

Source: TN Dept. of Empl. Security, "2009 Annual Census of Empl. and Wages" & Council of Economic Advisers, "Economic Indicators", June 2010 edition

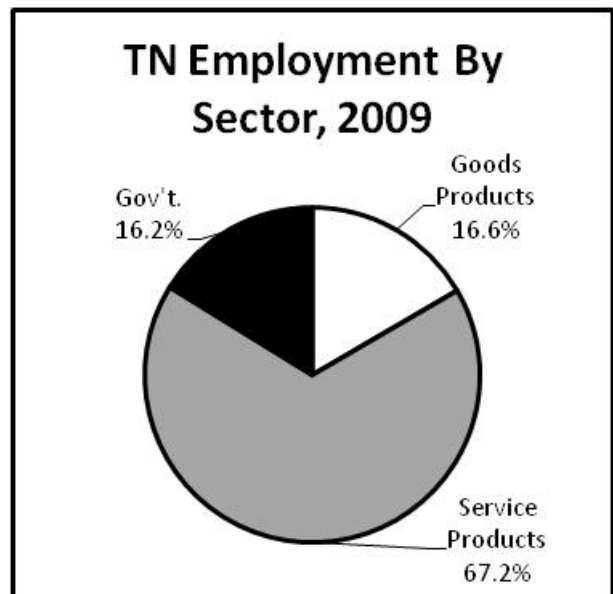
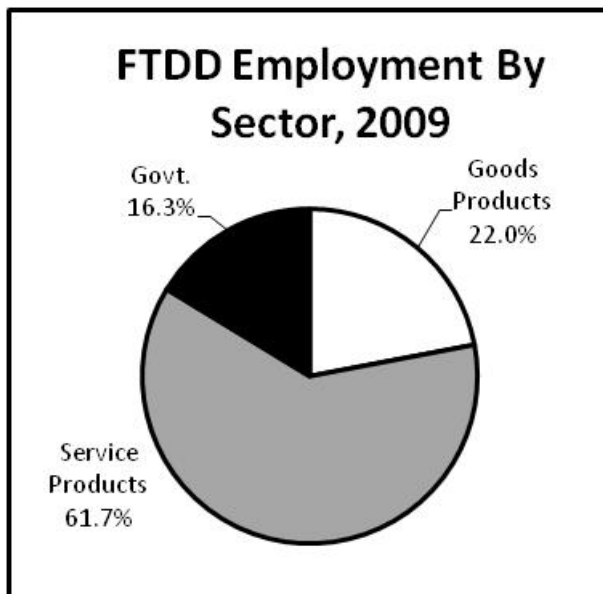


Table Two J
2009 COUNTY EMPLOYMENT BY INDUSTRY
BY PLACE OF WORK

AREA	CONSTR/ MANUF.	NAT. RES.	TRADE & UTILITIES	FINANCIAL	SERVICES	GOV'T	TOTAL
Carter	1,005	826	2,019	385	3,659	2,281	10,175
Greene	5,118	581	4,952	1,423	6,694	4,291	23,059
Hancock	112	25	122	19	309	426	1,013
Hawkins	3,540	344	1,771	280	2,497	2,311	10,743
Johnson	634	149	925	139	835	747	3,429
Sullivan	11,975	5,444	12,624	2,320	27,526	6,808	66,697
Unicoi	1,622	258	489	137	1,301	1,036	4,843
Washington	5,988	1,619	9,848	3,571	26,318	11,164	58,508
FTDD	29,994	9,246	32,750	8,274	69,139	29,064	178,467
TN	309,316	116,359	555,457	138,255	1,029,808	416,067	2,565,262
US	11,883,000	6,737,000	24,949,000	7,758,000	57,044,000	22,549,000	130,920,000

Source: TN Department of Employment Security, "2009 Annual Census of Employment and Wages" & Council of Economic Advisers, "Economic Indicators", November 2010

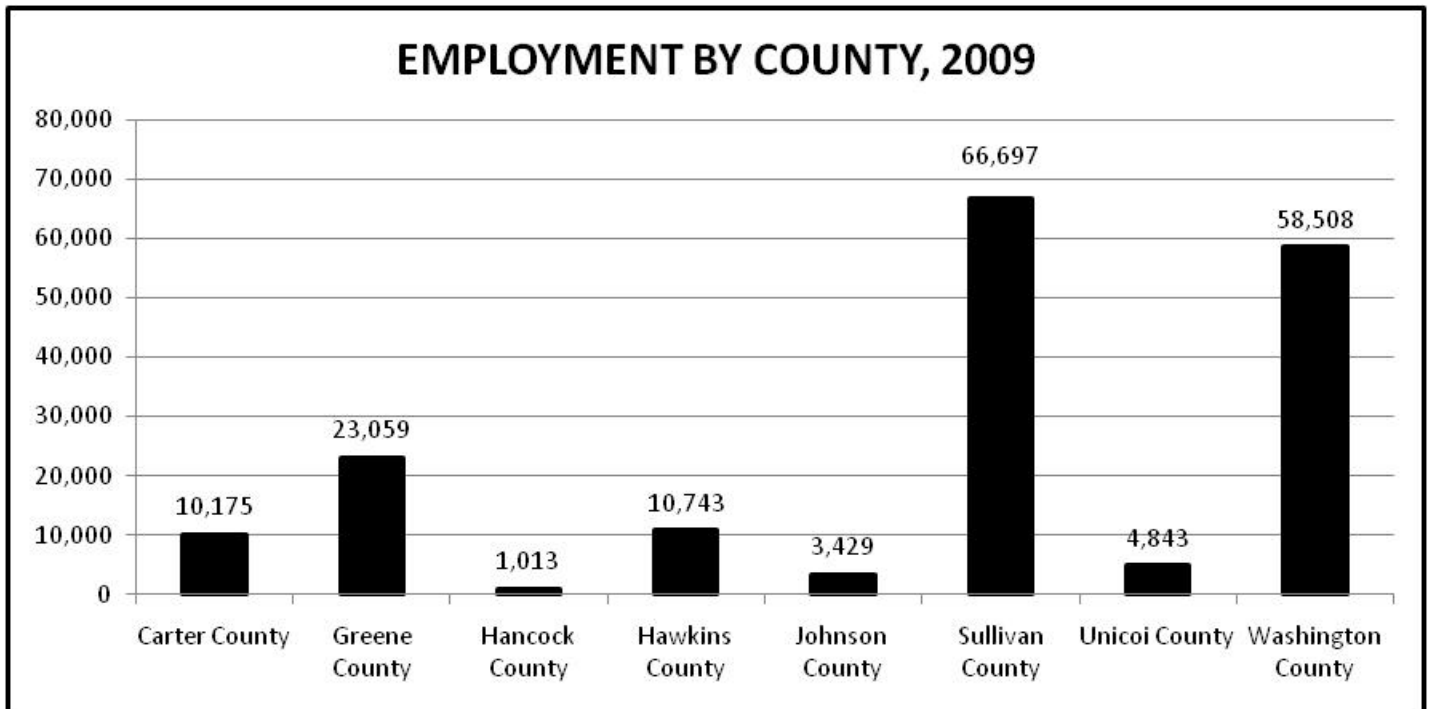


Table Two K

UNEMPLOYMENT RATES

AREA	2007	2008	2009	2010	2011	2007-11 Change
Carter	5.1	6.7	10.3	10.1	9.1	4.0
Greene	7.2	9.5	15.9	13.4	11.8	4.6
Hancock	5.9	8.4	15.2	16.0	14.1	8.2
Hawkins	4.8	6.8	11.4	9.5	8.9	4.1
Johnson	5.9	8.8	12.6	13.2	12.0	6.1
Sullivan	4.2	5.4	8.9	8.5	7.7	3.5
Unicoi	5.5	7.5	11.6	10.3	9.7	4.2
Washington	4.2	5.7	8.8	8.4	7.8	3.6
FTDD	4.9	6.5	10.5	9.7	8.8	3.9
TN	4.9	6.7	10.5	9.8	9.2	4.3
US	4.6	5.8	9.3	9.6	8.9	4.3

Source: Tennessee Department of Employment Security

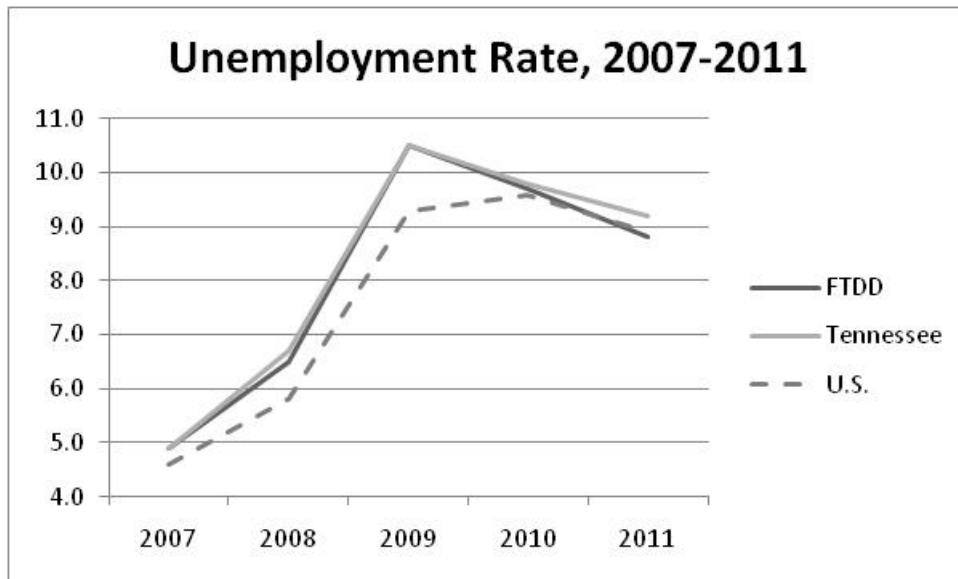


Table Two L

RETAIL SALES

AREA	2010	2011	% Change
Carter	\$443,922,183	\$453,298,496	2.1
Greene	664,972,069	705,599,940	6.1
Hancock	25,140,580	26,065,933	3.7
Hawkins	310,663,685	333,969,535	7.5
Johnson	91,354,639	93,452,676	2.3
Sullivan	2,093,488,907	2,204,689,988	5.3
Unicoi	124,364,147	126,665,774	1.9
Washington	2,004,032,830	2,094,166,376	4.5
FTDD	5,757,939,040	6,037,908,718	4.9
Tennessee	79,284,000,000	84,030,000,000	6.0
United States	4,307,531,000,000	4,647,648,000,000	7.9

Source: Bureau of Business and Econ. Research, East TN State University

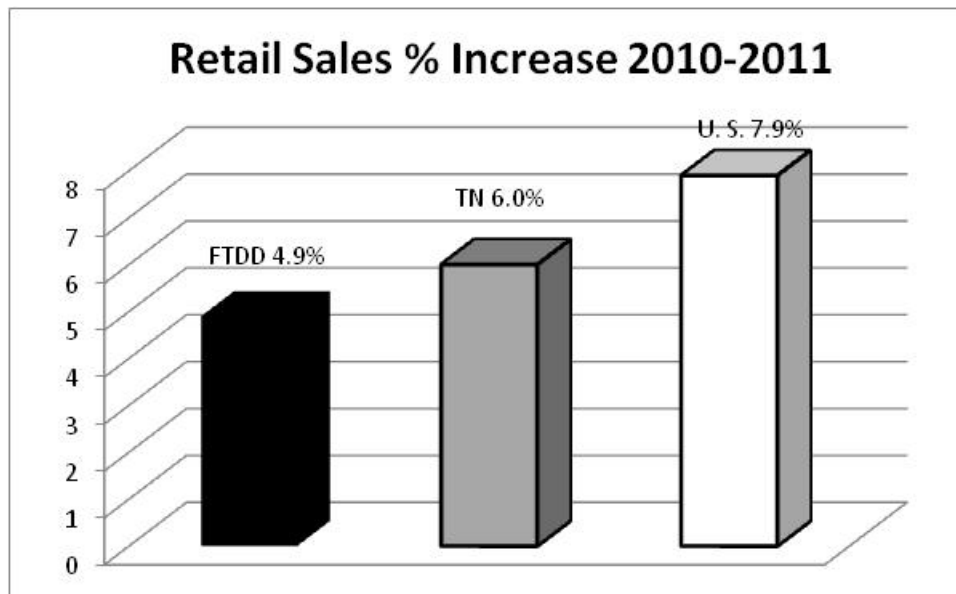
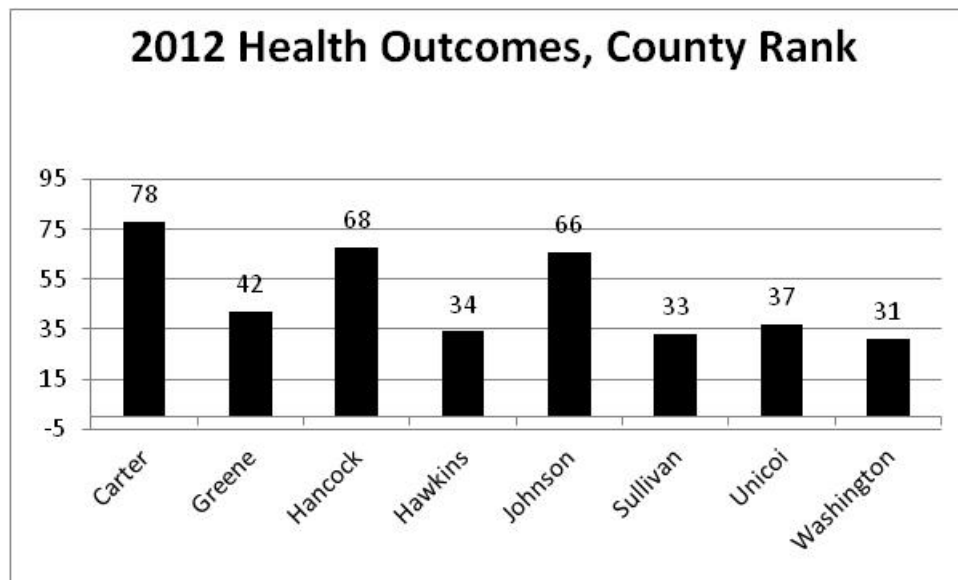


TABLE TWO M
2012 HEALTH OUTCOMES *

AREA	OVERALL (Of 95 TN Co.)	50% Mortality *	50% Morbidity *
Carter	78	66	87
Greene	42	44	48
Hancock	68	73	57
Hawkins	34	45	34
Johnson	66	60	83
Sullivan	33	42	37
Unicoi	37	52	25
Washington	31	26	47

Source: East Tennessee Regional Health Forum, County Health Rankings. Compiled by the Univ. of Wisconsin Population Health Institute, 2012.

* Health Outcomes are based on equal weighting of mortality measures (premature death) & morbidity measures (poor/fair health days, poor physical & mental health days, low birthweight).

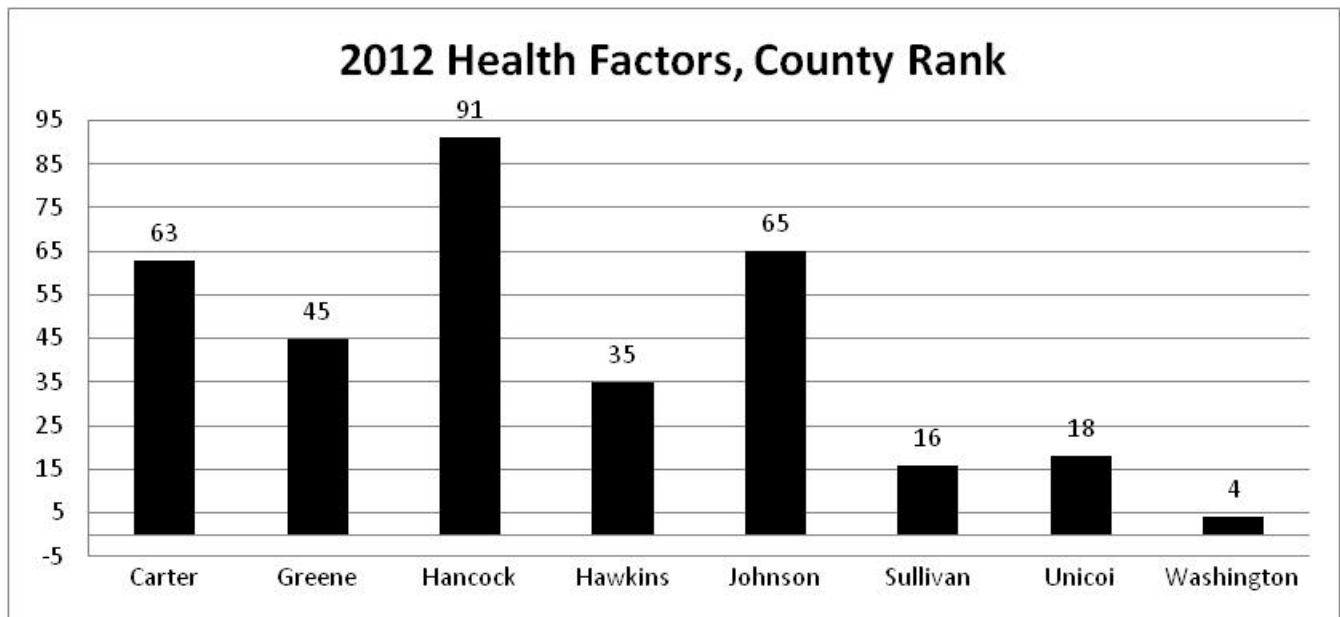


**TABLE TWO N
2012 HEALTH FACTORS ***

AREA	OVERALL (Of 95 TN Co.)	30% Health Behaviors	20% Clinical Care	40% Social & Econ. Factors	10% Physical Environment
Carter	63	25	83	68	56
Greene	45	62	30	52	50
Hancock	91	51	88	91	80
Hawkins	35	48	22	36	84
Johnson	65	29	76	78	42
Sullivan	16	49	5	24	69
Unicoi	18	10	34	25	57
Washington	4	13	2	7	48

Source: East Tennessee Regional Health Forum, County Health Rankings. Compiled by the Univ. of Wisconsin Population Health Institute, 2012.

* *Health Factors* are based on weighted scores health factors listed above. *Health Behaviors* include measures as percentage of adult smoking, adult obesity, physical inactivity, excessive drinking, motor vehicle crashes, sexually transmitted infections, and teen birth rate. *Clinical Care* includes uninsured, primary care physicians, preventable hospital days, diabetic screening, and mammography screenings. *Social & Economic Factors* include education attainment, unemployment, children in poverty, inadequate social support, children in single parent households, and violent crime rate. *Physical Environment* includes air pollution and ozone days, access to recreation facilities, limited access to healthy foods, and fast food restaurants.



CHAPTER THREE CLUSTERS

An Industry Cluster Analysis was completed for the Regional Alliance for Economic Development (RAED) by the Natelson Dale Group in May 2006 that included the eight counties of the First Tennessee Development District and Scott and Washington counties in Virginia. The information from the 2006 study has been updated where applicable and integrated into the Jobs4TN Plan of the Department of Economic and Community Development of the State of Tennessee. The Jobs4TN Plan developed in 2011 addresses cluster development as follows:

Prioritizing target clusters and existing industries: Tennessee will focus its recruitment efforts on six target clusters in which the state has a clear competitive advantage:

- automotive;
- chemicals and plastics;
- transportation, logistics and distribution services;
- business services;
- healthcare;
- advanced manufacturing and energy technologies.

The Northeast Tennessee Valley Regional Industrial Development Association targeted clusters are very similar, but add:

- Data Centers and Information Technology
- Non-electrical and Electrical Machinery
- Aviation Related Services

In 2010 expansion of existing business accounted for nearly 86 percent of new jobs created in Tennessee. The state will focus on helping existing businesses expand and remain competitive through a targeted outreach program. A new “existing business toolkit” of incentives and resources will be created for Tennessee companies.

The regional cluster study matches well to the State study.

Comparison of Tennessee to the U.S. Another document that was analyzed when reviewing the cluster information was *Tennessee Competitiveness: State and Cluster Economic Performance*, February 26, 2011 by Michael E. Porter of Harvard Business School. The State of Tennessee ranked 41st out of 50 states in gross state product per capita at \$38,834 in 2009. Tennessee’s share of employment in strong clusters such as automotive, chemical products, motor driven products, plastics and building fixtures ranked 40th in 2008, but the growth rate of employment in these sectors from 1998-2008 ranked 16th out of fifty states.

DEFINITION OF A CLUSTER

According to the Cluster Analysis, the literature on industry clusters includes five main themes that define the concept:

1. A cluster is an interdependent concentration of companies, suppliers, and associated institutions such as trade associations, educational institutions, and governments.
2. Although there is no uniform definition for the geographic scope of clusters, they do form in some spatial context. The geographic scope of clusters ranges from a single city, to a state, or larger region.
3. A cluster is more than an individual industry. It is important to view firms in a cluster in the context of a larger industrial system. This system includes both horizontal and vertical relationships, along with direct and indirect linkages. Specifically, a cluster includes firms and industries that may be connected through their dependence on similar labor skills, use of similar technologies, or that produce common or similar goods and services.
4. Clusters are a dynamic phenomenon. It is the interaction and functional relationships between firms, industries, and associated institutions that distinguish a cluster from other industrial settings.
5. Clusters include a “social infrastructure” which provides for effective information flow and exchange among firms, industries, government, academia and associated institutions—a critical component of an effective industry cluster. This “social infrastructure” helps facilitate social interaction, trust, and a shared vision among members of the cluster, further promoting the dynamic nature of clusters.

PRODUCT DEVELOPMENT

An understanding of the region’s competitive position is not only critical in articulating the region’s “selling points” to prospective firms, but is also important for developing (or advocating) programs to address the region’s current competitive weaknesses. Based on the research completed for this study, a summary of the region’s key competitive strengths and weaknesses is provided below.

Competitive Advantages:

- Advanced communication infrastructure including fiber optics (although the level of development is not uniform throughout the 10-county region);
- Good air, rail, and interstate access;
- Strategic location – point of maximum accessibility to a large portion of North America’s consumer and producer markets (over 80% of the U.S. population can be reached overnight by truck);
- Loyal workforce with a good work ethic, in a largely non-unionized state;
- Moderate housing costs;

- A medical school that is nationally recognized for its leadership in rural health care issues;
- A pharmacy school;
- A very good “teaching university,” with the potential for expanded research activities based on the forthcoming pharmacy school and related public/private collaborations such as the Med Tech Corridor in Johnson City (although this initiative has been only moderately successful to date);
- A strong community college system, with the ability to provide in-service training to area employers.

Competitive Disadvantages:

- Lack of ethnic and racial diversity, which limits the region’s access to the full range of human capital that is available to more cosmopolitan parts of the United States;
- Lack of “depth” in the regional workforce, with major employers reporting significant challenges in recruiting knowledge workers and executives;
- Limited stock of housing at critical price points, especially low income housing;
- Lack of a tier one research university.

RECOMMENDED TARGET CLUSTERS

The report divided employment into twenty-six clusters that represented employment of 142,600 in the region. The employment in these twenty-six clusters represented 78.6 percent of the employment in the region. The Cluster Analysis further divided the clusters into nineteen first tier clusters and seven second tier clusters. The nineteen first tier clusters and information on these clusters is listed in Table Three A. In reviewing Table Three A, the following information is useful.

Total Employees (TCEDA) – The current number of cluster employees in the 10-county TCEDA region.

Location Quotient (LQ) – Clusters with LQ’s greater than 1.0 have regional shares of employment that are greater than the national shares, suggesting that the region has a comparative advantage in these clusters.

Employment Change – The absolute change in cluster employment in the 10-county TCEDA region between 1998 and 2003.

Regional Share Index (RSI) – Related to job growth (or decline), this index shows the performance of a cluster within the TCEDA region relative to the National average for that Cluster during the 5-year period between 1998 and 2003. An index value of less than one (1.0) indicates below-average growth, while an index of greater than one (1.0) indicates growth that was better than the National average for that cluster.

Projected National Growth – Shows projected national job growth between 2004 and 2014 for 3 and 4-digit NAICS industries that correspond to the more detailed 5- and 6-digit industries that make up the cluster. For example, NAICS 3212 (Veneer, Plywood, and Engineered Wood Product Manufacturing) is projected to add 8,000 jobs between 2004 and 2014. The Chemical based products cluster includes, among others, the following NAICS industry: Reconstituted Wood Product Manufacturing (NAICS 321219). Since this industry is a more detailed industrial classification under 3212, this projected gain of 8,000 jobs is allocated to the cluster.

Average Annual Wage – Shows the national average annual wage (based on 2004, 2nd quarter data) for the cluster.

Wage index – Illustrates the average wage for the cluster relative to the average for all the industries that comprise the value chain clusters. An index value of 100 indicates that the annual average wage for the cluster is exactly the same for all the industries combined that make up the value chain clusters. Any value above 100 indicates the cluster has higher wages than the national average (for example, a value of 1.10 indicates the cluster’s annual average wage is 10% higher than the national average). On the other hand, any value below 100 indicates the cluster has lower wages than the national average (for example, a value of 90.0 indicates the cluster’s annual average wage is 90% of the national average).

POTENTIAL TARGET ACTIVITIES

The list of first tier clusters is divided into three categories:

1. **Established, high-growth** – clusters that are well established in the region and are also expected to be high-growth clusters nationally over the next ten years;
2. **Established, low-growth** – clusters that are well established in the region, but which are not expected to experience significant growth nationally over the next ten years;
3. **Potential/emerging** – clusters that are emerging in the region and have the potential for significant growth based on projected national trends.

Given the different characteristics of each group, TCEDA’s approach to each type of cluster should be different. The recommended areas of focus for each group are as follows:

Cluster Category	Recommended TCEDA Focus
Established, high-growth	Attraction (i.e., marketing to recruit firms from outside the region).
Established, low-growth	Retention/expansion of existing firms; focused recruitment activities based on opportunities identified through taskforce process (described further below).
Potential/emerging	Attraction; support of entrepreneurial start-ups.

Established, High-Growth Clusters

- Appliances manufacturing
- Engine equipment manufacturing
- Logistics, distribution and warehousing
- Motor vehicles-related manufacturing
- Nondurable industry machinery manufacturing

Established, Low-Growth Clusters

- Chemical-based products
- Machine tools manufacturing
- Precision instruments manufacturing
- Plastics & rubber manufacturing

Potential/Emerging Clusters

- Aviation
- Health Services
- Information technology/services
- Pharmaceuticals
- Printing & publishing

OTHER POTENTIAL TARGET ACTIVITIES

The following specialized activities which, although not formal clusters, warrant attention in future branding and “product development” activities:

- Development of a nationally recognized high-end retirement community;
- Tourism and hospitality;
- NASCAR support activities (e.g., automotive services to racing teams);
- Clinical trials (which would represent the “nexus” between consumer health care services and pharmaceuticals manufacturing);
- Call centers.

STRATEGIC FINDINGS

Strategic Finding 4. Development of Health Services. Opportunities to further develop health services include a continued emphasis on providing an environment for the health services sector to succeed in the region. A threat to the health services sector is the cost containment difficulty being experienced in the health insurance industry. While improving the health of area residents is the main emphasis, a benefit of the health services sector is that it creates jobs that are above the current average wage for the region. Efforts to develop a healthy lifestyle to prevent health issues are gaining momentum in companies, schools, and government.

The **health services** sector has experienced strong employment growth. The Tri-Cities has become a regional medical center that draws patients from a fifty-mile radius of the Tri-Cities Regional Airport, an area with a population of over 1 million. Two major

healthcare providers, Mountains States Health Alliance and Wellmont Health Systems have expanded their facilities significantly in the last five years.

Improvements by Mountain States include the opening of the Franklin Woods Community Hospital in Johnson City, the Johnston Memorial Hospital in Abingdon and the Niswonger Children's Hospital in Johnson City and surgery centers in Johnson City and Norton. Wellmont completed a major renovation at Holston Valley Medical Center in Kingsport including a new intensive care unit and expanded emergency and radiology departments. In addition, emergency departments were expanded at Norton and Pennington Gap.

The cooperative effort of the ETSU College of Medicine, School of Pharmacy and the Veteran's Administration Hospital is a public sector initiative that has assisted with the development of the medical sector. Another public/private sector development is the Med Tech Corridor in Johnson City that has provided available land and telecommunications infrastructure for medical and technology based businesses.

Stakeholders in the region may be surprised that the health services cluster has been classified here as a "potential" rather than an "established" cluster. While this cluster clearly is large in the region in terms of the absolute numbers of jobs, the analysis indicates that it is not uniquely concentrated as a percentage of the total economy (i.e., the current number of jobs is about what would be expected for a region of this size/population). The School of Pharmacy at East Tennessee State University (and the potential for related commercial activities such as clinical trials), the opportunity now exists to position the region as a true health care "destination" for consumers living outside the region. The question may also be raised as to why the target list includes some "low-growth" clusters (category #2 above). While these clusters are not expected to post a net national gain in jobs over the next ten years, it is still likely that there will be movement of firms/jobs between different regions of the country. Given the TCEDA region's proven "track record" with these clusters and its status as a relatively low-cost location, the region is well positioned to attract firms in these clusters that are relocating from other (higher-cost) areas of the country.

Table Three A
Value Chain Cluster Screening Matrix

Cluster	Total Employees	LQ	Employment Change	RSI	Projected U.S. Growth – jobs (2004-14)	Avg. Ann. Wage	Wage Index	Comment
<u>Established – High Growth</u>								
Appliances	4,901	3.16	(1,544)	0.79	103,000	\$37,455	86.1	<ul style="list-style-type: none"> ▪ Well developed cluster – employment in multiple component industries ▪ Strong employment growth projections over next 10 years ▪ Relative low wages compared to other clusters
Engine Equipment (technology-intensive industries)	7,005	3.91	2,090	1.71	49,000	\$49,512	113.8	<ul style="list-style-type: none"> ▪ Well developed cluster – employment in multiple component industries ▪ Strong employment growth over last 5 years
Logistics, distribution & warehousing ⁽¹⁾	6,270	0.95	1,915	1.22	986,000	\$39,217	90.2	<ul style="list-style-type: none"> ▪ Core industry sector in TCEDA region ▪ Very strong employment growth projections over next 10 years
Motor vehicles	5,915	3.21	955	1.34	67,000	\$51,943	119.4	<ul style="list-style-type: none"> ▪ Well developed cluster – employment in multiple component industries ▪ Good wages
Motor vehicles (technology-intensive industries)	5,425	3.67	595	1.30	48,000	\$55,479	127.5	<ul style="list-style-type: none"> ▪ Well developed cluster – employment in multiple component industries ▪ Good wages
Nondurable industry machinery	8,453	2.75	1,692	1.52	55,000	\$48,573	111.7	<ul style="list-style-type: none"> ▪ Well developed cluster – employment in multiple component industries ▪ Strong employment growth over last 5 years

Cluster	Total Employees	LQ	Employment Change	RSI	Projected U.S. Growth – jobs (2004-14)	Avg. Ann. Wage	Wage Index	Comment
Established – Low Growth								
Chemical-based products	8,590	11.43	(1,195)	1.08	79,000	\$60,222	138.4	<ul style="list-style-type: none"> ▪ Opportunity cluster that is not fully leveraged – employment concentrated in one industry ▪ Very high wages ▪ Lost jobs at slower rate than the national average over the last 5 years
Chemicals (technology-intensive industries)	8,194	16.96	204	1.21	6,000	\$61,686	141.8	<ul style="list-style-type: none"> ▪ Opportunity cluster that is not fully leveraged – employment concentrated in one industry ▪ Very high wages ▪ Little job growth projected over next 10 years
Machine tools	4,475	2.53	(726)	1.09	20,000	\$41,529	95.5	<ul style="list-style-type: none"> ▪ Well developed cluster – employment in multiple component industries ▪ Lost jobs at slower rate than the national average over the last 5 years
Plastics & rubber manufacturing	8,575	8.72	(190)	1.14	6,000	\$60,477	139.0	<ul style="list-style-type: none"> ▪ Cluster very strongly represented in the TCEDA region w/ very high wages ▪ Lost jobs at slower rate than the national average over the last 5 years ▪ Little job growth projected over next 10 years
Precision instruments	1,955	3.37	(1,685)	0.70	26,000	\$56,398	129.7	<ul style="list-style-type: none"> ▪ Opportunity cluster that is not fully leveraged – employment concentrated in two industries ▪ Lost jobs at slower rate than the national average over the last 5 years
Precision instruments (technology-intensive industries)	830	2.12	690	7.83	18,000	\$58,913	135.4	<ul style="list-style-type: none"> ▪ Narrowly defined cluster with very high wages relative to the average for all clusters ▪ Strong growth over the last five years compared to the national average.

Cluster	Total Employees	LQ	Employment Change	RSI	Projected U.S. Growth – jobs (2004-14)	Avg. Ann. Wage	Wage Index	Comment
Potential / Emerging								
Aviation ⁽²⁾	265	0.20	75	1.65	81,000	\$60,091	138.1	<ul style="list-style-type: none"> ▪ Relatively weak representation in the region compared to the Nation ▪ Growing significantly faster than the national average ▪ Very high wages
Basic health services	31,774	0.87	1,189	0.95	5,992,000	\$43,116	99.1	<ul style="list-style-type: none"> ▪ Important cluster for emphasizing “quality of life: (QOL) features of region ▪ Potential significant linkages to new pharmacy school and clinical trials
Information services	16,693	0.77	1,360	1.01	2,228,000	\$53,398	122.8	<ul style="list-style-type: none"> ▪ Broadly defined cluster with substantial growth projections over next 10 years ▪ Potentially a significant cluster based on growth prospects
Information services (technology-intensive industries)	3,145	0.58	912	1.14	779,000	\$68,602	157.7	<ul style="list-style-type: none"> ▪ Relatively weak representation in the region compared to the Nation ▪ Growing faster than the national average ▪ Very high wages
Pharmaceuticals	890	1.18	75	1.08	90,000	\$63,267	145.4	<ul style="list-style-type: none"> ▪ Potential cluster that is not fully leveraged - employment concentrated in one industry ▪ Growing faster than the national average ▪ Very high wages

Cluster	Total Employees	LQ	Employment Change	RSI	Projected U.S. Growth – jobs (2004-14)	Avg. Ann. Wage	Wage Index	Comment
Potential / Emerging (cont.)								
Pharmaceuticals (technology-intensive industries)	820	1.40	200	1.27	82,000	\$67,021	154.1	<ul style="list-style-type: none"> ▪ Potential cluster that is not fully leveraged - employment concentrated in one industry ▪ Growing faster than the national average ▪ Very high wages
Printing & publishing	6,115	1.35	(593)	0.86	645,000	\$50,071	115.1	<ul style="list-style-type: none"> ▪ Well developed cluster - employment in multiple component industries ▪ Lost jobs at a faster rate than the Nation over the last 5 years

Source: County Business Patterns, 1998 & 2003, U.S. Census Bureau; Feser, Edward, 2004, "An updated set of benchmark value chains for the U.S., 1997" Regional Economics Applications Laboratory, University of Illinois at Urbana-Champaign; Bureau of Labor Statistics (BLS); TNDG.

Notes:

(1) This cluster is defined by TNDG independently; it is not included as a benchmark value chain cluster. We have defined it by combining the following NAICS industry sectors: Logistics management consulting services (NAICS 541614) and Warehousing and Storage (NAICS 48-49).

(2) This cluster is defined by TNDG independently; it is not included as a benchmark value chain cluster. We have defined it by combining the following NAICS industry sectors: Air Transportation (NAICS 481), Aircraft Manufacturing (NAICS 336411), Aircraft Engine and Engine Parts Manufacturing (NAICS 336412), and Other Aircraft Parts and Auxiliary Equipment Manufacturing (NAICS 336413).

CHAPTER FOUR INFRASTRUCTURE

Water resources have become a more critical issue for the region in recent years. The need for water and wastewater services has increased with the gains in the region's population and business base.

WATER RESOURCES

ASSESSMENT OF WATER SOURCES

Northeast Tennessee has experienced years of significant drought and record wet seasons in the past ten years. Many utilities and residents have experienced springs or wells with decreased production or going dry for periods of time. Rivers are increasingly being viewed as the preferred water source due to larger water flows that can meet the long-term needs of the region. Still, a well or spring system can be very effective in meeting water needs.

River sources, because they are a higher volume of water, are less affected by drought as would a well or spring. However, river sources usually have more turbidity and points of surface water influence. Thus, rivers are perceived as a less preferred drinking option by the public when compared to a well or spring. In reality, depending on the level of treatment and with new technology to treat water, a river can be an excellent source in many instances. Approximately 70% of the region's population using public water is served primarily by a river source.

The region has adequate river sources of water with the Clinch, Holston, Watauga, and Nolichucky rivers. A utility relying on springs or wells and considering a river source is faced with a complex and expensive proposal. In addition, water withdrawal permits are becoming increasingly scrutinized.

Large customer utilities such as Bristol, Greeneville, Johnson City, and Kingsport have water sources located on rivers. Bristol-Bluff City Utility District and Jonesborough also have rivers as their water sources. In addition, many smaller utilities purchase water from larger utilities using a river source.

The Watauga River Regional Water Authority (WRRWA) in Carter County is a group of five utilities that are developing a source at Wilbur Dam on the Watauga River. The water treatment plant should be operational by the end of 2012 and two major distribution lines have been completed. Currently, none of the utilities in Carter County obtain water from a river source. First Utility District of Hawkins County developed a 5.3 million gallon per day (MGD) water treatment plant in 2010 at the Holston River to

address its long-term water needs. The plant has the capacity to be expanded to 10 MGD. Lakeview Utility District in Hawkins County has developed a second microfiltration plant from well sources near the Holston River. The Town of Mountain City completed a major expansion of its Silver Lake/Rambo Springs water source.

While river sources provide many benefits, there are excellent water systems in the region that meet their needs with wells or springs. Erwin Utilities has operated a multiple well system successfully for a number of years. The advantage of a well system with adequate flows is that less treatment and associated costs are required if the well is a true groundwater source. A disadvantage is that well production decreases over time and replacement wells need to be put into service. Utilities in Carter and Johnson County have been struggling to find adequate well sources in recent years. Several utilities with less than 1,000 users find that wells and spring sources meet their needs adequately for the short and long-term.

The Town of Mountain City relies on a system of springs to meet its water needs as it is located several miles from a river or lake. Long-term, Mountain City may need to develop a water source on Watauga Lake. In the late 1980's, Johnson City successfully reintroduced a spring source (Unicoi Spring) to supplement its river source.

There are various water processing procedures (physical, biological, and/or chemical) to purify, modify and improve water quality. These steps can include a single device or multi-stage treatment steps to reduce and remove both suspended and dissolved solids to meet general or water quality standards required by the end user. Most water treatment plants in the region use conventional filtration to remove small particles. A conventional mixed media filter can include a mixture of sand, gravel, anthracite coal and activated carbon.

Technologies such as membrane filtration and reverse osmosis have become more economically feasible. Therefore the national trend has been to consider and implement these alternatives. The advantage of these filtration methods is that they can remove smaller particles than conventional methods. The Lakeview Utility District in Hawkins County placed in operation the first membrane filtration plant in the region during 2006. First Utility District of Hawkins County, the 2nd Lakeview water treatment plant, and the WRRWA water treatment plant all use microfiltration.

Disinfection is the application of energy or chemicals to inactivate pathogenic (disease producing) bacteria cysts, and other micro-organisms to make water biologically safe. Disinfection may involve the use of chemicals such as chlorine and peroxide, or physical processes such as distillation, ultra-violet light, or ozonation. Utilities in the region use either chlorine, peroxide or bleach as a disinfectant. As chlorine has been classified as a hazardous material, many smaller utilities have recently switched to bleach as they lack the capability to properly handle chlorine. The use of non-chemical methods such as ultra-violet light or ozonation are being considered and implemented more on a national level.

Table "Four A" provides information on each water system in the region including population served, design capacity, average daily pumpage, peak daily pumpage, and distribution storage.

ASSESSMENT OF WATER SYSTEMS

Maintenance of water systems is a continuous process for each utility. As water lines age, repairs and line replacement are a necessity in order to keep water loss rates and the quantity of water produced at an acceptable level. Several utilities in the region have water loss rates above forty percent, which is an indication of older lines and/or poor maintenance.

Reduction of water loss is becoming more important as several utilities are experiencing average daily pumpage greater than seventy percent of design capacity. A way to extend the usefulness of a water source is to decrease water demand through reduction in the rate of water loss. Many utilities are replacing aging galvanized lines that are corroding and coloring the water. In addition, some utilities are replacing older asbestos-cement lines that are beyond their useful life. The State of Tennessee, Utility Management Review Board is finalizing water loss guidelines requiring utilities to keep water loss below 35%.

In addition, more stringent requirements at the Federal level are impacting water utilities. Because of the high levels of Total Organic Compounds (TOC) in the water supply, some utilities have had problems meeting the EPA's Disinfection Byproducts Rule. First issued in 1997, this rule has been made more stringent in recent years. Disinfection byproducts (DBPs) are chemical compounds that are formed when the free chlorine combines with organic carbons to form two classes of compounds: Total Trihalomethanes (TTHM) and Five Haloacetic Acids (HAA5). These compounds have been classified as carcinogenic by EPA and have limits that are in the part per billion (ppb) range, meaning that very small concentrations can cause regulatory compliance issues. The maximum contaminant level (MCL) for TTHMs is 80 ppb and 60 ppb for HAA5s.

Some smaller utility systems have historically operated in a manner that keeps water rates low for the customer while deferring maintenance of the water system. While this keeps rates low in the short term, it increases rates significantly in the long-term. Another problem is that smaller utilities have a limited number of customers to share maintenance cost items that are required over time.

Another issue facing a few utilities is storage capacities being less than average daily demand. This measure is an indicator that additional water storage is needed. However, in the varied topography of Northeast Tennessee the issue is less about storage, but not having the stored water available in the correct water zones. Thus, part

of a system could run out of water due to a major water line break, even though there is sufficient storage in other parts of the system that cannot be drawn upon.

REGULATION OF WATER SYSTEMS

Utilities have seen increased regulations of water sources and water systems from a federal level. The Environmental Protection Agency (EPA) has developed national drinking water standards. The regulations of 1996 required filtration on almost all spring sites. The 1996 regulations also required more water quality testing. New regulations were also implemented in 2002. These regulations required lower turbidity, further testing for more items such as radon and arsenic, and better treatment of water.

Increased testing and stricter water treatment filtration requirements are making it more difficult for smaller utilities to meet state and federal guidelines. As a result, utilities are looking at ways to work together cooperatively. In addition, the formation of a new utility district is extremely difficult due to state and federal guidelines. Thus, areas requiring potable water are having to rely on existing utilities to provide service. With limited availability of federal funds to address water issues, funding for a project is very competitive. A project that address multiple utility needs is preferred over a project that addresses the needs of one utility.

Security of water systems has become more of an issue with water systems in the aftermath of events of September 11, 2001. Currently utilities in Tennessee are completing vulnerability assessment. Some utilities are implementing security plans and procedures that better integrate utilities with police and Emergency-911 personnel.

Telemetry systems or SCADA (Supervisory Control and Data Acquisition) system assist with monitoring and security of water systems. A telemetry system is a radio frequency or phone line system where a central control panel will monitor multiple locations. Remote sites such as pump stations, raw water pumps and water tanks are equipped with signaling devices. The control panel will check the remote sites one at a time on a pre-programmed interval. A failure is triggered by an event such as when a pump does not start or when the amps exceed the motor capacity. Without SCADA, water and wastewater departments do daily route inspections or rely on people to report an overflowing pump station or sewage backing up into a home.

Other security measures include pressure sensitive devices on ladders located on water storage tanks, motion detectors and flood lights, alarms, and real-time video cameras.

WATER RESOURCES FOR ECONOMIC DEVELOPMENT

The availability of adequate water flow and pressure in certain communities influences economic development. For example, a distribution company with high water pressure and flow requirements for fire protection will rule out locating in a community that cannot meet these requirements. In addition, communities need to plan for the future and provide developable sites with adequate infrastructure. Each community has different issues regarding the availability of adequate industrial land and adequate infrastructure.

WATER SERVICE

In 2010, 84.7 percent of the housing units in the First Tennessee Development District were served by public water (Table Four A).

The region as a whole has been doing a good job of extending water lines to areas of need. Still, there is additional need, especially in light of the problems with individual wells and springs going dry due to a drought or becoming contaminated.

A major factor limiting water line extensions is population density. When a utility looks at a line extension project, the revenue the project brings in should come close to covering the expense of providing water, interest expense on any loans, and depreciation. Thus extending a water line a mile to serve only 10 homes is not feasible even with a high percentage of the funds being grant.

The percent of the population on public water by county is as follows:

	Customers on <u>Water</u>	2010 <u>Population</u>	% Population <u>on Public Water</u>
Carter County	47,853	57,424	83.3%
Greene County	60,512	68,831	87.9%
Hancock County	2,044	6,819	30.0%
Hawkins County	42,221	56,833	74.3%
Johnson County	12,254	18,244	67.2%
Sullivan County	143,333	156,823	91.4%
Unicoi County	14,608	18,313	79.8%
Washington Co.	106,000	122,979	86.2%
FTDD	428,825	506,266	84.7%

Source: TDEC Water System Data Sheets, Contact with utilities, and FTDD data.

Sullivan County had the highest percent of its housing units on public water with 91.4 percent followed by Greene County with 87.9 percent and Washington County with 89.4 percent. Both Sullivan and Washington counties are more urban and the population density makes the extension of water lines more feasible.

Hancock County had the lowest percent of its housing units on public water with 30.0 percent followed by Johnson County at 67.2 percent. Hancock and Johnson County had the lowest population per square mile in the region and mountainous terrain. Extending new water lines is difficult in these situations due to cost per household. Hancock and Johnson County utilities also had to address the need to develop new water sources and maintain existing lines to existing customers, which delayed consideration of water line extension projects.

Water line extension projects are completed for several reasons. A community or utility may extend a water line to an industrial or commercial area. Water lines to residential areas are extended to replace wells or springs. Public water offers protection from bacteria contamination that is often found in a well or spring. Many homeowner wells in the region will test positive for some bacteria contamination unless an adequate and maintained filtration and disinfection system is in place.

The region has had increasing problems with e-coli bacteria in wells and springs. E-coli bacteria is one specific coliform bacteria and can be dangerous in that in high amounts it can cause serious illness.

High levels of certain minerals in water can also cause odor and taste problems. More importantly, health problems can result. Common mineral problems to test for in our area include iron, calcium (lime), sulfur, and manganese. Iron contamination is common in Johnson and Carter County. Sulfur and calcium contamination is widespread throughout the region.

Well and spring systems that go dry can present a hardship to residents. Due to periodic droughts, this problem has become more extensive. Current water line projects that address this hardship include:

- Treadway Community in Hancock County
- Sutherland Community of Johnson County
- Lady Lane in Washington County

Recently completed water line projects include:

- Greggtown Community Water Line by the City of Johnson City
- Bulldog Miller Road by the Town of Jonesborough
- Miningtown Road by the Brownlow Utility District
- Little Milligan/Fish Springs by the WRRWA

WASTEWATER RESOURCES

WASTEWATER TREATMENT PLANTS

Wastewater resources in the region impact economic development in a similar way to water resources. A community with a wastewater plant that can adequately handle industrial waste products at a lower cost has an advantage in attracting new business and industry. Several wastewater plants in the region were constructed for residential waste and would require either significant upgrades to handle industrial waste or a level of pre-treatment by an industry that would be cost prohibitive.

All wastewater plants are operated under discharge guidelines. The National Pollutant Discharge Elimination System (NPDES) permit gives the volume and discharge content limits that a wastewater facility can discharge into a body of water. Violations of the community's NPDES permit are grounds for fines. Chronic violations can result in a correction order from the Tennessee Department of Environment and Conservation (TDEC) and a moratorium on new connections.

Wastewater treatment plants in the region vary in their ability to provide adequate wastewater treatment and meet state and federal guidelines. The advantage of discharging into a river is that it is a large body of water and wastewater can readily dilute without severely impacting water life. The NPDES permit limits are usually less strict on a river. Usually large systems discharge into a river. Smaller systems ideally discharge into a river, but because of geography and cost considerations, this is not always feasible. Johnson City, Kingsport, Bristol, Elizabethton, Greeneville, Rogersville, Church Hill, and Erwin discharge into a river.

Smaller wastewater systems without access to a river discharge into streams or creeks. The disadvantage of discharging into a smaller body of water is that permit limits are stricter. Systems located on smaller streams such as Baileyton, Mosheim, Mount Carmel, Mountain City, and Jonesborough have less margin for error in meeting permit requirements as these systems discharge into a small stream. Several systems discharge wastewater into streams listed on the 303 (d) impaired stream list. Thus, secondary and potentially tertiary treatment is required of the wastewater, which results in higher costs.

Several sewer systems are connected to larger wastewater systems that can adequately treat wastewater. Bluff City connected to the Bristol sewer system in 1998. The Town of Unicoi has its wastewater treated by the Town of Erwin. Bulls Gap is connected to Mosheim. As regulation and treatment costs increase, the trend of smaller wastewater systems connecting to larger wastewater systems with adequate capacity is likely to continue.

Table Four B lists the design capacity, average daily demand, number of hookups, and estimated residents served for each wastewater system.

WASTEWATER SYSTEMS

Wastewater systems that strive to maintain their sewer lines and pump stations adequately also meet state and federal requirements more easily. The well-maintained systems have less likelihood of having by-passes of wastewater treatment due to a heavy rain event. A heavy rain event can increase the flow at a wastewater treatment plant 4-5 times normal flow if the system is poorly maintained.

Historically, many wastewater systems have addressed operations and maintenance issues as they occurred instead of taking a proactive approach. Federal guidelines are intended to change this approach. Capacity, management, operation, and maintenance (CMOM) is a program of the U.S. Environmental Protection Agency (EPA) to have wastewater systems to comprehensively operate their treatment plants and maintain their lines so as to best utilize wastewater infrastructure.

Most utilities prefer to install gravity sewer lines wherever feasible in order to reduce long-term maintenance to the system. Due to the hilly terrain of the region, pump stations are required to connect a gravity system in one drainage basin to another. Erwin is a community that has a drainage basin that has been ideal for gravity sewer.

Force mains have been installed in several communities in the region. The advantage of force mains is less installation costs. The disadvantage is that a service or grinder pump must be installed and maintained at each home or business. Force mains are adequate where the terrain dictates that a gravity system is not feasible or where there is a remote location without customers along the line route. Households located at elevations below a wastewater treatment plant also require a force main or a combination of a gravity system and force main system.

Several communities have wastewater systems that are primarily force main and pump systems. These include Baileyton, Bulls Gap, Mount Carmel, and Mosheim. Cost and to some extent terrain have dictated to a large extent that these systems use primarily force mains with a grinder pump at each home. However, some of these systems were designed to install force mains instead of gravity systems in order to lower the initial cost.

Water can enter a wastewater system through other means than normal flow. This additional flow can be significant to a system and impact its ability to adequately treat wastewater.

Inflow results from storm or surface water that may enter the sanitary sewer through roof leaders, clean-outs, foundation drains, sump pumps and cellars. Stormwater, a source of inflow, may also enter through older connections between the sanitary sewer and storm sewers and through defective manhole covers and seals. Inflow can also occur as rainwater follows the pipe trench around the sewer line back to the wastewater treatment plant.

Infiltration is storm or surface water that enters a sanitary sewer system from the ground through means such as defective pipes, pipe joints, damaged lateral connections or manhole walls. Infiltration is most often related to a high groundwater table level, but can also be influenced by storms and leaking water mains.

Several utilities in the region have older sewer lines that have not been properly maintained over the years. Many systems also have lines that were not properly installed by a subdivision developer. As a result, these utilities are having to complete extensive line rehabilitation. Several sewer systems in the region have completed a major sewer line rehabilitation project in the past two years. Unfortunately, several systems have a long way to go to address the extent of the problem. While one part of the system is repaired, oftentimes the inflow issues move to another part of the system that is in need of repair. For example, after several sewer line rehab projects that did not show significant results, the City of Sneedville saw a significant reduction in infiltration and inflow from its last project. Common sewer line repair methods include line replacement, sliplining, and pipebursting.

Smaller systems with a limited number of customers to share the costs have a more difficult time performing maintenance of their system. This problem is due in part to their desire not to increase already high sewer rates as compared to larger communities.

SEWER SERVICE

An area with high population density and small lot sizes will typically have trouble with septic tank systems after 15-20 years. The life cycle of a septic tank will vary by type of tank, soil type, water table, amount of wastewater discharge, and amount of rock in area. Failing septic tanks can present odor and health problems.

The soils of the region vary with regard to adequate percolation of soils for septic tanks. Sullivan County and Hawkins County have the most difficulty with lots passing a percolation test. The karst geology of the region permits effluent from failing septic tanks to enter the groundwater quickly. This problem is part of the reason that e-coli bacteria contaminates private drinking water wells and springs.

Industrial and commercial businesses can generate more wastewater and therefore prefer being on a public sewer system. Manufacturers especially want to be on sewer service so that wastewater can be properly treated off-site instead of risking inappropriate wastewater being placed in an on-site septic system.

The region had 40.9 percent of its population on public sewer systems in 2011. Some sewer systems in the region have been under commissioner orders from the State of Tennessee, Department of Environment and Conservation (TDEC) due to by-passes of wastewater treatment plants in high rain events. As a result of the commissioner orders, a moratorium on additional hookups has been in place while the wastewater system was brought into compliance with the NPDES permit. In addition, some municipalities

focused on maintaining the wastewater system within their boundaries and have not extended sewer lines to any growth areas outside their boundaries.

The percent of the population on public sewer by county is as follows:

	Customers on <u>Sewer</u>	2010 <u>Population</u>	% Population <u>on Public Sewer</u>
Carter County	14,100	57,424	24.6%
Greene County	17,498	68,831	25.4%
Hancock County	1,094	6,819	16.0%
Hawkins County	17,741	56,833	31.2%
Johnson County	3,433	18,244	18.8%
Sullivan County	75,330	156,823	48.0%
Unicoi County	7,397	18,313	40.4%
Washington Co.	70,553	122,979	57.4%
FTDD	207,146	506,266	40.9%

Source: Contact with utilities and FTDD data.

The region had a decline in the percent of housing units on public sewer from 42.7% in 2000 to 40.9% in 2011. In these counties, the actual number of housing units on sewer increased, however the increase did not keep up with the population increase of the county. Many new homes were built outside city limits and were served by septic systems. In many cases, a septic system was an excellent solution. However, in some cases these homes were in the vicinity of public sewer.

Hancock County had the lowest percentage of its housing units on public sewer with 16.0 percent followed by Johnson County at 18.8 percent. Hancock and Johnson County had the lowest population per square mile in the region. Mountainous terrain in these counties limits the extension of sewer lines due to feasibility. In addition, utilities in these counties had to address issues with the capacity of its wastewater treatment plant and infiltration and inflow problems into existing lines.

Washington County had the highest percentage of its housing population on sewer at 57.4 percent. Sullivan County had the second highest percent of its housing units on public sewer at 48.0 percent. As Sullivan County has the highest population per square mile in the region and the poor soils in many areas, sewer line extensions have been positive for development of the county.

AIRPORTS

Northeast Tennessee is served by four general aviation airports and one commercial airport. The Tri-Cities Regional Airport has commercial services to several major airport hubs. The Tri-Cities Regional Airport is also designated as a Foreign Trade Zone and has a separate air cargo facility. The Tri-Cities Regional Airport has undergone several improvements to its terminal and runway in recent years. Currently, there is a taxi way improvement project. The Tri-Cities Regional Airport recently changed to an authority from public ownership, which allows it more flexibility to manage its business in a timely manner.

AIRPORT STATISTICS

Name	Runway Length	Elevation
Elizabethton Municipal	4,000'	1585'
Greeneville-Greene County Municipal	6,302'	1608'
Hawkins County	3,500'	1255'
Johnson City	3,000'	1550'
Johnson County	4,500'	2240'
Tri-Cities Regional Airport		
First Runway	8,000'	1519'
Second Runway	4,447'	1519'

Source: Airports in Tennessee. www.aircraft-charter-world.com (Accessed 5/18/12).

INDUSTRIAL PARKS

Available business and industrial land is a key factor to future development of the manufacturing sector in the region. Several counties are in critical need of new property to market their county. Other counties will be facing a critical land shortage in the next five years if land issues are not addressed in the near term.

Business and industrial properties are marketed by the Northeast Tennessee Valley Regional Industrial Development Association, a partnership of local economic development boards, the Tennessee Valley Authority, local power boards, and the State of Tennessee.

There are currently 24 listed industrial sites in Northeast Tennessee. These industrial sites range from 1 available acre to 300 acres. The ownership of the industrial parks ranges from public ownership to optioned land to private ownership.

While most sites in the region can be marketed to many types of firms, there are limitations. Infrastructure ranges from full utilities to limited utilities. Some industrial parks target manufacturing and distribution firms while other business parks have a mix of tenants in the data processing, medical support services, and business services. The acreage in these industrial parks may have constraints due to topography, utility limitations, or limited acreage of the site. Several industrial parks are established sites with several firms already located in the industrial park. Other industrial sites have no tenants and are privately held.

A list of the industrial parks and sites by county is part of Table Four C. Counties in the region are facing different issues regarding industrial land. For example, some counties have limited industrial sites available at this time and are pursuing sites for new industrial parks. Other counties have an inventory of industrial sites for the next few years, but have to address long-term needs. Finding new and affordable industrial land in several counties is difficult as urbanization of some counties is driving up land cost. The terrain of the region presents an additional challenge when evaluating industrial sites.

ROADS

Northeast Tennessee has interstates 81 and 26 dissecting the region. Being near a major interstate is a common business location factor. Most of the region has close access with the exception of Hancock and Johnson counties. The U.S. and State highway system is fairly well defined in the region, but upgrades and new routes are a continual need. While Tennessee is one of the better rated transportation networks in the U.S., road and bridge maintenance is becoming more important as the transportation infrastructure ages. A major issue in highway maintenance and construction is that the cost of asphalt has increased significantly as oil prices have increased. So the rising paving cost is “not my fault or your fault, but the asphalt”.

Four regional transportation planning organizations exist in the region. These organizations provide a process that addresses the transportation needs of the region. The process requires that the transportation planning organizations work with local, state and federal agencies and the general public to develop a transportation program.

Johnson City, Kingsport and Bristol are designated as metropolitan transportation organizations. The First Tennessee Rural Planning Organization serves the rural areas.

The Johnson City Metropolitan Transportation Planning Organization (MTPO) serves the area that includes Elizabethton, Jonesborough, Johnson City and part of the Town of Unicoi, as well as the urbanized areas of Carter and Washington counties.

Kingsport MTPO serves Kingsport, Mt Carmel, Church Hill, Weber City, Gate City, and portions of Sullivan County, Hawkins County, Washington County, and Scott County.

Bristol MTPO serves the City of Bristol Tennessee, the City of Bristol Virginia, Bluff City, Tennessee, and certain surrounding areas of Sullivan County, Tennessee, and Washington County, Virginia.

The First Tennessee Development District Rural Planning Organization serves all of Greene, Hancock and Johnson Counties and the parts of Carter, Hawkins, Sullivan, Unicoi and Washington counties not served by the MTPO organizations.

Each of these organizations has a process of ranking projects for priority that is subject to change over time.

PLANNING

Most communities in the region have zoning and planning commissions. Some larger communities have their own staff while smaller communities use the planning staff of the First Tennessee Development District.

Planning staffs are responsible for professional planning work and are capable of preparing various community plans, annexation studies, working with and advising local officials (including planning commissions, boards of zoning appeals, design review commissions, and legislative bodies) on planning issues or problems. These organizations provide mapping using Geographic Information Systems (GIS).

Twenty-one local governments are entered into planning advisory contracts with the First Tennessee Development District including:

7 Counties and 14 Cities

Carter County; Elizabethton, Watauga,

Cocke County; Newport

Greene County; Baileyton, Greeneville, Mosheim, Tusculum

Hawkins County; Bulls Gap, Church Hill, Rogersville, Surgoinsville

Johnson County; Mountain City

Unicoi County; Erwin, Unicoi (town)

Washington County

BROADBAND

Communications infrastructure in the region is considered excellent in the metropolitan areas. Some of the services offered include:

- Redundant Fiber Optics Cable
- Asynchronous Transfer Mode
- SONET Ring (Self healing OC-12, OC-48) – offering ultra-high bandwidth speeds
- DSL, Cable Internet, ISDN
- Multi-carrier local telecom, digital and analog wireless service

An excellent resource to evaluate the availability and type of business broadband service is the Regional Broadband Map at the website of the Northeast Tennessee Technology Council. The address is:

<http://www.netvaly.org/broadband/map.html>

Another good resource to evaluate home broadband service is the Connected Tennessee website:

<http://www.connectedtn.org/mapping/state>

While excellent service is available in metropolitan areas, rural areas are lacking broadband services. Mobile internet is filling in some of the gaps as this service continues to expand in the region. Still, rural area education and work-at-home opportunities area impacted by the availability of good service.

GIS

First Tennessee Development District's Geographic Information System (GIS) program was created to provide mapping and spatial analyses to City and County Governments within our District. These capabilities will provide an additional tool to local governments and other entities in decision making processes related to environmental management, solid waste programs, housing rehabilitation, water and sewer services and transportation.

GIS capabilities allow several datasets to be combined into one and produce maps that relay necessary information. GIS links spatial data with tabular data files and this information is then displayed in map format. Data is stored in layers, which allows the users to view the data in several formats.

ELECTRICITY

Supplied by the municipal and cooperative distributors of the Tennessee Valley Authority (TVA) and by American Electric Power, TVA's electricity rates are well below the national average:

- Industrial rates are 26% lower
- Commercial rates are 15% lower
- Residential rates are 25% lower

Table Four D lists consumption of electricity by residential, industrial, and commercial sectors for each power distributor in the region.

NATURAL GAS

Atmos Energy is the largest natural gas supplier in the U.S. and is the major supplier to the region. Services available include:

- Lines are 12" and smaller
- 1030 BTU per cubic foot
- Firm gas available up to 60,000 therms per month
- Large volume available with prior notification
- Interruptible gas available

The region has three public gas utilities: Hawkins County Gas Utility, Powell Valley Gas Utility District and Unicoi County Gas Utility District.

NATURAL DISASTERS

The region has experienced several natural disasters that has made it realize the susceptibility of infrastructure to these events. Tornadoes came through the area in May of 2011 and significant damage occurred in Greene, Washington and Johnson counties. Infrastructure directly impacted included electric, telephone and road. Indirectly, extensive debris was an issue requiring major clean up.

During the past ten years, the region has experienced significant droughts that have affected several water systems in the region. Water utilities have been impacted by running out of water and reaching levels of water reserves that were too close to running out. As a result, utilities have made and are exploring options to improve their water intakes or connect with other utility districts.

Flooding events in the Roan Mountain and Hampton communities in Carter County in 1998 and in the Horse Creek community in Greene County in 2001 exposed the region's vulnerability due to its varying terrain. Changes were made in local governments. Land in floodplains was purchased by county governments so that

homes would not be rebuilt. Zoning guidelines were changed, bridges were cleared of debris annually, water utilities were relocated and better anchored.

PUBLIC RECREATION LANDS

The region has had three major public land acquisitions that provide recreation and tourism opportunities, the Doe Mountain Recreation Area, Rocky Fork Recreation Area, and Tweetsie Railroad. These lands combined with the Cherokee National Forest, and municipal parks such as Bays Mountain, Buffalo Mountain, and Steele Creek give the region a solid ecotourism base.

In 2012, Johnson County was part of the effort that led to the recent purchase of 8,600 acres of land by the State of Tennessee for the Doe Mountain Recreation Area. Land that was likely destined for timber harvesting is now in State hands. Doe Mountain presents a great opportunity for conservation, recreation and economic development. Doe Mountain is ideal for outdoor recreation such as mountain biking, horseback riding and all terrain vehicle trails. In turn, these recreation uses can lead to development of properties near the Doe Mountain for lodging and bring retail tax dollars into Johnson County.

Over the last four years, nearly 10,000 acres has been purchased in the Rocky Fork area of Unicoi and Greene County that will be added to the Cherokee National Forest.

These lands maintain the scenic beauty of the area and protect habitats for plants and wildlife. Recreation opportunities will exist within the area. In an era of losing thousands of acres of land nationally to development, a trend of preserving land for the future is a positive development. These efforts could not have happened without the cooperation of local, state and federal government and agencies such as the Nature Conservancy and the Conservation Fund.

The City of Johnson City purchased a 10-mile stretch of land from Genessee & Wyoming Railroad in 2011 with the intent of developing a rails-to-trail recreation trail. A master plan for the project is currently ongoing.

STRATEGIC FINDINGS AND ANALYSIS

Strategic Finding 5. Upgrade Water & Sewer Infrastructure. Water and wastewater infrastructure provides the opportunity for economic development through having the right kind of infrastructure at the right place. The natural environment is kept cleaner when wastewater is properly disposed of and not allowed to continue in a situation where failing septic systems are affecting ground and surface water. Improving health care is tied to having healthy drinking water and not being exposed to improperly treated wastewater.

Increased regulatory requirements and raising construction costs combined with greater difficulty in obtaining funding has created an opportunity for the region to cooperate on projects on a regional scale. Efforts such as the Watauga Regional Water Authority to create a regional water system that will provide water for the long term is one example of the cooperation that will be required in the future. The need for proper maintenance of the aging water and sewer infrastructure needs to be brought to the forefront as a regional issue.

Security of water systems has become a priority since 9/11 and utilities are using technology and better construction methods to improve the systems.

Strategic Finding 6. Public Land for Economic Development. A threat to the region's manufacturing base is the lack of available land in some counties to meet the long-term needs of the region in developing businesses in faster growing industries.

The **manufacturing** sector had a net loss of jobs during the decade. Manufacturing employment has declined on a national level over the long term due to several factors. One major factor is that manufacturers have become more efficient and can make more products with fewer employees. This trend is expected to continue in the future. Manufacturing remains a primary sector for adding value to the national economy. While manufacturing employment may be decreasing, employment in the sectors supported partly by manufacturing, such as software development and accounting, are increasing.

The Northeast Tennessee region should recognize that manufacturing is a strength of the region because manufacturing business owners are innovative, and the labor force is highly productive in this sector. Economic development efforts continue to direct resources toward growth industries that provide well-paying jobs. However, the region needs to realize that manufacturing will not be an employment growth sector in the next ten years.

Strategic Finding 7. Better Utilize Transportation Network for Economic and Community Development. Potential threats include an increase of traffic resulting in more accidents and congestion. In addition, more traffic increases pollution and ozone levels, already concerns for the region.

Transportation has benefited from the region being within 600 miles of 70 percent of the U.S. population. The region is ideally suited for companies serving points east of the Mississippi River. The region is traversed by Interstate 26 and Interstate 81.

The transportation network will present the region with opportunities to develop manufacturing, distribution, and transportation related businesses. Increased traffic will provide additional tourism opportunities.

A welcome center was opened in Unicoi County and the Gray fossil site expanded are examples of the public sector efforts to develop tourism opportunities.

Because the region is in an ideal location for **distribution**, the development of the Greater Tri-Cities Foreign Trade Zone and Air Cargo Center at the Tri-Cities Regional Airport are two opportunities for the region to enhance its transportation sector. The Tri-Cities Regional Airport is continually making improvements to its facility.

Rural areas of the region continue to struggle with the losses in traditional job sectors such as manufacturing and agriculture. The lack of adequate transportation infrastructure in some of these rural areas further complicates the situation. However, rural areas often have a lifestyle attractive to retirees and entrepreneurs who can make a living less determined by location. In order to support these individuals, adequate communication systems are required.

The regional effort to promote **tourism** through the Northeast Tennessee Tourism Association is a strength of the area. Specific examples of regional tourism promotion include the Tales and Trails theme and the Birthplace of Country Music Alliance (BCMA). The BCMA is nearly complete with its \$10.57 million capital campaign. The Birthplace of Country Music Cultural Heritage Center, in affiliation with the Smithsonian Institute, will tell the story of the region's musical heritage. From the Bristol Sessions and beyond, the region continues to influence music around the world. History and heritage are two strengths of the region's tourism industry. Renovation of downtown historic areas is becoming increasingly important to the region's tourism sector. The transportation network is important to tourism as a lot of our area tourism is based on day trips around the region.

The region usually ranks favorably in **quality of life** studies and is considered by many to be a good place to visit and live. The cost of living in the region compares favorably to the nation. A well maintained transportation network without a lot of congestion contributes to this quality of life.

Strategic Finding 8. Expand and Upgrade Telecommunications Network. The manner in which the region addresses opportunities in the telecommunications sector will impact the region's ability to create jobs. The region can fall behind other areas or it can close the gap. Public sector and education efforts can impact this trend.

Telecommunications is a continually changing field that impacts the region's ability to create and attract jobs. While the telecommunications infrastructure and service in the Tri-Cities area is considered adequate, rural areas often lack basic telecommunications infrastructure. The capability of the region's businesses to offer telecommunication services is mixed, with some excellent companies, yet gaps in services when compared to other areas.

Telecommunications infrastructure is very important to economic development within the region. Both Citi Group, Sprint Telecenters and Cingular Wireless, being two major employers in the region, rely on up-to-date infrastructure. In addition, existing sectors

including health care, business services, education, and manufacturing benefit from improved infrastructure.

A trend toward a greater reliance on mobile technology and less on fixed computer and phone services will change the telecommunications mix in future years. The expansion of 3G and 4G service into rural areas has made this technology accessible to a larger part of the region's population.

A public sector effort to improve the region's telecommunications capability is being led by the Northeast Tennessee Technology Council, a non-profit organization whose purpose is to educate, engage and support a region of technology-based businesses and entrepreneurs. The council works closely with the regional economic development collaborative.

A threat to the region's economy is security. Efforts to improve the security of the region are being led by the emergency management/civil defense agencies of the region with the aid of telecommunications technology.

Strategic Finding 9. Long-term Response to Natural Disasters. The region has traditionally responded very well to natural disaster events with excellent emergency management services and community response to help families and businesses in need. Coordination by local governments with the affected communities and the myriad of public agencies involved in the process can be very complex and time consuming.

An area that the region can improve is in making its infrastructure more disaster resistant. For example, water and wastewater treatment facilities can be designed to better accommodate a flood or drought period. Water distribution lines can be designed with redundancy and to loop in the event water is disrupted from one direction. The same redundancy principle applies to telecommunications and electricity.

Strategic Finding 10. Enhance Environmental Assets. Finding a way to maintain these views and waterways for future generations while accommodating development will be a challenge.

The Northeast Tennessee region benefits from a **four-season climate, scenic mountains, water resources,** and a **good system of trails and parks.** These attributes contribute to the region's **quality of life** being attractive.

Weaknesses in the region include **poor land use planning** in certain areas, **wastewater systems** that have not kept up with population growth, and **limited funding** to address infrastructure and environmental issues. Land use planning is becoming more of an issue because of in-migration. Most in-migration is a result of people with jobs that allow them to live where they choose and retirees that are attracted by the mountain views, cost of living, and four-season climate. Ironically, this impact is leading to higher housing costs and development on the mountain views that attract people in the first place.

A type of planning called **Livable Regions and Communities** has been gaining ground where comprehensive planning is done on a more regional level with a focus on sustainability. Emphasis is placed on integrating jobs close to homes, having aging in place housing options, providing health and wellness opportunities. Community livability plans link transportation, housing, community and economic development, and environmental needs.

The difficulty of implementing these type plans is that a portion of the region's population may not want to subject itself to the planning process that emphasizes an overall goal of achieving a better community, but risks alienating those that do not like the impact on their land.

Strategic Finding 11. Meeting New Regulations. Another threat to the region's natural environment is that utilities will be **meeting new regulations** regarding drinking water and wastewater. Many smaller utilities are having a difficult time meeting new guidelines and funding projects to address their needs. Opportunities in the region include continued **solid waste planning** so that the region meets the needs of its citizens and businesses.

Another opportunity exists for the region to meet new **stormwater regulations** in a coordinated and cost effective manner. The new stormwater regulations place a burden on higher density population areas. Funding to implement these new regulations is difficult to find. Some communities in the region have added a stormwater tax to utility bills. Several communities in the region are working together to meet the new regulations by addressing land areas that may be located in one locality, but drain into another locality.

An opportunity is for communities to work together so that they continue to comply with the **growth boundaries legislation** of the State of Tennessee. Ideally, the legislation will assist communities in planning for annexations in a coordinated manner. At its worst, the legislation results in stalemates among communities regarding disputed areas.

The potential for **brownfields reclamation** projects presents an opportunity for communities to seek funding to place unproductive land back into a productive use.

Another opportunity is the development of **regional water projects** that use river sources to provide drinking water. The First Utility District in Hawkins County has developed a water treatment facility on the Holston River that will be able to serve a large section of eastern Hawkins County.

Several utilities in Carter County have worked together to build a water treatment plant and water system that meets long-term needs. The water source is the Watauga River. Currently, utilities receive water from wells and springs that will not be able to meet the

long-term needs of Carter County for its population and economic development opportunities.

Ozone and particulate matter guidelines affect economic and community development in Northeast Tennessee. Fortunately, the region has a very strong Ozone Action Partnership to coordinate action by the public and private sector on a regional basis. New stricter guidelines may be proposed that county impact the region's ability to comply with ozone and particulate matter guidelines.

**TABLE FOUR A
WATER SYSTEM INFORMATION**

System (Data Year)	Population Served	Design Capacity (MGD)	Average Daily Pumpage (MGD) **	Peak Daily Pumpage (MGD) **	Distrib. Storage (MG)
CARTER COUNTY					
Elizabethton (11)	24,717	6.55	5.05	6.45	6.98
First UD of Carter Co. (10)	7,661	1.49	0.92	1.41	2.51
Hampton UD (10)	3,631	1.50	1.07	1.26	0.80
Peters Hollow (11)	145	0.06	0.03	0.04	0.02
Roan Mtn. UD (10)	870	0.69	0.13	0.25	0.31
Siam UD (10)	2,585	0.29	0.25	0.31	0.20
South Elizabethton UD (11)	5,090	Prc. (2)	0.47	0.53	0.85
WRRWA - N. Elizabethton – (10)	1,254	Prc. (1)	0.16	0.22	0.20
WRRWA – Little Milligan (12)	400	.28	0.05	0.06	0.10
WRRWA – Wilbur Lake Water Pl. (12)		5.0			
Adjustment **	1,500		- 0.63	- 0.75	
Carter Co. Totals	47,853	15.86	7.50	9.78	11.97
GREENE COUNTY					
Chuckey UD (10)	9,858	Prc. (3)	0.92	2.04	1.50
Cross Anchor UD10	7,442	Prc. (4)	0.70	0.98	0.95
Glen Hills UD (10)	12,624	Prc. (5)	1.06	1.64	2.01
Greeneville Water & Light Comm. (11)	15,498	16.0	8.62	10.83	6.90
Mosheim UD (10)	1,771	Prc. (6)	0.26	0.74	0.50
N. Greene UD (10)	4,822	0.72	0.50	0.88	1.16
Old Knox Highway UD (12)	8,497	Prc. (7)	1.01	1.31	1.67
Adjustment**	0		-3.95	- 6.71	
Greene Co. Totals	60,512	16.72	9.12	11.71	14.69

System (Data Year)	Population Served	Design Capacity (MGD)	Average Daily Pumpage (MGD) **	Peak Daily Pumpage (MGD) **	Distrib. Storage (MG)
HANCOCK CO.					
Sneedville UD (11)	2,044	0.54	0.22	0.37	0.50
HAWKINS CO.					
First UD of Hawkins County (11)	18,630	5.30	1.70	3.45	2.86
Lakeview UD (11)	3,511	0.68	0.25	0.29	0.66
Mid-Hawkins Co. UD (10)	620	0.16	0.04	0.07	0.11
Mooreburg UD 11	1,186	0.17	0.14	0.20	0.25
New Canton UD 11	507	Prc. (8)	0.03	0.09	0.00
Persia UD (11)	4,423	0.81	0.24	0.44	0.87
Rogersville (12)	7,212	2.50	1.08	1.66	2.50
Striggersville UD 10	1,275	Prch. (9)	0.10	0.23	0.00
Surgoinsville UD 12	2,357	0.34/ Prc. (10)	0.42	0.52	1.19
Adjustment **	2,500		-0.21	-0.50	
Hawkins Co. Tot.	42,221	9.96	3.79	6.45	8.44
JOHNSON CO.					
Brownlow UD (11)	435	0.52	0.07	0.10	0.00
Carderview UD (10)	940	0.10	0.04	0.09	0.80
Cold Springs UD 11	767	0.77	0.04	0.18	0.30
Dry Run UD (12)	724	Prc. (11)	0.02	0.05	0.10
Mountain City (10)	9,688	3.6	1.81	2.72	3.83
Adjustment *	-300		-0.02	-0.05	
Johnson Co. Tot.	12,254	4.99	1.96	3.09	5.03
SULLIVAN CO.					
Bloomington UD (11)	11,753	1.84	1.22	1.76	1.28
Blountville UD (11)	12,623	Prc. (12)	1.12	1.53	1.24
Bluff City (11)	2,428	0.33	0.24	0.27	0.30
Bristol (12)	29,362	10.00	5.65	8.07	10.15
Bristol-Bluff City UD (11)	5,254	2.40	1.02	1.70	2.0

System (Data Year)	Population Served	Design Capacity (MGD)	Average Daily Pumpage (MGD) **	Peak Daily Pumpage (MGD) **	Distrib. Storage (MG)
Holston UD (11)	2,432	Prc. (14)	0.13	0.39	0.21
Intermont UD (10)	1,109	Prc. (15)	0.06	0.13	0.33
Jacobs Cr. J.C. (10)	300	0.08	0.05	0.09	0.10
Kingsport (12)	71,399	29.95	14.55	17.47	18.00
Robindale WA (10)	50	Unknown	0.01	0.01	0.00
South Bristol / (10) Weaver Pike UD	5,336	Prc. (16)	0.47	1.85	1.00
Tri-Cities/Sullivan UD (04)	3,287	Prc. (17)	0.32	0.38	0.54
Adjustment *	-2,000		-2.10	-4.28	
Sullivan Co. Totals	143,333	44.60	21.52	29.37	33.87
UNICOI COUNTY					
Erwin Utilities (12)	10,450	4.65	2.23	2.96	2.42
Unicoi UD (10)	3,858	Prc. (18)	0.43	0.66	0.62
Adjustment **	300		-0.43	-0.66	
Unicoi Co. Totals	14,608	4.65	2.23	2.96	3.04
WASHINGTON CO.					
Johnson City (11)	85,800	28.50	17.51	22.60	14.56
Jonesborough (11)	24,200	4.40	3.45	3.92	5.04
Adjustment**	4,000				
Wash. Co. Totals	106,000	32.90	20.96	26.52	19.60
FTDD TOTAL	428,825	130.22	67.30	90.25	97.14

SOURCE: TDEC PUBLIC WATER SYSTEM DATA. FTDD INFORMATION, CENSUS DATA, AND UTILITY INFORMATION.

* Customer adjustments have been made for utility districts that serve two counties or for residential facilities, and updated census information:

- Carter County residents are also served by the City of Johnson City and the Carderview Utility District.
- Hawkins County residents are also served by the City of Kingsport and Russellville-Whitesburg Utility District.
- Johnson County. A deduction is made as the Carderview Utility District has customers in Carter County.

- Sullivan County residents are also served by the City of Johnson City and Washington County Service Authority. A deduction is made as the City of Kingsport serves Hawkins County and Washington County residents.
- Unicoi County residents are also served by the City of Johnson City.
- Washington County. The City of Johnson City also serves Carter County, Sullivan County and Unicoi County. The City of Kingsport serves a portion of Washington County.

** Water systems that purchase water from another system are not included in the average daily demand and peak daily demand numbers in order to avoid redundancy. In addition, several utility districts have a primary source, but purchase water from other utility districts on an as needed basis.

- (1) WRRWA, North Elizabethton section, purchases water from Elizabethton.
- (2) South Elizabethton U.D. purchases water from Hampton UD & Elizabethton.
- (3) Chuckey purchases water from Greeneville and Jonesborough
- (4) Cross Anchor U.D. purchases water from Greeneville.
- (5) Glen Hills U.D. purchases water from Greeneville.
- (6) Mosheim U.D. purchases water from Greeneville.
- (7) Old Knox U.D. purchases water from Greeneville
- (8) New Canton U.D. purchases water from First U.D. of Hawkins Co.
- (9) Striggersville U.D. and Lakeview U.D. purchase water from Rogersville.
- (10) Surgoinsville U.D. produces water and purchases water from First UD and Rogersville.
- (11) Dry Run U.D. purchases water from the Town of Mountain City.
- (12) Blountville U.D. purchases water from the City of Bristol and Bristol-Bluff City
- (13) Holston U.D. purchases water from the City of Bristol.
- (14) Intermont U.D. purchases water from the City of Bristol.
- (15) South Bristol-Weaver Pike U.D. purchases water from the City of Bristol and Bristol-Bluff City U.D.
- (16) Tri-Cities/Sullivan U.D. purchases water from Bristol-Bluff City U.D.
- (17) Unicoi U.D. purchases water from Erwin & Johnson City.

**TABLE FOUR B
FIRST TENNESSEE DEVELOPMENT DISTRICT
WASTEWATER TREATMENT PLANTS & SYSTEMS**

Community *	Design Capacity (MGD) **	Average Daily Demand (MGD)	Number of Hookups ***	Est. # of Residential Persons Served
CARTER CO.				
Elizabethton (10)	3.5	2.31	5,823	12,600
Adjustment				1,500
Carter Co. Total	3.5	2.31	5,823	14,100
GREENE CO.				
Baileyton (11)	0.10	0.09	244	447
Greeneville (10)	7.00	3.20	7,233	13,498
Mosheim (10)	0.98	0.57	1,507	3,553
Greene Co. Total	8.08	3.86	8,984	17,498
HANCOCK CO.				
Sneedville (10)	0.15	0.15	631	1,094
Hancock Co. Total				1,094
HAWKINS CO.				
Bulls Gap (10)	Connected to Mosheim		378	690
Church Hill (12)	2.50	0.60	2,429	5,344
Mount Carmel (11)	0.47	0.29	1,943	4,377
Rogersville (12)	1.30	0.85	2,300	4,830
Adjustment			1,190	2,500
Hawkins Co. Total	4.27	1.74	7,050	17,741
JOHNSON CO.				
Mountain City (09)	3.00	1.05	874	1,833
SULLIVAN CO.				
Bluff City (12)	Connected to Bristol		493	1,390
Bristol TN (12)	15.00	10.30	10,078	23,840
Kingsport (11)	16.00	10.08	22,000	51,100
Adjustment			- 476	- 1,000
Sullivan Co. Total	31.00	20.38	32,095	75,330
UNICOI COUNTY				
Erwin (11)	4.00	1.57	3,356	7,397
Unicoi (12)	Connected to Erwin			
Unicoi Co. Total	4.00	1.57	3,356	7,397

Community *	Design Capacity (MGD) **	Average Daily Demand (MGD)	Number of Hookups ***	Est. # of Residential Persons Served
WASHINGTON CO.				
Johnson City (12)	22.25	13.50	25,033	68,253
Jonesborough (12)	0.50	0.75	3,000	6,300
Adjustment			- 1,905	- 4,000
Washington Total	22.75	14.25	26,128	70,553
DISTRICT	76.75	45.31	84,941	205,546

The period covered by the data was usually a twelve-month period, but varied in some instances.

** Mechanical design capacity, listed in this column, is the amount of flow the wastewater treatment plant can process on a given day. Several wastewater treatment plants have a hydraulic design capacity higher than the mechanical design capacity. Hydraulic design capacity is higher due to surge basins and equalization basins that can hold flow during a rain event for processing at a later time. For example, Rogersville has a mechanical design capacity of 1.3 MGD and a hydraulic design capacity of 2.0 MGD.

*** Includes residential, commercial, and industrial hookups.

**** Customer adjustments have been made for utility districts that serve two counties or for residential facilities, and updated census information:
 Carter County residents are also served by the City of Johnson City.
 Hawkins County residents are also served by the City of Kingsport.
 Sullivan County residents are also served by the City of Johnson City.
 The City of Johnson City also serves Carter County and Sullivan County.

**TABLE FOUR C
INDUSTRIAL PARKS AND INDUSTRIAL SITES**

<u>Industrial Park</u>	----- Acres -----		<u>Ownership</u>
	<u>Min. Size</u>	<u>Max. Size</u>	
Carter County None Listed			
Greene County			
Baileyton Site	270	270	Private
Bulls Gap Site	25	25	Private
Elk Creek Industrial Park	5	60	Private
Exit 23 Site	5	60	Public
Fortner Site	60	60	Public
Florida Property	17.5	17.5	Private
Hardin Industrial Park	10	135	Public
Hardin Industrial Park, Ph. II	5	20	Public
Hancock County			
Hancock County Industrial Park	3	38	Public
Hawkins County			
Phipps Bend Industrial District	5	250	Public
Johnson County			
Johnson County Industrial Park	4	40	Public
Sullivan County			
Aviation Park I	5	35	Public
Bailey Property	10	85	Private
Bristol Business Park	5	82	Public
Bristol Industrial Park	100	100	Public
Bristol Weaver Pk. Partnership Park II	10	223	Private
Gateway Commerce Park	5	60	Public
General Shale Site	72	72	Private
Mead Site	30	30	Private
Muddy Creek, Partnership One Park	5	80	Public
NE TN Business Park	5	150	Public
Tri-County Industrial Park	41	41	Public

<u>Industrial Park</u>	----- Acres -----		<u>Ownership</u>
	<u>Min. Size</u>	<u>Max. Size</u>	
Unicoi County			
None Listed			
Washington County			
Washington County Industrial Park	5	25	Public
Woodlyn Road Site	20	47	Private

SOURCE: Tennessee Valley Authority (5/18/12). WWW.tvasites.com

TABLE FOUR D
Class of Ownership, Number of Consumers, Sales, Revenue, and
Average Retail Price by State and Utility: All Sectors, 2010

Entity	State	Class of Ownership	Number of Consumers	Sales (megawatthours)	Revenue (thousand dollars)	Average Retail Price (cents/kWh)
Bristol City TN Essential Services	TN	Public	33,040	1,020,426	81,350	7.97
Elizabethton Electric	TN	Public	25,861	567,936	52,202	9.19
Erwin Utilities	TN	Public	9,024	248,696	22,168	8.91
Greeneville Light & Power	TN	Public	37,770	1,176,429	100,025	8.50
Holston Electric Coop, Inc	TN	Cooperative	30,084	827,769	69,617	8.41
Johnson City Power Board	TN	Public	75,350	2,016,882	186,537	9.25
Appalachian Electric Power (Kingsport)	TN	Investor Owned	47,181	2,240,059	151,937	6.78
Mountain Electric Coop, Inc	TN	Cooperative	18,239	275,988	27,120	9.83
Powell Valley Electric Coop	TN	Cooperative	22,306	428,648	40,278	9.40

Source: U.S. Department of Energy. Energy Information Administration, Electric Sales and Revenue, <http://www.eia.gov/electricity/data>. (Accessed June 8, 2012).

CHAPTER FIVE FINANCIAL RESOURCES

The ability of a community to make major investments in infrastructure and economic development is constrained by its financial position and tax base. Table 5 A is the Tax Financed Indexes used to determine funding rates of local governments by the Tennessee Department of Economic and Community Development. This measure attempts to assess a community's ability to raise funds locally, relative to other communities. While making a major investment involves several factors, the index provides a relative measure to compare the community's ability to provide funding for infrastructure and economic development.

An index value over 100 indicates that the community has more potential to fund a major investment than the average Tennessee Community. A value under 100 indicates that the community has less ability to fund investments compared to other Tennessee communities.

STRATEGIC FINDINGS

Strategic Finding 12. Government and Social Services. The region will be facing many problems without a strong volunteer network, law enforcement, and proper regulation of federal, state and local laws. Area governments that are proactive to change instead of reactive will be better positioned to maintain and obtain the quality of life for its citizens.

A strength of the region is its level of **volunteerism** through churches, social service programs, fire departments, and hospitals. A threat is that the number of volunteers is declining in most communities. An example being volunteer fire departments are having a difficult time finding members to staff the fire departments in the daytime as most volunteers have jobs either outside the area or where they cannot leave. When the region had more of an agricultural economy, getting volunteers during the daytime was less of an issue.

Another strength of the region is its relatively **low crime rate** compared to other metropolitan and rural areas in the nation. The region consistently ranks low in crime rate compared to other metropolitan areas in the state and nation.

Still, crime is a problem in the region. The demand for a strong police force remains high due to new crime events, drug enforcement, and the policing of criminals from outside the area that come through the region.

An issue facing the region is that employers are seeing more applicants that cannot pass a drug screen test. In certain sectors, such as construction, manufacturing, retail

and restaurants, employers are having difficulty filling job slots even in a labor surplus economy. While this reflects national trends, it limits the pool of available workers.

The political environment affects the region at a local, state, and national level. The **laws and regulations** of various political entities can impact the economic environment of the region in both positive and negative ways. Overall, local governments in the region do not over regulate compared to other communities in the state and nation. The larger communities in the region tend to have more regulations. County regulations tend to be less strict, especially regarding land zoning.

State regulations often reflect national regulations especially regarding environmental issues such as ozone, stormwater, drinking water and wastewater.

TABLE FIVE A
TAX FINANCED INDICES IN NORTHEAST TENNESSEE
2010

COUNTIES	TAX FINANCED INDEX
Carter	72.87
Greene	103.96
Hancock	72.32
Hawkins	83.80
Johnson	80.62
Sullivan	121.89
Unicoi	98.95
Washington	131.71
MUNICIPALITIES	
Baileyton	109.07
Bluff City	96.74
Bristol	114.37
Bulls Gap	128.00
Church Hill	76.14
Elizabethton	102.62
Erwin	119.14
Greeneville	158.15
Johnson City	146.03
Jonesborough	108.18
Kingsport	174.59
Mosheim	89.24
Mount Carmel	56.77
Mountain City	120.80
Rogersville	132.76
Sneedville	73.85
Surgoinsville	62.99
Tusculum	72.61
Unicoi	77.65
Watauga	79.70

Source: State of Tennessee, Department of Economic and Community Development, Tax Financed Index. 2010.

CHAPTER SIX EXTERNAL FORCES

In reviewing the effects of external forces on the region's economy, the first step was to look at strengths, weaknesses, opportunities and threats (SWOT) identified through chapters 2-5 of this document. The SWOT analysis was then applied to the following environments:

- Natural Environment
- Political Environment
- Economic Environment
- Social Environment.

STRENGTHS, WEAKNESSES, OPPORTUNITIES & THREATS

ECONOMIC ENVIRONMENT:

STRENGTHS:

Labor Force/Work Ethic
Education System – Primary, Secondary & Post Secondary
Location
Manufacturing Initiative
Health Services/ETSU Medical School/ETSU Pharmacy School
Cost of Living
Urban Telecommunications
Transportation Access (Air, Rail & Interstate)
Tourism and Hospitality (Historic tourism, eco-tourism, racing)
Quality of Life

WEAKNESSES:

Entrepreneurial Environment & Capital
Retail Sales Leakage
Skill depth in Certain Occupational Fields
Lack of Low and Moderately Priced Housing Stock
Rural Telecommunications

OPPORTUNITIES:

Matching Labor Force Skills with Job Opportunities
Distribution Businesses (Interstate 26 & 81)
Business Incubators
Med-Tech Corridor
Air Cargo Development
Digital Media Development
Regulations Positively Impacting Economic Development

Advancement of ETSU as a Research University
Healthy Lifestyle
Downtown Revitalization

THREATS:

World and National Economic Trends
Business Decisions
International Dynamics
Economic Cycles
Industrial Land (long-term needs)
Health Insurance Costs
Farm Economy
Security Issues

World and national economic trends can impact our region's economy as witnessed by the national recession of 2007-2009. Factors such as the global demand, mortgage market, European debt crisis, exchange rates, and fluctuating natural resource prices ultimately impact local business decisions. While there are some business factors that can be impacted at a local level such as taxation, good infrastructure, and educated labor force, there are many factors outside local control.

Business decisions of major employers can significantly benefit or hurt the region. For example, when King Pharmaceuticals made its decision to leave Bristol, the region lost many higher paying, high skilled jobs. Conversely, the recent announcement by U.S. Nitrogen to invest \$133 million in its Greene County facility is a great plus for the region. While business decisions on a macro-economic level may balance out, on a micro or regional economic level these decisions can be a major plus or negative. The international economy is impacting the dynamics of the region, especially in the manufacturing sector. Labor costs, transportation costs and exchange rates may shift the balance to or away from the region.

Economic cycles have generally affected the region more than the nation although to a lesser extent in more recent economic cycles. The region has a higher percent of its employment tied to the manufacturing sector, which tends to exaggerate the economic expansions and downturns. In addition, the region usually lags behind in economic downturn and recoveries. As the region's economy has become more diversified in the last twenty years, these impacts have been minimized.

The region lacks in available **industrial land**, which limits the region in attracting major expansion or location projects. Without adequately zoned land with available infrastructure, communities limit future economic development.

Rising **health insurance costs** are significantly impacting companies' ability to operate and expand operations in the region. Efforts to improve the health and lifestyle of

residents in the region are a way to address this issue. Technology is making the tracking of medical records easier.

Increased **security requirements** are impacting the people through extra time and money, but will hopefully limit catastrophic event impact on the region's economy.

NATURAL ENVIRONMENT:

STRENGTHS:

- Water Resources
- Four Season Climate
- Trails
- Parks

WEAKNESSES:

- Land Use Planning in Certain Areas
- Infrastructure Funding

OPPORTUNITIES:

- Solid Waste Planning
- Stormwater Planning
- Growth Boundaries Planning
- Brownfields Reclamation
- Regional Water Systems

THREATS:

- Flooding
- Drought
- Tornadoes*
- Water Contamination
- Air and Ozone Pollution
- Funding Difficulty of Utilities in Meeting New Water & Sewer Regulations
- Uncontrolled Growth from In-migration

Natural disasters can severely impact the lives of citizens. How a community responds to these disasters can help minimize their impacts.

A threat to the region's natural environment is **drought**. Multiple years of drought experienced have resulted in less crop production, restrictions on water usage, and wells and springs going dry. A solution, such as a water source on a higher volume river, limits the region's susceptibility to drought conditions. Slowly declining **water resources** combined with **drought** further complicate the issue. Well and spring production has been declining in many areas over time. Further complicating the issue is greater groundwater contamination over time.

Flooding presents a threat to the region, especially for areas that are not part of a TVA controlled dam system. The mountainous terrain of the region can result in devastating flood events like those experienced on the Doe River in Carter County in 1998 and on the Nolichucky River in Greene County in 2001.

Tornadoes have historically not been a major threat in the region until the Spring of 2011. Tornadoes severely damaged the Camp Creek community of Greene County, the South Central Community of Washington County, and the eastern portion of Johnson County. The local emergency response was excellent to the tornado event. However, a weakness was identified in the long-term response not being as well planned.

There are several threats to the region's natural environment. **Bacteria and mineral contamination** is impacting many wells and springs that serve homes. The need for public drinking water is increasing, especially in areas that are experiencing more population growth.

Pollution is impacting the ozone levels in the region. Although much of this pollution comes from other areas, a large amount is generated locally through vehicles, motorized equipment and other sources. The region will need to meet the new federal ozone standards or risk limiting its economic development in the future.

SOCIAL & POLITICAL ENVIRONMENT:

STRENGTHS:

- Cost of Living
- Relatively Low Crime Rate
- Volunteerism
- Leadership Programs

WEAKNESSES:

- Per Capita Income Levels
- Poverty Levels

OPPORTUNITIES:

- Age Distribution
- Housing Organizations

THREATS:

- Federal/State/Local Laws
- Long-term Health Care
- Immigration

Federal, state and local laws impact safety, business environment, and utilities to name a few. A balance between regulation and freedom needs to be maintained so as

to maintain the region's quality of life. Issues such as **long-term health care** are becoming important as the population of the region ages. This issue is especially important to Northeast Tennessee as it has a higher percent of its residents over 65 years of age compared to the nation. **Immigration** is becoming an issue both socially, politically, and economically. Immigrants are providing a workforce to the region's larger farms and manufacturing sector. Verification of immigration status is expected to increase in importance.

CHAPTER SEVEN STRATEGIC PROJECTS, PROGRAM, AND ACTIVITIES

In identifying strategic findings, the District reviewed documents of the State of Tennessee, Northeast Tennessee Valley Regional Industrial Development Association and the Appalachian Regional Commission.

TENNESSEE STRATEGIES

Tennessee Department of Economic and Community Development (TECD) has a Jobs4TN plan, which lays out the economic development strategy resulting from a top-to-bottom review of the department. The plan was made public in 2011.

The plan includes four key strategies:

Prioritizing target clusters and existing industries: Tennessee is focusing its recruitment efforts on six target clusters in which the state has a clear competitive advantage:

- automotive;
- chemicals and plastics;
- transportation, logistics and distribution services;
- business services;
- healthcare;
- advanced manufacturing and energy technologies.

In 2010 expansion of existing business accounted for nearly 86 percent of new jobs created in Tennessee. The state will focus on helping existing businesses expand and remain competitive through a targeted outreach program.

Tennessee's FastTrack Economic Development Fund for infrastructure and jobs training has been expanded to support economic development in rural communities and for exceptional projects. By making reimbursable grants to local industrial development boards, the fund provides additional grant support for companies expanding or locating in Tennessee, and the legislation stipulates that the fund will only be used in exceptional cases where the impact of the company on a given community is significant.

The FastTrack Economic Development Fund will aid companies in a variety of ways, including relocation expenses, temporary office space, capital improvements, retrofitting and other expenditures not previously covered by FastTrack infrastructure or job training grants.

Tennessee has recently implemented a Select Tennessee program for industrial site locations. A third party verification process will ensure prospective companies that the sites meet infrastructure and readiness criteria.

Establishing regional “jobs base camps” across the state: TECD established “jobs base camp” in each of nine regions across the state. Each base camp worked with local partners to develop a regional economic development plan and align existing federal and state resources around that plan.

A key function of these jobs base camps will be reaching out to rural counties to incorporate them into broader regional economic development strategies that leverage existing resources and maximize the assets of rural communities.

Investing in innovation: Tennessee has a major statewide innovation initiative called INCITE that focuses on:

- better coordination of innovation activities across the state;
- increasing technology transfer and commercialization;
- and enhancing companies’ access to early-stage capital.

An activity that has come out of this initiative is the business accelerator program. Nine Regional Entrepreneurial Accelerators have been established throughout the state to assist Tennessee entrepreneurs. The accelerators will provide mentoring, education and training, strategic and technical support, and assistance identifying sources of capital.

The Northeast Tennessee program is at East Tennessee State University. Partners include First Tennessee Development District, Eastman Credit Union, Mountain States Health Alliance, the Johnson City Power Board, Bristol Tennessee Essential Services, community leaders Scott Niswonger and Pal Barger, Milligan College, Tusculum College, Northeast State Technical Community College, the Tennessee Small Business Development Center and the economic development agencies in each of the eight counties which make up the Northeast Tennessee region.

Reducing business regulation: Tennessee has enacted several initiatives that are more business friendly including elimination of the Hall Income Tax. TECD has worked with existing Tennessee businesses, business advocacy groups and state agencies to identify federal and state laws and regulations inhibiting job growth. Another piece of the plan is ensuring a business-friendly environment in Tennessee strengthened through less cumbersome rules and regulations on business along with tort reform to curb lawsuits and provide certainty around corporate legal issues.

Jobs4TN is a component of a comprehensive jobs plan to support and encourage investment of new business and existing business in Tennessee. The jobs plan also includes education reform initiatives that focus on children in the classroom and a well-educated, quality workforce in Tennessee, which is the most important long-term strategy for successful economic development.

NORTHEAST TENNESSEE REGIONAL STRATEGIC PLAN

As part of the Jobs4TN plan, TECD regional staff in Northeast Tennessee developed a Northeast Tennessee Regional Strategic Plan in 2011. The plan identified strategic priorities and put into place an actionable plan for regional staff to assist stakeholders in Northeast Tennessee. The document also ties to the four key strategies identified in the Jobs4TN plan including recruitment, existing business outreach, innovation and workforce development. Action items identified in the plan were as follows:

Action Item #1: Partner with the Tennessee Valley Authority, First Tennessee Development District and the Northeast Tennessee Valley Regional Industrial Development Association to develop a marketing plan for the region.

Action Item #2: Partner with local economic development organizations to meet with the Top 100 employers in the region.

Action Item #3: In partnership with the ECD-funded regional accelerator and Startup Tennessee, ECD staff and local innovation professionals will develop a network of angel investors and mentors to support emerging entrepreneurs in the region.

Action Item #4: ECD's regional staff will attend and participate in eight local workforce development and education committee meetings.

NORTHEAST TENNESSEE VALLEY REGIONAL INDUSTRIAL DEVELOPMENT ASSOCIATION

The Northeast Tennessee Valley Regional Industrial Development Association (NETVRIDA) is a multi-county economic development organization. Economic development professionals work with the twelve regional power distributors and TVA to market the region. Identified in the NETVRIDA 2012 Regional Marketing Plan are targeted industrial groups (clusters) for recruitment. Targeted companies should pay wages appropriate to the labor market and should be in industries experiencing growth in the world market place. Regional attributes such as the availability of raw materials, power, and transportation should also match industry requirements. The following list was developed through a review of those industries targeted by area communities and established State and TVA marketing clusters:

- Automotive
- Clean-Green-Renewable Energy Industries
- Rubber & Plastic Products
- Chemicals & Allied Products
- Data Centers & Information Technology
- Medical Related Manufacturing & Biotech

- Non-Electrical & Electrical Machinery
- Distribution & Logistics
- Aviation Related Industries

APPALACHIAN REGIONAL COMMISSION STRATEGIES

The CEDS document also reviewed the Appalachian Regional Commission's "Moving Appalachia Forward" Strategic Plan, 2011-2016". There were multiple strategies under each goal that tie to the CEDS.

- **Goal 1: Increase Job Opportunities and Per Capita Income in Appalachia to Reach Parity with the Nation.** Specific strategies under this goal that tie to the CEDS are "Diversify the Economic Base," "Enhance Entrepreneurial Activity in the Region," "Develop and Market Strategic Assets for Local Economies," "Increase the Domestic and Global Competitiveness of the Existing Economic Base," and "Foster the Development and Use of Innovative Technologies."
- **Goal 2: Strengthen the Capacity of the People of Appalachia to Compete in the Global Economy.** Specific strategies under this goal that tie to the CEDS include: "Enhance Workforce Skills through Training," "Increase Educational Attainment and Achievement," "Provide Access to Health Care Professionals," and "Promote Health through Wellness and Prevention."
- **Goal 3: Develop and Improve Appalachia's Infrastructure to Make the Region Economically Competitive.** Specific strategies under this goal that tie to the CEDS are "Build and Enhance Basic Infrastructure," "Increase the Accessibility and Use of Telecommunications Technology," and "Build and Enhance Environmental Assets."

REGIONAL CEDS STRATEGIC FINDINGS

The strategic findings identified in chapters 2-5 of the CEDS are summarized as follows:

- **Strategic Finding 1. Matching Labor Force Skills.** A major opportunity for the region is matching the labor force skills with new job opportunities. Talented young people will leave the area if opportunities are not available. Opportunities exist for the region to in-fill jobs available with many of its employers if the depth of the region's workforce skills were upgraded through education and training. Excellent opportunities exist in science, technology, engineering and mathematics (STEM) as well as health care, teaching and welding.

- **Strategic Finding 2. Entrepreneurial Development.** The region is developing business infrastructure that encourages the development of entrepreneurs and needs to continue supporting this effort. The Small Business Development Center, Business incubators, the Business Accelerator Program, and the mentoring program are examples of this infrastructure. A better capital network is needed to support this effort.
- **Strategic Finding 3. Higher Paying Jobs to Address Per Capita Income Gap.** The region's affordable cost of living addresses some of the income gap, but issues remain, including pay levels and education attainment, which are below the state and nation. Targeting business clusters that meet this need is important.
- **Strategic Finding 4. Development of Health Services.** Opportunities to further develop health services include a continued emphasis on providing an environment for the health services sector to succeed in the region. A threat to the health services sector is the cost containment difficulty being experienced in the health insurance industry. While improving the health of area residents is the main emphasis, a benefit of the health services sector is that it creates jobs that are above the current average wage for the region. Efforts to develop a healthy lifestyle to prevent health issues are gaining momentum in companies, schools, and government.
- **Strategic Finding 5. Upgrade Water & Sewer Infrastructure.** Water and wastewater infrastructure provides the opportunity for economic development through having the right kind of infrastructure at the right place. The natural environment is kept cleaner when wastewater is properly disposed of and not allowed to continue in a situation where failing septic systems are affecting ground and surface water. Improving health care is tied to having healthy drinking water and not being exposed to improperly treated wastewater.
- **Strategic Finding 6. Public Land for Economic Development.** A threat to the region's manufacturing base is the lack of available land in some counties to meet the long-term needs of the region in developing businesses in faster growing industries.
- **Strategic Finding 7. Better Utilize Transportation Network for Economic and Community Development.** Potential threats include an increase of traffic resulting in more accidents and congestion. In addition, more traffic increases pollution and ozone levels, already concerns for the region.
- **Strategic Finding 8. Expand and Upgrade Telecommunications Network.** The manner in which the region addresses opportunities in the telecommunications sector will impact the region's ability to create jobs. The region can fall behind other areas or it can close the gap. Public sector and education efforts can impact this trend.

- **Strategic Finding 9. Long-term Response to Natural Disasters.** The region has traditionally responded very well to natural disaster events with excellent emergency management services and community response to help families and businesses in need. Coordination by local governments with the affected communities and the myriad of public agencies involved in the process can be very complex and time consuming.
- **Strategic Finding 10. Enhance Environmental Assets.** Finding a way to maintain these views and waterways for future generations while accommodating development will be a challenge. **Eco-tourism** is becoming a developing tourism market for the region.
- **Strategic Finding 11. Meeting New Regulations.** Another threat to the region's natural environment is that utilities will be **meeting new regulations** regarding drinking water and wastewater. Many smaller utilities are having a difficult time meeting new guidelines and funding projects to address their needs. Opportunities in the region include continued **solid waste planning** so that the region meets the needs of its citizens and businesses.
- **Strategic Finding 12. Government and Social Services.** The region will be facing many problems without a strong volunteer network, law enforcement, and proper regulation of federal, state and local laws. Area governments that are proactive to change instead of reactive will be better positioned to maintain and obtain the quality of life for its citizens.

REGIONAL SOLUTIONS

This section identifies regional solutions which address the aspects of strategic findings in the previous section. The section is divided into two lists:

- Suggested Projects
- Vital Projects

SUGGESTED PROJECTS LISTING

1. **Economic Development Infrastructure Projects.** A common barrier to economic development in the region is inadequate infrastructure. These needs can be classified into the following areas:
 - a. **Water and Wastewater Facilities.** The region has a continual need to upgrade water and wastewater treatment plants to accommodate business expansion as well as meet new EPA and State regulations. The Watauga Regional Water Authority mentioned previously is an example. Other needs include upgrading

the Erwin Railroad Well (under construction); the Hancock County/Treadway water treatment system; the upgrade of the water and sewer infrastructure in the Mosheim area related to the location of U.S. Nitrogen, a major water user; and sewer systems in Surgoinsville and Tusculum. Two projects that could develop in the next few years are a sewer system in Roan Mountain and a sewer system in the Fall Branch Area.

- b. **Infrastructure Upgrades.** Many economic development projects are at locations that have greater infrastructure requirements than available or have no service at all. These extension projects include water, sewer, gas, electrical, telecommunications, road, rail and air infrastructure.
2. **Regional Business Parks.** The region has a major need for public sector land for future economic development. Areas in major need are Carter, Unicoi, and Washington counties. In most cases, infrastructure will need to be provided to these sites.
3. **Walters State Community College Campus in Greeneville.** A \$20 million investment in a new downtown Greeneville campus is planned. Walters State has 1,100 students at its Greenville facility and is limited by space. The new campus will allow Walters State to expand its allied health and law enforcement programs. Salaries for jobs such as occupational therapist assistant, physical therapist assistant and law enforcement typically average in the \$45,000-\$50,000 range. Other education facilities in the region include the downtown Johnson City campus of Northeast State Community College currently undergoing renovation and the Tennessee Technology Center building expansion in Elizabethton. The Academic Village in Kingsport continues to develop with the recent addition of an automotive program and parking garage.
4. **ETSU Valleybrook Research Facility.** In 2010, Eastman Chemical Company donated a 72,000 square foot research and office complex and a 30,000 square foot warehouse and storage facility to ETSU. The facility located in Northern Washington County near Interstate 26 allows ETSU to expand its research and educational programs and allows for expansion of its Innovation Lab business incubator program. ETSU recently dedicated a Nutrition and Dietetics Research Laboratory at Valleybrook. In addition, BioCorp, a start-up pharmaceutical research and development company has located at Valleybrook.
5. **Business Incubators.** The region currently has two business incubators, the ETSU Innovation Lab in Johnson City, and the Holston Business Development Center in Kingsport. Both facilities have been active in successfully developing locally owned businesses and have long-term needs to expand and improve their facilities. Two other facilities are in the development stage, the Valleybrook site and a kitchen incubator in Unicoi.

6. **Downtown Revitalization.** Economic development is returning to several downtown areas in the region and bringing jobs and residents to these areas. While infrastructure is present, it is often several decades old and ill suited to support development. Johnson City and Bristol are completing major flood control/downtown park projects that will spur investment. Four downtown areas in the region are certified as “Tennessee Main Street Communities” by TECD. These include Bristol, Greeneville, Kingsport and Rogersville.

7. **Financing Programs.** The District operates three business loan programs. These programs need capital injections so the loan programs can serve more businesses. A fourth program, a housing development fund, is being considered.

8. **Tourism efforts.** The region has a growing tourism industry that needs public and private sector support. The Northeast Tennessee Tourism Association maintains an excellent website that details the region’s tourism assets. The Town of Unicoi is considering the feasibility of the “Tanasi” facility project to display the region’s arts and crafts.

9. **Public Recreation Land.** The region has had three major public land acquisitions that provide recreation and tourism opportunities: the Doe Mountain Recreation Area, Rocky Fork Recreation Area, and Tweetsie Trail. These lands combined with the Cherokee National Forest, the Appalachian Trail, and municipal parks such as Bays Mountain, Buffalo Mountain, and Steele Creek give the region an ecotourism base.

GOALS/VITAL PROJECTS LIST

All of the suggested projects are needed projects in the region. While some of the suggested projects are vital, their timeline and outcomes are more difficult to determine. Of these suggested projects, the following projects are the most feasible to occur in the next five years and the most quantifiable:

<u>Project</u>	<u>Strategic Findings Addressed</u>	<u>5 Year Goal</u>
1. Economic Development Infrastructure Projects	#5 Upgrade Water & Sewer Infrastructure #7 Better Utilization of Transportation Network #11 Meeting New Regulations	100 Jobs/Yr. \$40 Mil. Inv. 7 Projects a year

<u>Project</u>	<u>Strategic Findings Addressed</u>	<u>5 Year Goal</u>
2. Community Development Infrastructure Projects	#5 Upgrade Water & Sewer Infrastructure #11 Meeting New Regulations	100 new customers 3 Projects a year
3. Regional Business Parks	#5 Upgrade Water & Sewer Infrastructure #7 Better Utilization of Transportation Network #6 Lack of Available Land	200+ Jobs in 5 years
4. Valleybrook Research Facility	#2 Need for Entrepreneurial Development #3 Higher Paying Jobs #4 Develop Health Services	100+ jobs in 5 years
5. Business Capital Network	#8 Financing Programs	Develop 2 new capital sources
6. Walters State Campus in Greeneville	#1 Match Labor Force Skills #4 Develop Health Services	In-fill 100 Available Jobs a Yr.
7. Doe Mountain Recreation Area	#10 Enhance Environmental Assets	25% increase travel expenditures

CHAPTER EIGHT
GOALS, OBJECTIVES, ACTION PLAN,
PERFORMANCE MEASURES AND REPORTING

Through the project identification process in Chapter Seven, quantifiable goals over the five years of the CEDS can be set. The objective will be to implement the project. Because of the nature of the projects being long-term, factors will occur that will cause some projects to fall out and others to develop. The implementation steps and responsible parties of the vital projects are also identified.

The vital projects performance measures are listed along with other project performance measures that are considered relevant. These measures will be part of the Annual CEDS performance report that will be submitted each year. The CEDS performance report will also contain any changes in technical components of the CEDS, which will be available for review and comment from the public for a period of thirty days prior to submission to EDA.

The CEDS process allows for adjustments to be made annually if needed.

Of the vital projects identified in the previous chapter, the following is a summary of the goals, objectives, action plan performance measures and reporting.

Vital Project #1	Economic Development Infrastructure Projects
5-Year Goal	100 Jobs a Year, \$40 Million Investment a Year
Objective	Complete economic development infrastructure projects that support job creation and private sector investment
Construction	\$5 million a year
Operations	\$100,000 a year
Phases/Timetable	Complete at least seven economic development infrastructure projects a year.
Performance Measure	Actual company job creation and investment. Number of infrastructure projects
Action Plan	The District assists communities in obtaining funds for economic development infrastructure projects annually. Potential funding sources that can assist with these projects include EDA, State, ARC, EPA, TDOT, loan programs, and local funds.

Vital Project #2	Community Development Infrastructure Projects
5-Year Goal	100 new water or sewer customers a year, 3 existing water & sewer upgrades a year.
Objective	Complete community development infrastructure projects that support new customers, upgrading of water & sewer infrastructure and meeting new regulation
Construction	\$2 million a year
Operations	\$50,000 a year
Phases/Timetable	Complete at least four community development infrastructure projects a year.
Performance Measure	Actual number of new water and sewer customers and existing water and sewer system upgrades
Action Plan	The District assists communities in obtaining funds for community development infrastructure projects annually. Potential funding sources that can assist with these projects include CDBG, ARC, RD and local funds.

Vital Project #3	Regional Business Parks
5-Year Goal	Create 200+ jobs in 5 years
Objective	Purchase new land, market land purchased in last 5 years and provide infrastructure to support economic development
Construction	\$1 million a year
Operations	\$25,000
Phases/Timetable	New Land Purchase 2014. New Infrastructure 2015.
Performance Measure	Actual job creation and investment
Action Plan	Economic development in Carter, Unicoi and Washington counties has been limited in part due to the lack of available public land and are pursuing solutions. Other counties in the region have land that is limited in development due to lack of infrastructure. Operating costs will be provided by the local governments. EDA and State funds are expected to be part of this process.

Vital Project #4	Valleybrook Research Facility
5-Year Goal	Create 100+ jobs at facility in 5 years
Objective	Provide space for ETSU research to become commercialized and provide business incubator space
Construction	\$2 million
Operations	\$100,000 a year
Phases/Timetable	Construction ongoing
Performance Measure	Actual company job creation and investment
Action Plan	East Tennessee State University is making space at the Valleybrook Research Facility available for ETSU research and private sector incubation. Some of the school's faculty are involved in research projects and require the proper facilities. The facility itself has a lot of amenities, but could be reconfigured to better suit the needs of the university. In addition, sewer service to the facility would be of benefit over the current store and haul system. EDA funding of \$1 million would be requested.

Vital Project #5	Business Capital Network
5-Year Goal	Develop and identify two new capital sources
Objective	Better develop capital network in region for business lending, angel investing, venture capital, and housing.
Construction	N/A
Operations	\$10,000 a year
Phases/Timetable	Develop/identify two new capital sources in 5 years
Performance Measure	Number of capital sources developed and identified
Action Plan	The First Tennessee Development District will coordinate with the ETSU Business Accelerator Program and individuals in the lending community to seek out solutions to the region's capital needs.

Vital Project #6	Walters State Campus in Greeneville
5-Year Goal	In-fill 100 available jobs a year
Objective	The facility financing is nearly in place. Facility will be able to offer training in specialized health care & law enforcement in addition to regular curriculum.
Construction	\$20 Million
Operations	\$2,000,000 a year
Phases/Timetable	Construction complete 2014. Opening 2014.
Performance Measure	Actual placement of graduates in jobs
Action Plan	Walters State has 1,100 students at its Greenville facility and is limited by space. The new campus will allow Walters State to expand its allied health and law enforcement programs. ARC funding of \$500,000 will be sought for equipment.

Vital Project #7	Doe Mountain Recreation Area
5-Year Goal	25% increase in travel expenditures (5% a year)
Objective	Develop multi-use trail system that will lead to commercial retail, service and lodging opportunities
Construction	\$250,000
Operations	\$50,000 a year
Phases/Timetable	Construction of initial trails 2013 through 2015.
Performance Measure	Number of facilities opened related to recreation area and % increase in travel expenditures in Johnson County as measures by the U.S. Travel Association.
Action Plan	Johnson County was part of the effort that led to the recent purchase of 8,600 acres of land by the State of Tennessee for the Doe Mountain Recreation Area. Doe Mountain is ideal for outdoor recreation such as mountain biking, horseback riding and all terrain vehicle trails. In turn, these recreation uses can lead to development of properties near the Doe Mountain for lodging and bring retail tax dollars into Johnson County. Applications to programs such as the Recreation Trails Program (RTP) will be sought.

