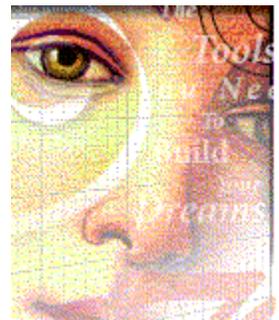


Twenty-twenty Vision



**A Comprehensive Development Plan for
Kanawha County, West Virginia
TECHNICAL SUPPLEMENT
May 2014**

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EXECUTIVE SUMMARY

This document is a technical supplement to the Twenty-twenty Vision Comprehensive Development Plan for Kanawha County, West Virginia.

Information presented in this volume was collected during the research phase of the planning process and amended during the comprehensive plan element committee (CPEC) meetings. The purpose of this document is to support the findings, conclusions, proposed policies, alternatives, and recommended actions contained in the comprehensive plan. Data in the supplement was updated and refined for this plan update.

This document, in accordance with Chapter 8A of the Code of the State of West Virginia, provides technical support, evidence, information, and key statistics regarding the past, present, and future of Kanawha County, WV. This research is intended to promote an improved decision-making process within the community by assembling and analyzing these essential facts. It also serves as the rational basis for developing long-range strategies for future development.

In so doing, the community can be better prepared to address pressing social and economic issues, take full advantage of emerging opportunities, and create better places to live, learn, work and play.

INTRODUCTION

Kanawha County, West Virginia is a unique and interesting collection of over a dozen riverfront municipalities and numerous unincorporated and rural communities. Its strategic geographic location, mountainous terrain, mild climate, abundant natural resources, diverse economy, culture, and history combine to create unique problems, strengths, and opportunities.

Kanawha County is a unique and interesting collection of over a dozen riverfront municipalities and numerous unincorporated and rural communities.

As a basic introduction and overview, the following information is intended to provide a quick, concise assessment of the various attributes and dimensions of Kanawha County. The balance of this technical supplement and statistical profile will provide a more detailed level of information on these and many other relevant topics. Graphic representation and thematic maps of relevant data are provided in both the main report (comprehensive development plan) and this supplemental document.

LOCATION

Kanawha County is centrally located in the State of West Virginia and the upper South Atlantic region of the United States.

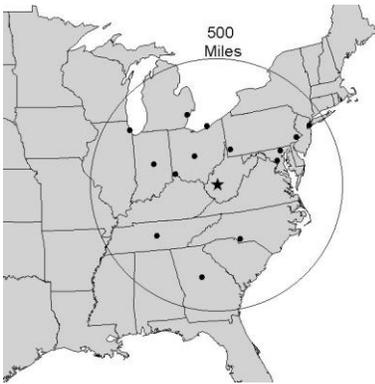
Kanawha is one of 55 counties in West Virginia. It is part of the Charleston Metropolitan Area. Its 2010 population of 193,063 ranked 1st in the state. Its area is 911 square miles.

Kanawha County, West Virginia is one of three urbanized counties which make up the Charleston, WV Metropolitan Statistical Area (MSA). The Charleston MSA has a population (2010) of 304,284 and an area of 1,758 square miles.

The county seat, Charleston, also serves as the state capital.

Figure 1: Kanawha County in the Nation

- Kanawha County is located within 500 highway miles of these major US cities:



Regional Intergovernmental Council

CITY	HIGHWAY MILES FROM CHARLESTON
Atlanta	499
Baltimore	361
Charlotte	285
Chicago	470
Cincinnati	205
Columbus	170
Detroit	399
Indianapolis	317
Nashville	419
Philadelphia	482
Pittsburgh	237
Washington, DC	342

CLIMATE

ANNUAL AVERAGES

Daily Temperature (degrees Fahrenheit):	56.5
High Temperature:	68.6
Low Temperature:	44.6
Rainfall (inches):	42.9
Snowfall (inches):	18.9
Highest Recorded Temperature:	108
Lowest Recorded Temperature:	-17

POPULATION

TRENDS AND PROJECTIONS

From 1900 to 1960, Kanawha County experienced tremendous and sustained growth in both population and employment. With a resident population of 54,696 at the start of the 20th century, the county grew to 252,926 by 1960, averaging over 3,300 new residents each year for over half a century. However, by the mid-sixties growth began to taper off and changes in the population become apparent.

From 1960 to 1970, the population declined 32,410 persons to 229,410, as household size diminished. This was followed by a modest increase, reported by the 1980 decennial census, when population grew to 231,414. By 1990, the population had declined to 207,619, and by 2010 to 193,063.

Table 1 - Recent Population Trends: 2000-2012

	2000	2010	2012
Kanawha County, WV	200,073	193,063	192,572

Source: US Census Bureau (2000 and 2010) ACS 5-yr estimates (2012)

Table 2 - Population Projections: 2010-2030

	Actual 2010	2020	2030
Kanawha County, WV	193,063	190,884	185,722

Source: West Virginia University, Population Projection for WV Counties (2011)

Figure 2 – Population 1850 – 2030

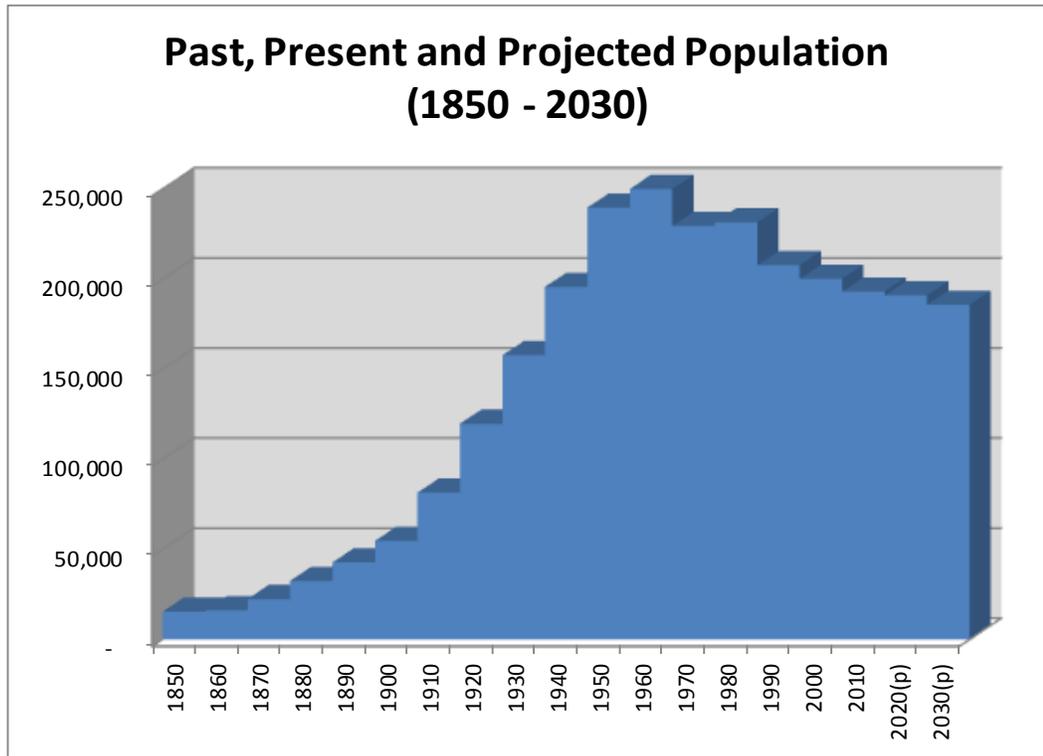


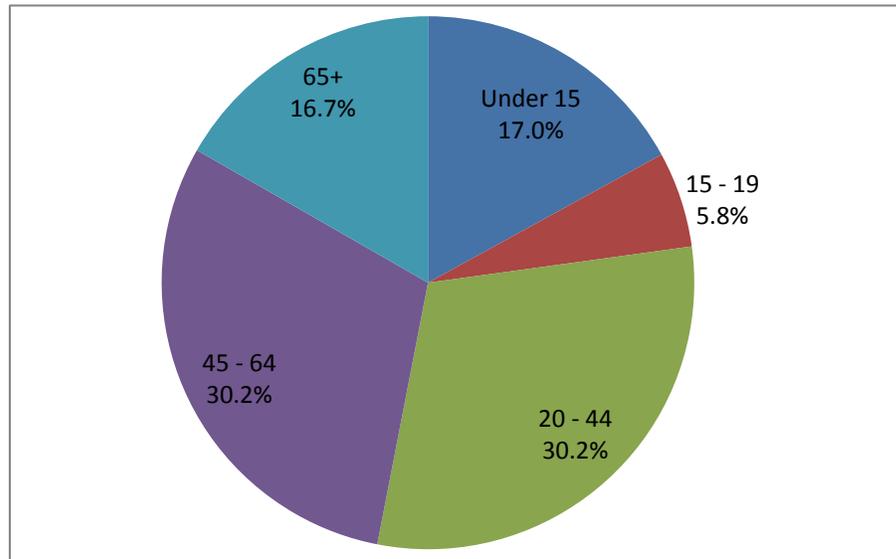
Table 3 - General Characteristics of Persons: 2010

	Kanawha County	City of Charleston
<i>Percent male</i>	48.0	47.6
<i>Percent female</i>	52.0	52.4
<i>Percent white</i>	89.1	81.3
<i>Percent black</i>	7.3	17.7
<i>Total households</i>	84,201	23,453
<i>Average HH size</i>	2.26	2.11

Source: US Census Bureau

The median age of Kanawha County is 42.4, slightly higher than West Virginia's median age of 41.3; much higher than the US, 37.2.

Figure 3 – Kanawha County Population by Age Group



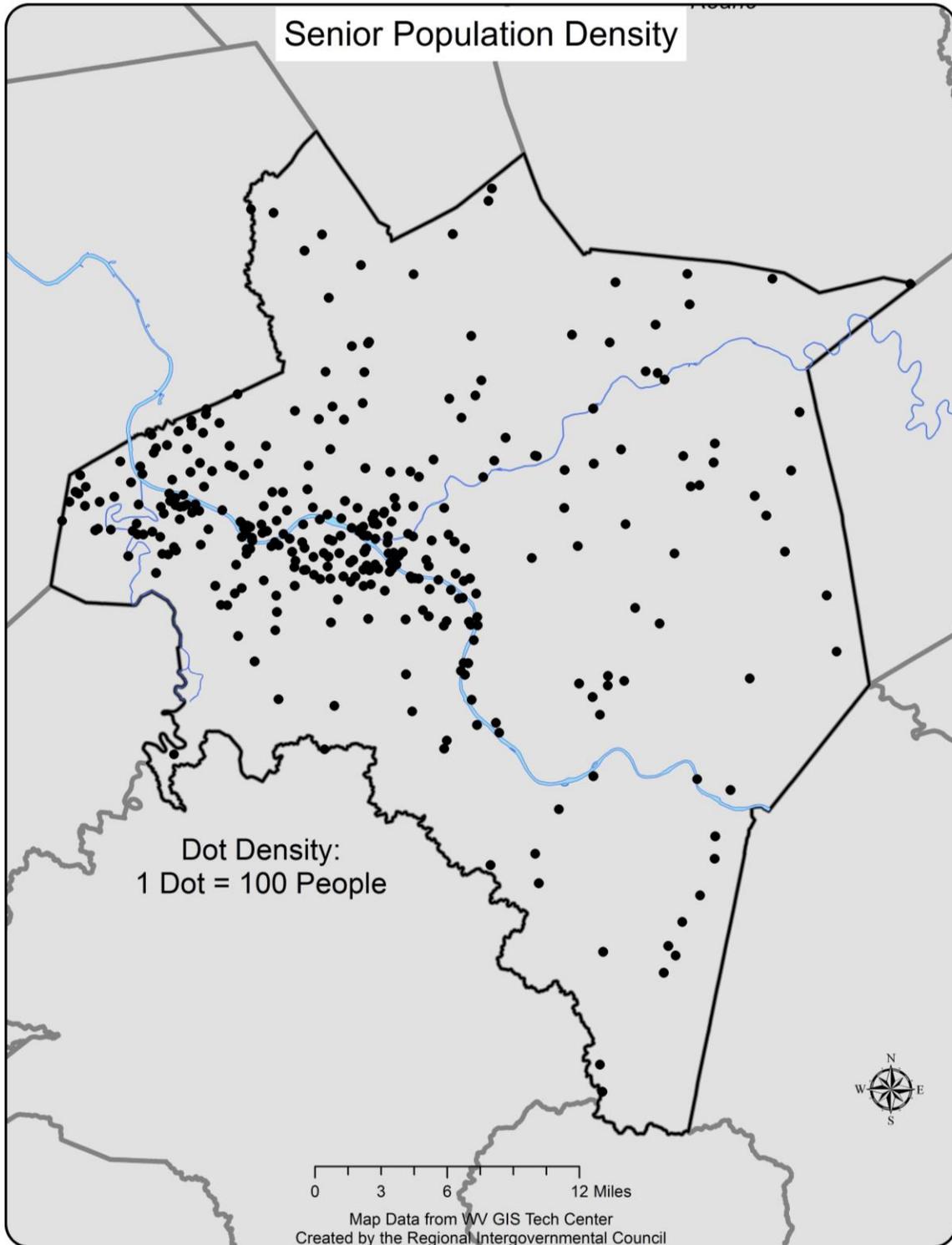
Source: 2010 Census

SENIOR POPULATION

The nation, state, and county are all experiencing tremendous growth in the number and proportion of the population 65 years of age and older. In 2010, there were 32,315 seniors age 65 and over living in Kanawha County. Householders age 65 and over constituted 22,287 (26.4%) of the total 84,201 households in the county. In 2010, approximately 8.3%, of all seniors in Kanawha County were living at or below poverty level. Most senior householders (22,147) resided in owner-occupied housing units (18,426).

Because the income of seniors is relatively stable, transfer payments continue to pour into the local economy even during a recession. The mean earnings of a Kanawha County Senior are \$44,633. Retirees can help create and retain jobs, stimulate the housing industry, expand the health-care industry, increase the tax base and increase retail sales. Conversely, large senior populations do not help attract employers that require a large work force, and dominate the housing market.

Figure 4: Senior Population



HOUSING

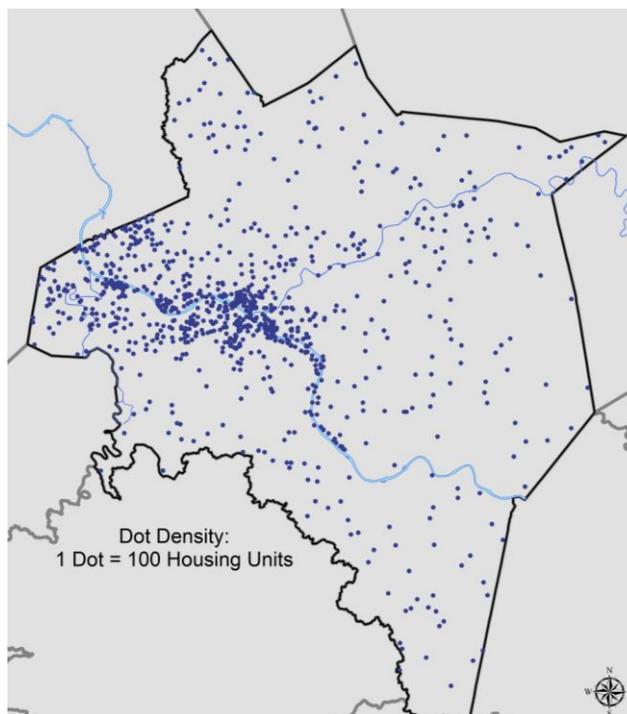
From 2000 to 2010, the number of occupied housing units decreased from 92,747 to 92,679. During the same period, population declined from 200,073 to 193,063 and median household size dropped from 2.28 to 2.26; consistent with state and national trends. Average household size has been shrinking since 1950, when it was 3.65.

Table 4 - General Characteristics of Housing Units

	Kanawha County 2000	Kanawha County 2010
All housing units	92,747	92,679
Built before 1960	49,769	41,351
Occupied housing units	84,713	82,961
Owner-occupied	58,022	57,784
Median value	\$55,300	\$58,905
Renter-occupied	26,691	26,417
Median contract rent	\$258	\$648
Gross rent (incl. utilities)	NA	NA
Vacant housing units	8,034	8,417
Mobile home or trailer	9,065	9,331
Householder 65 years & older	22,585	24,101

Source: US Census Bureau

Figure 5 – Housing Density

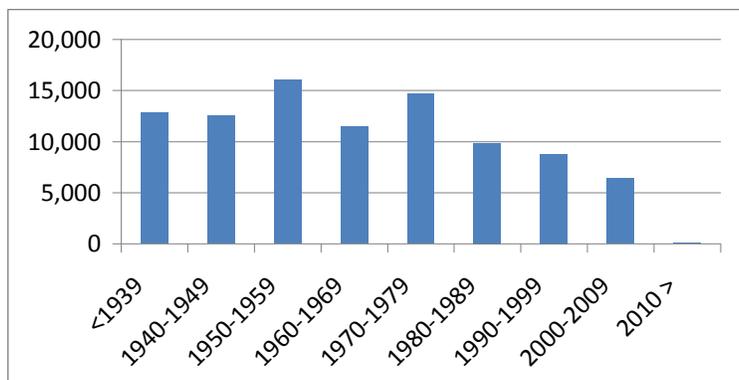


Source: Regional Intergovernmental Council

The vast majority of housing in Kanawha County is located within the corporate limits of fifteen riverfront municipalities.

Much of the existing housing stock was built prior to 1960. Of the 92,679 housing units in Kanawha County (2010), 41,351 (44.6%) were built before 1960. Over 12,828 (13.8%) of all occupied housing units were built before 1940. The median value of housing units in Kanawha County is \$58,905. Manufactured housing constitutes a significant and growing proportion of housing units produced during the last 30 years.

Figure 6 – Year Housing Structure Built



Source: 2008-2012 ACS 5yr Estimates, *less than 100 houses were built from 2010 to 2012*

Over 71% of all occupied housing units were owner-occupied; 29% were renter occupied. The 2010 homeowner vacancy rate was only 1.6% while rental units experienced a 6.4% vacancy rate.

Median monthly housing expenses for homeowners with a mortgage are \$969 for Kanawha County residents; much lower than the U.S. median of \$1,559. Homeowners with no mortgage, 46% of all homeowners, spend approximately \$314 in monthly housing expenses in Kanawha County. The U.S. median monthly housing expense for homeowners with no mortgage is \$449. *Source: 2008-2012 ACS 5yr estimates*

DETERIORATION OF AFFORDABLE HOUSING STOCK

Generally speaking, the older suburban and rural housing units are also the most affordable for residents of Kanawha County. This is especially true as the service sector of the economy expands and the number of higher-paying jobs in mining and manufacturing decline.

BUILDABLE SITES & SUBURBAN SPRAWL

The high demand for affordable and upscale housing continues to grow due to the small amount of adequate building sites. Over 25,000 non-residents commute to work in Kanawha County each weekday. Many of these workers would likely relocate their household to Kanawha County if suitable housing were available.

Kanawha County has a very limited amount of land on which to locate new development, including residential uses. When any new tract is made available, it becomes a premier property. In the case of residential development, this directly translates into higher sale prices and rental rates. The new supply satisfies demand in the upper income ranges, but leaves the low-to-moderate income households without any option.

INCOME

HOUSEHOLD INCOME

Household, family, personal, and per capita incomes in Kanawha County have consistently been higher than that of the State of West Virginia, but often fall short of national levels. In 2010, the median household income in Kanawha County was \$45,642 while the mean was \$62,379. Seventy-three percent of households (60,727) had earned income, while 36 percent of households (30,492) received Social Security benefits.

The mean household income for households receiving public assistance payments was \$3,049, excluding medical benefits, food stamps, and housing subsidy payments.

Retirement payments were made to 19,475 households in 2010. The mean household income for households receiving retirement payments was \$18,152.

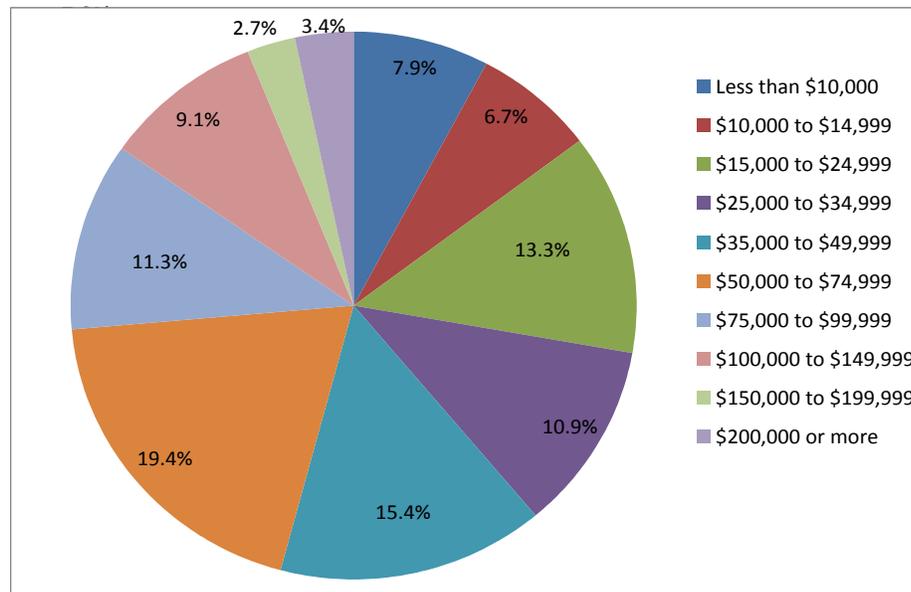
Households made up of married couples with children younger than 18 earned the highest mean income (\$43,681), while female householders, no husband present, with children under 18, earned the lowest (\$13,407). 31,423 persons (15.3%) have incomes at or below the poverty level.

Table 5 - Change in Household, Family, & Personal Income: 1990 - 2010

KANAWHA COUNTY	1990	2000	2010
Median Household income	\$23,999	\$33,766	\$45,642
Median Family Income	\$30,030	\$42,568	\$58,363
Per Capita Income	\$12,887	\$20,354	\$27,415

Source: US Census Bureau American Community Survey

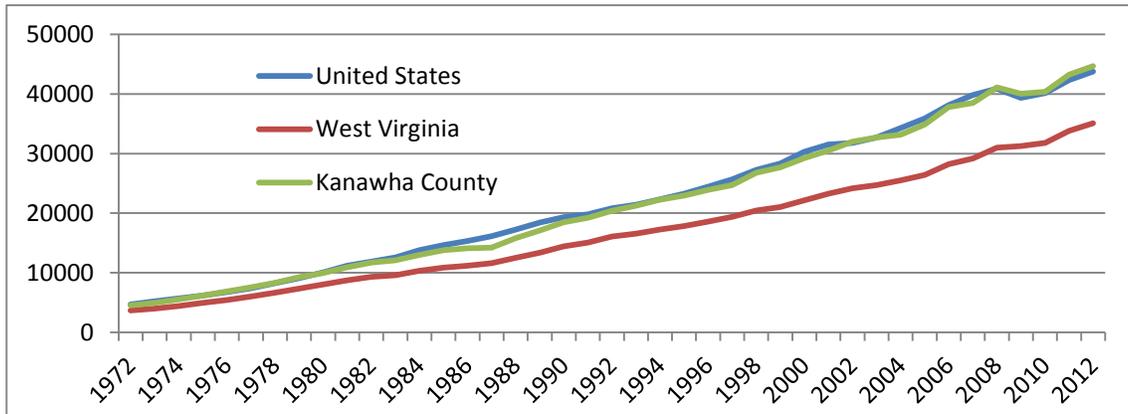
Figure 7 – Kanawha County Household Income 2012 ACS



PER CAPITA PERSONAL INCOME

Figure 8 shows the rise in per capita personal income (PCPI) over the past 30 years. In 2012, Kanawha County had a PCPI of \$44,660. This PCPI ranked 1st in the state, and was 127 percent of the state average, \$35,082. The PCPI in Kanawha County has been the largest in the state since 1998. Kanawha County's PCPI has stayed close to the US PCPI while the gap between Kanawha County and WV's PCPI has been widening.

Figure 8 - Per Capita Personal Income for the US, WV, and Kanawha County



In 2012 the U.S. GDP grew 2.5% whereas the GDP for WV grew 3.3%. Major contributors of growth were durable goods manufacturing, finance and insurance, and wholesale trade. Mining was a major contributor to growth in West Virginia, North Dakota, and Texas.

Data Source: US Bureau of Economic Analysis

TOTAL PERSONAL INCOME

Total personal income (TPI) includes the earnings (wages and salaries, other labor income, and proprietors' income); dividends, interest, and rent; and transfer payments (pensions and benefits) received by the residents of Kanawha County.

Table 6 - Personal Income

Personal Income (thousands of dollars)	1972	1982	1992	2002	2012
	\$ 1,034,907	\$ 2,694,174	\$ 4,236,336	\$ 6,285,451	\$ 8,582,810

In 1972, Kanawha County had a total personal income (TPI) of \$1,034,907*. In 1982, Kanawha County's TPI more than doubled to \$2,694,174*. The current TPI is \$8,582,810*.

**All estimates are in thousands of dollars; US Bureau of Economic Analysis*

EARNINGS BY INDUSTRY

Between 2002 and 2012 total employment decreased while total wages increased by approximately 25%. The decrease in employment could be explained by the economic recession, or a person with 2 part time jobs gaining one full time position.

Table 7 - Average Annual Employment and Wages: 2002 and 2012

	2002	2012
Total Employment	\$ 110,243	\$ 105,089
Total Wages (1,000s)	\$ 3,536,543	\$ 4,469,974
Average Annual Wages	\$ 32,080	\$ 42,535
Average Weekly Wages	\$ 616.92	\$ 817.98

Source: Workforce WV

The largest industries in 2012 were services, which accounted for 33.3% of all earnings; government, 20.27%; and wholesale and retail trade, 16.2%. The following pie charts show the distribution of wages and employment over all industries. Note the Leisure and Hospitality Industry covers a large portion of employment, yet a much smaller portion of the total wages. Conversely, the Mining Industry covers a small portion of employment, yet a larger portion of the total wages.

Figure 9 - Employment by Industry

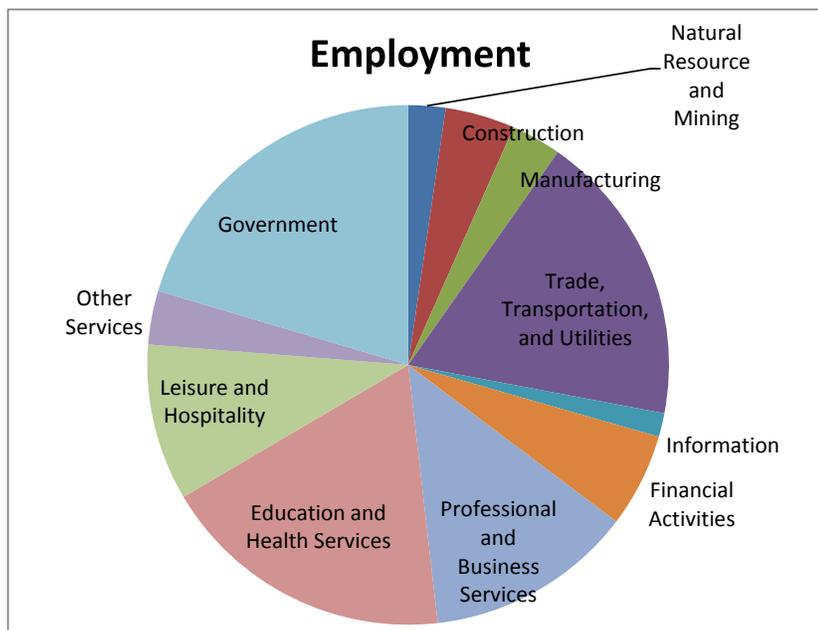
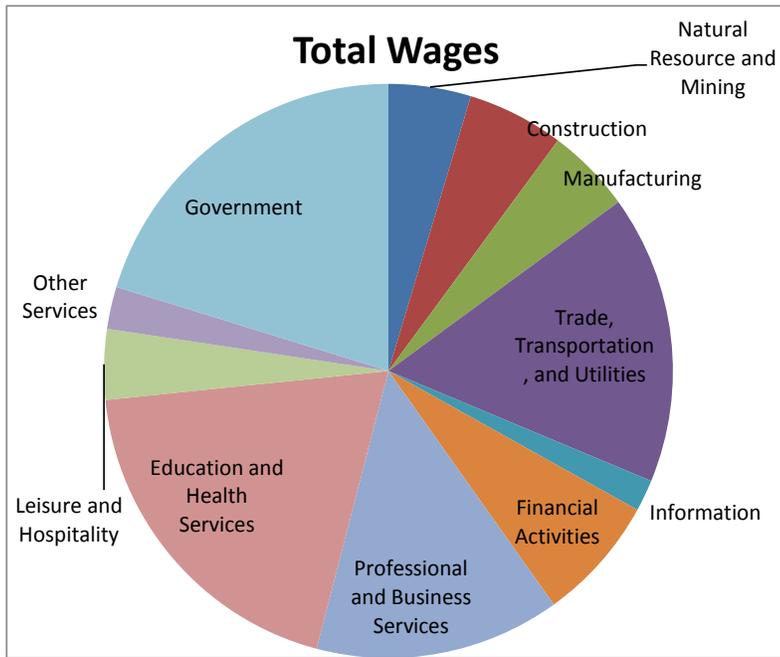


Figure 10 – Total Wages by Industry



EMPLOYMENT

EMPLOYMENT & JOB GROWTH

Once dominated by the extractive coal and timber industries, Kanawha County now enjoys a much more stable and diverse economy. It serves as the economic heart of both the region and state. Kanawha County is the center of finance, commerce, health care, transportation, communication, and government. Employment grew steadily in the county until 2008 at the start of the economic recession. Employment from 2011 to 2012 grew slightly, the first growth since 2007 to 2008.

The top 3 private employers in Kanawha County are; Charleston Area Medical Center, Herbert J. Thomas Memorial Hospital and Wal-Mart Associates.

Table 8 - Employment by Industry: 2010

	Kanawha County
Mining	2,600
Construction	4,970
Manufacturing	3,260
Transportation, Trade and Utilities	19,110
Information, Professional and Business Services	21,620
Educational and Health Services	20,860
Other Services	18,860
Government	22,020
TOTAL	113,290

Source: Workforce WV

Between 2010 and 2020 employment is expected to grow by almost 3,000 jobs. The occupations with the most job openings are Healthcare Practitioners, Sales, and Office and Administrative Support Occupations. The fastest growth is projected to occur in the Market Research Analysts, Health Technicians, and Software Developing Occupations. *Source: Workforce WV Occupational Projections*

Table 9 - Resident Labor Force Statistics: January 2014

Kanawha County	
Total civilian labor force	85,600
Total number employed	80,540
Total number unemployed	5,050
Unemployment rate (percent)	5.9

Source: Workforce WV Labor Market Information

Table 10 - Resident Labor Force and Employment Changes: 2010 - 2012

KANAWHA COUNTY	2010	2011	2012
Total civilian labor force	91,290	90,490	90,090
Total number employed	84,780	84,180	84,350
Total number unemployed	6,520	6,310	5,740
Unemployment rate (percent)	7.1	7.0	6.4

Source: Workforce WV

FORECASTS

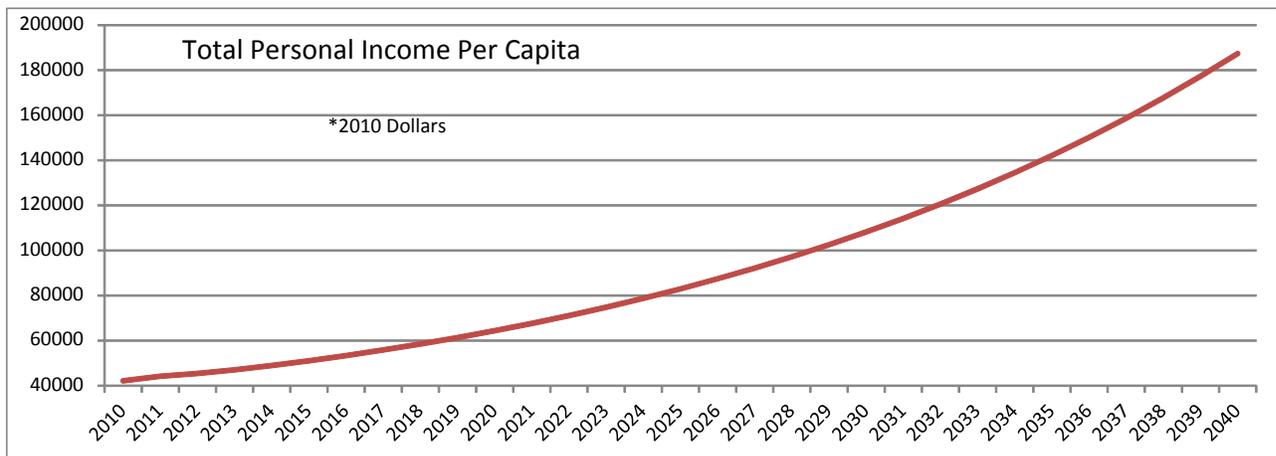
Population in Kanawha County is expected to decrease by approximately 6% by 2040. This is likely due to an aging population, dwindling housing stock, and urban sprawl. The past decades have shown population growth in neighboring Putnam County where existing housing is newer and more accessible. While the overall county population has decreased, some communities have experienced growth; Nitro, Corridor G and Elkview. These trends are expected to continue unless current housing stock or developments change.

New development at the West Virginia Regional Technology Park, commercial and residential development along Corridor G, and the new CAMC David Lee Cancer Center are expected to spur employment growth.

Employment in Kanawha County is expected to increase by approximately 27% by 2040. Specifically the Charleston Central Business District, Corridor G and areas along the I-64 Corridor are expected to see the most employment growth. As previously mentioned industry growth is expected in health care and medical technician fields, information technology, and retail services.

Woods and Poole Economics Inc, forecasts economic and demographic data for every state, region and county in the US, this data was used in RIC's recent metropolitan transportation plan update (Metro Mobility 2040). The 2010 forecasts show an increase in personal income per capita.

Figure 11 – Total Personal Income Per Capita Projection



*Woods and Poole Economics Inc.

COMMUNITY HEALTH, FITNESS & SAFETY

The health of Kanawha County may be measured in a variety of ways. Public opinion about many health and fitness issues has documented through a scientific telephone survey and key informant interviews, the most recent survey was conducted from January 10 through May 31, 2011. In the case of local issues, the Kanawha Coalition for Community Health Improvement (KCCHI) has conducted studies to determine the greatest health care needs in Kanawha County.

The West Virginia Bureau of Public Health, Health Statistics Center, annually updates statistical profiles for all 55 counties in the state. Various other organizations also collect information which helps to define, benchmark, and monitor threats to community health and fitness.

LEADING CAUSES OF DEATH

The most significant public health concerns of our community can be identified by reviewing published statistics; comparing Kanawha County to the state and/or nation.

In comparison to the United States, Kanawha County has a higher rate of death from the following causes:

- ◆ Diseases of the Heart
- ◆ Cancer
- ◆ Diabetes
- ◆ Chronic lower respiratory disease

Obesity has been identified by the public (KCCHI survey) as the most significant problem in terms of health concerns in Kanawha County. In 1998, cancer was identified as the most significant health problem. Heart disease, high blood pressure, diabetes and cancer were rated as the biggest health problems in 2011 by survey respondents.

Trend data from 1995 - 2011 indicate that more than one in three (37 percent) Kanawha County adults smoke cigarettes. This trend is decreasing, but most Kanawha County residents have tried some form of tobacco products (cigarettes, cigars, pipe, and smokeless tobacco)

EXTRAORDINARY PUBLIC HEALTH CONCERNS

In addition to the leading causes of death in Kanawha County, there are other public concerns regarding community health and fitness. Each has social and economic costs that are interrelated with many other topics addressed in the comprehensive development plan, *Twenty-twenty Vision*.

- ◆ **Alcohol and Substance Abuse**
- ◆ **High Blood Pressure**
- ◆ **Teenage Pregnancy**

- ◆ **Lung Disease**
- ◆ **Cigarette Smoking**
- ◆ **Air Pollution**
- ◆ **Driving Under the Influence**
- ◆ **Sedentary Lifestyle**
- ◆ **Lack of Exercise**
- ◆ **Obesity**
- ◆ **Poor Eating Habits**
- ◆ **Behavioral Health Risks**

When compared to national statistics, Kanawha County residents have risky health behavior in several categories: overweight, lack of exercise, poor eating habits, smoking, and prescription drug misuse. These lifestyle and health behaviors have been proven to have a negative effect on overall health. Each health condition, habit or lifestyle involves tremendous social and economic tolls.

In comparison to the United States, Kanawha County has a higher adult prevalence of the following:

<i>Obesity</i>	<i>(31.7 percent)</i>
<i>Diabetes</i>	<i>(12.4 percent)</i>
<i>Hypertension</i>	<i>(27 percent)</i>

Source: West Virginia Bureau for Public Health

Public health, safety education, physical activity, , policy and environmental programs, and therapy can substantially reduce the risk of dying from heart disease, the leading cause of death in the county, state and nation. Such programs can also reduce the risk of developing colon cancer, diabetes, and high blood pressure.

PHYSICAL FITNESS

Although Kanawha County has a growing senior population (age 65 or over), the number of families and children (under age 18) has rapidly diminished in recent years. With that decline have come significant changes in the geographic, social, and economic profile of families in Kanawha County. Most of these statistics are disturbing to community leaders, and document the deteriorating quality of life for many children and families.

For example, during the period 2006 to 2011, the percentage of adults with a sedentary lifestyle has increased. During a typical work day 68% of employed survey respondents report mostly sitting or standing. Active leisure time (biking, walking, gardening, golf or other activities) has decreased from 85% to 63% since 1998. Reasons for avoiding leisure activities include inadequate sidewalks, existing health problems, unsafe street traffic and lack of free time.

PUBLIC SAFETY

Public safety services are provided to protect life and property in three functional areas: 1) law enforcement, 2) fire protection, and 3) emergency medical services.

The West Virginia State Police, Kanawha County Sheriff, and various municipal police forces provide law enforcement services throughout Kanawha County. Highway road patrols, Emergency 911 response, criminal investigative, and special units cooperate to deliver their services to the general public.

Fire protection services are provided by municipal and/or Volunteer Fire Departments (VFDs) located throughout the county. Both life and property are protected by well-equipped and trained professionals. Each VFD is independently funded and managed.

Emergency medical response and transport services are provided by a variety of organizations, including the Kanawha County Emergency Ambulance Authority (KCEAA), several VFDs, and many independent, for-profit corporations.

EMERGENCY PREPAREDNESS

The Kanawha County Public Safety office has cosponsored and prepared a variety of response plans for catastrophic emergency situations. In particular, a working committee has developed a program and procedures for managing hazardous chemical spills. Contingency plans have also been drafted for response to flash flooding and other natural disasters. **It is important to note; recent surveys suggest the majority of the Kanawha County public has not prepared for an evacuation or shelter in place emergency. The Kanawha County Office of Emergency Management strongly urges all residents to have a three day supply of water, food, medications, batteries and other essential items for each family member.**

PUBLIC HEALTH PROTECTION

A wide variety of essential services to protect the public health on an ongoing basis are provided by the Kanawha-Charleston Health Department. Medical and environmental health services are available to the general public. Licensing and permitting of new water and/or sanitary sewer service facilities and their operators, among other public services, are also managed through the consolidated health department.

PUBLIC HEALTH PROMOTION

The most recent strategy applied to individual and public health is referred to as preventive medicine. It involves early detection and mitigation of health risks, including a broad range of activities. Everything from public education and health screenings to medical examinations is used to promote physical health and fitness.

Many area employers have adopted proactive “Wellness Programs” as part of their employee benefits package. These programs also help reduce the number and dollar amount of health claims, as well as reduce the number of annual sick days taken by wellness program participants. While more worksites have increased the number of wellness programs, a recent survey by KCCHI cites a decrease in participation.

TRANSPORTATION

Kanawha County is served by a wide range of transportation services and facilities. These include:

- ◆ highway system
- ◆ public transportation system
- ◆ bicycle and pedestrian facilities
- ◆ freight movement system
- ◆ intercity passenger service (air, rail, and bus)

HIGHWAY SYSTEM CHARACTERISTICS

The highway system in the Charleston region takes a pattern that closely follows the terrain. In most of the region, development and roadways have the highest densities in the river valleys. Within the traditional city centers, a grid pattern exists. However, in the growth areas such as Teays Valley and Cross Lanes, newer suburban patterns have emerged.

The region is a crossroads for a number of interstates and major highways. The major east-west routes include I-64 and U.S. 60. North-south travel is provided on I-77, I-79, U.S. 35, and U.S. 119. Important minor arterials include routes WV 62, WV 622 and WV 61.

HIGHWAY DEFICIENCIES

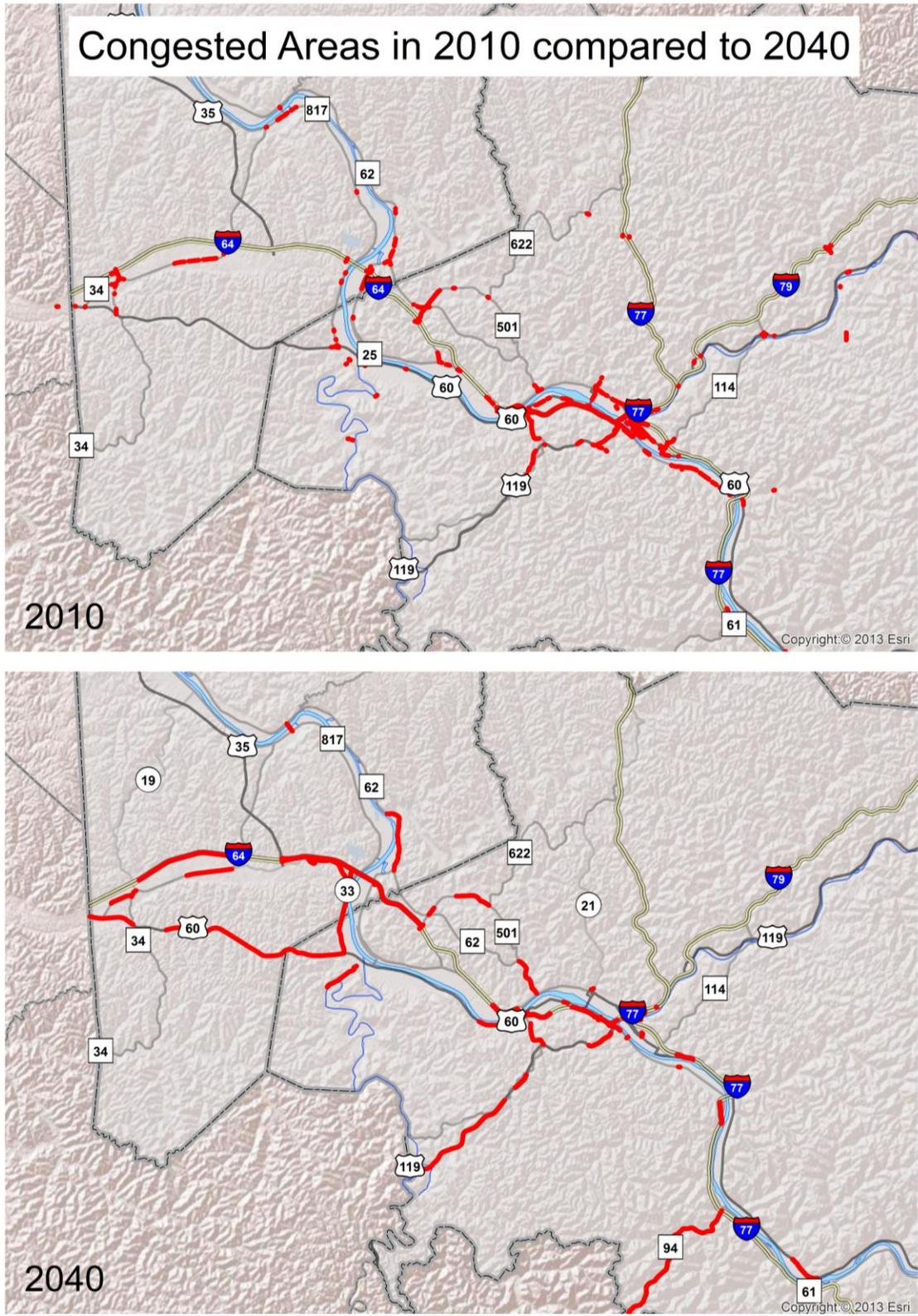
In its long-range transportation plan for the Charleston Metropolitan Area, the Regional Intergovernmental Council identified deficiencies in the transportation network using a travel demand model. The travel demand model for the Charleston Metropolitan Area was calibrated from an origin-destination survey conducted in 1993, current travel patterns and socio-economic data, and existing traffic volumes. The model was validated to replicate the observed travel characteristics for the base year, 2010. Using projections of population and employment for the year 2040, the travel demand placed on the transportation system was estimated.

The ratio of projected vehicle demand to available capacity for each link provides an estimate of roadway segment deficiency. This ratio is the **volume/capacity (v/c) ratio**. The v/c ratio measures the level-of-service of a roadway segment. To identify future deficiencies, three level-of-service groups are used: below capacity, near capacity, and over capacity. Roadway segments projected to have a v/c ratio greater than 1.0 are said to be over capacity. Segments with a v/c ratio between 0.80 and 1.0 are identified as near capacity. All segments with a v/c ratio less than 0.80 are judged to be operating below capacity in the future year.

The following map displays 2010 congestion compared to estimated 2040 congestion. The congestion data came from the recent travel demand model for the Charleston Metropolitan Area. More specifically, speed and GPS location data was obtained from TomTom for this graphical display. Roads with future deficiencies are expected to be:

- I-64
- US 60
- US 119
- WV 25
- WV 34
- WV 61
- WV 62
- WV 601
- WV 817
- WV 622
- WV 94

Figure 12: Congested Areas



PUBLIC TRANSPORTATION SYSTEM

Public transportation in Kanawha County is provided by the Kanawha Valley Regional Transportation Authority. KVRTA, a public corporation established under state law, assumed responsibility for operations in 1971, succeeding the private company that previously provided service. KVRTA's service area is Kanawha County. The system is funded by fares, county property taxes, federal funds, and a small amount of state funds, and is governed by a twelve-member board representing the county and the cities within the service area.

The public transportation system has three service components. The primary one is a regional fixed-route bus service available for use by the general public. The routes focus on downtown Charleston; most operate through downtown on the Laidley Transit Mall. The service coverage is extensive, reaching from Nitro on the west to Montgomery and Clendenin on the east, as far south as Eskdale, and as far north as Sissonville. Fixed-route services reach all fourteen municipalities in the county, as well as other developed areas. The routes that serve the most developed areas operate at 15-minute frequencies on weekdays, and at lower frequencies on Saturdays and Sundays. Routes extending into lower-density areas carry fewer riders and so operate at lower frequencies; some do not operate on Sundays and others do not operate at all on weekends.

A second component, which could be considered part of the first, is local circulation routes within the center of Charleston. One route links the state capitol complex on the east with the employment and retail areas within downtown, including the Town Center Mall. It is operated using buses that are replicas of trolleys. The other route focuses on the capitol complex, providing access to additional nearby parking.

The third system component is a demand-responsive paratransit system for people who, because of disabilities, are unable to use fixed-route service. Kanawha Alternative Transit (KAT) service is provided within the same service area as the fixed-route service, and is designed to comply with the federal Americans with Disabilities Act. The act requires paratransit service to be provided in the same area as fixed-route public transportation services, so expansion of the two service types must go hand-in-hand.

In recent years, Federal and local revenues as well as ridership have stabilized for KVRTA. It has also completed substantial renovations to its administrative offices, garage and parking facilities. KVRTA and RIC are currently completing work on a Transit Development Plan which will recommend substantial service changes.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle and pedestrian travel provide both mobility and health benefits. Regions around the U.S. are discovering that the health and quality of life benefits of these "active" transportation modes warrant greater consideration and investment. In 2013, the West Virginia legislature passed the Complete Streets Act, which urges the WVDOT to consider many alternative modes of transportation when constructing future roads. Also, a number of funding sources are available for bicycle and pedestrian improvements through the U.S. Department of Transportation, including the Transportation Alternatives Program (TAP), Congestion Mitigation Air Quality (CMAQ) program and the Recreational Trails Program.

FREIGHT MOVEMENT SYSTEM

Freight movement is addressed in this section by mode of transport. These modes include motor truck, rail, water, and air.

Motor Truck

Motor trucks comprise the largest single mode of freight transport in West Virginia. According to statistics from the West Virginia Motor Truck Association, trucks carry 84% of all manufactured freight transported in West Virginia. In 1998, 91 million tons of manufactured freight was transported into and out of West Virginia by truck. WVMTA claims that 84% of all West Virginia communities depend entirely on trucks to move their goods. Charleston is at the confluence of three major truck routes: Interstate 77/WV Turnpike, Interstate 64, and U.S. Route 35. Other important truck routes include U.S. Route 119 (Corridor G) and Interstate 79.

Trucks pose a special safety concern, due to their size, lack of maneuverability and potential for driver fatigue. In recent years the Commercial Drivers License regulations and safety enforcement have contributed to a decline nationally in accident rates involving trucks. Also, new technology should make it easier to enforce weight restrictions and other safety rules. One of the goals of WVDOT's Safety Management Committee is to improve the safety of commercial vehicles.

Rail

Kanawha County is served by two major railroads: CSX Transportation and Norfolk Southern Corporation (formerly Conrail). Most rail traffic in the MSA is on CSX, which serves industry along the southerly side of the Kanawha River, as well as the southern coal fields. Charleston is on CSX's principal mainline in West Virginia, which connects to Cincinnati and Richmond. Norfolk Southern serves industry on the north side of the Kanawha River and coal fields in the central part of the state.

An important concern for local planners is the relationship between the rail network and the street and highway system. There are many at-grade railroad crossings in the area. This situation often results in traffic delays and safety concerns and may inhibit emergency response. It is an objective of this plan to minimize the number of at-grade crossings while maintaining traffic flow. Where warranted by traffic volume and/or accident history, grade separation of existing grade crossings is recommended. This may allow the closing of other grade crossings in the vicinity. Of course, grade separation is expensive and must be done selectively. For most crossings, improvements will consist of installing or upgrading warning devices to include signs, cross bucks, flashing lights and/or mechanical gates. WVDOT, which is responsible for most public crossings, has an ongoing program to provide these devices.

Water

The Kanawha River basin is the largest northward flowing river system in the United States. The US Army Corps of Engineers maintains a navigation channel 200 feet wide and nine feet deep in the Kanawha River, from the mouth at Point Pleasant to a point near Deepwater, West Virginia about 91 miles above the mouth. Three navigation locks and dams are located on the Kanawha at Winfield, Marmet and London.

Movement of freight on the Kanawha River is largely one-way, as goods such as coal, chemicals, sand and gravel are shipped from the study area or other West Virginia origins downstream to destinations primarily out-of-state.

Recent projects at Winfield and Marmet have replaced the antiquated locks, greatly increasing their capacity and all but eliminating delays, which sometimes reached several hours.

Air

Yeager Airport, located three miles from downtown Charleston, is designated by the U.S. Customs Service as a Port of Entry. This allows area businesses to ship and receive goods directly on the international market.

Cargo air service is available through each of the scheduled airlines, as well as several parcel service companies. Because of its relatively high cost, air freight is generally limited to items which have a high value per unit of weight and/or a high premium on speedy delivery. Kanawha County does not have many industries which purchase or manufacture these items in significant quantities. Therefore, air freight accounts for a very small percentage of the freight shipments in Kanawha County.

INTERCITY PASSENGER SERVICE

Air

Passenger service is provided by several commuter carriers including American, United, Delta, Spirit, and US Airways. Yeager Airport provides direct flights to Dallas, Houston, Chicago, Washington DC, Atlanta, Detroit, Fort Lauderdale, Myrtle Beach, and Charlotte. In 2011 there were 282,704 passenger boardings (enplanements).

Rail

Intercity passenger rail service is provided by AMTRAK. The station is located along the Kanawha River on the opposite side of the river from the Charleston CBD. Currently, Charleston is on the Cardinal route, which provides direct service between Chicago and Washington, D.C. three days a week.

Bus

Intercity passenger bus service is provided by Greyhound with eleven arrivals daily. The station is adjacent to I-64 on the west end of the Charleston CBD, next to the Charleston Civic Center.

UTILITIES

ENERGY

Reliable, low-cost energy is available to residential, commercial, and industrial users throughout Kanawha County. Both electricity and natural gas rates are consistently below the national average. Fossil fuels such as coal, oil and propane are also available through local suppliers. In addition to providing energy at highly competitive rates, economic and industrial development incentives are offered through major electric power and natural gas utilities. These programs are intended to retain and encourage expansion of existing industries, as well as to recruit new industrial investors.

Electricity is provided by American Electric Power (AEP), which serves over 838,000 customers in southern West Virginia and nearly 7 million people in parts of seven states. Several electric generating plants are located in the Kanawha Valley.

Natural gas is provided by Mountaineer Gas, WV Power Gas Service, Union Oil & Gas Inc., and Southern Public Service Company. All offer competitive rates and dependable supplies.

PUBLIC WATER AND SEWAGE TREATMENT

Domestic and industrial water is supplied by West Virginia - American Water Company, which is rapidly expanding its service area throughout Kanawha County and the State of West Virginia.

Municipalities, public service districts (PSDs) and private companies provide water treatment and distribution, as well as wastewater collection and treatment.

Of the total 92,679 housing units in Kanawha County, 98% have potable water supplied by a public system or private service. West Virginia - American Water Company provides water treatment and distribution services for most of the urbanized area of Kanawha County. Some towns and cities maintain water systems.

WATER PROBLEMS

In order to enjoy an enhanced quality of life in Kanawha County and to be prepared for future community and economic growth, a safe, reliable and adequate supply of potable water is required. The most urgent needs to be satisfied are those of general public sanitation and fire protection. But a supply of safe drinking water is also critical to economic development activities, including manufacturing, food processing and preparation, beverage production, and other prospective employers.

Many otherwise developable sites in Kanawha County currently lack acceptable water service. Due to the number and dispersion of water systems with limited capacities, it is difficult to maintain, much less expand, these water systems. Poor planning, operation and maintenance are among the problems faced by some communities served by public and private water systems.

A major portion of the existing water systems is underground in the form of distribution lines. Many older systems are deteriorating and in need of replacement or upgrading. Many small systems have a limited customer base and are not self-sustaining. Other common problems among small system operators include:

- ◆ Limited system capacity
- ◆ Excessive water loss
- ◆ Lack of assurance of safe and acceptable water supply

- ◆ Lack of sustainable service (non-viable systems)
- ◆ Lack of emergency planning and response capacity

SANITARY SEWAGE PROBLEMS

There are currently 7 public wastewater operations serving Kanawha County. There is currently a plan to combine several of the existing operations into one large service district. The majority of phase 1 has been completed, at the end of phase 2 in 2020, the service areas will be as follows:

- City of St. Albans
- City of Charleston
- City of Dunbar
- City of South Charleston
- Greater Kanawha Valley PSD
- Elk Valley PSD
- Malden PSD

TELECOMMUNICATIONS

Kanawha County participated in the Regional Intergovernmental Council's *Regional Broadband Strategic Plan* (RBSP) completed in 2013. Even though Kanawha County has experienced recent population decline, access to affordable and reliable broadband service is essential to a growing economy.

Part of the RBSP included a review of best practices for sustainable adoption and increased utilization of high speed broadband that were successfully implemented in other states. In some cases, high-speed broadband initiatives were a priority consideration, paramount to critical infrastructure (i.e. roads, water and electricity). During this review it was discovered that in order to provide fast reliable access to underserved and unserved rural communities, motivation must exist for broadband and telecommunication providers to invest large capital expenditures. In other words demand must be present in order to supply the need.

The quality of life in Kanawha County, low cost of living, and accessible transportation corridors make the area attractive to both residential and business growth. Ensuring reliable and affordable broadband infrastructure is in place in priority areas is critical for economic development.

EDUCATION AND TRAINING

HIGHER EDUCATION

Several higher education institutions are located in Kanawha County, with additional graduate programs provided in the county by Marshall University, which has its main campus located 50 miles west of Charleston in Cabell County. Each school offers high quality undergraduate and graduate degree programs of various types.

- The University of Charleston is a privately-supported, independent university offering both undergraduate and graduate degree programs.
- Marshall University Graduate College caters to the working professional by offering opportunities to earn advanced degrees.
- West Virginia State University is a public, land-grant, and historically black university offering both undergraduate and graduate degrees.
- Bridgemont Community and Technical College recently merged with the Kanawha Valley Community and Technical College to form the BridgeValley Community and Technical College. BridgeValley will offer 2-year Associate of Science degrees and many 1-year technical and vocational skills programs.

PRIMARY AND SECONDARY EDUCATION

Kanawha County Schools offer a superior public educational program with traditional curriculum and progressive instructional approaches. Children in the county consistently score above the state averages on total basic skills tests. Special programs for gifted and learning impaired students are also offered through the public school system, along with School-to-Work and other special programs.

In order to better prepare students for their future, students choose from one of three learning pathways: College Prep, Tech Prep, or Occupational Prep. At the end of the eighth grade, Kanawha County students develop four-year study plans based on one of three career clusters: business, health and human services, or technology. Students then further refine their selected career clusters to determine their precise area of specialty. Their curriculum is selected to match their pathway of study.

Public schools in Kanawha County are governed by a six-member board. School Board members are elected on a non-partisan ballot to represent geographic regions of the county. Each board member serves a four-year term.

Christian and other private elementary and secondary schools further enhance the public education system in Kanawha County. Montessori and parochial schools in the county have a reputation for excellence when compared to local, state, and national performance records.

Pre-employment, post-employment, and pre-trained personnel job training programs are available from a variety of public and private agencies in Kanawha County. Two vocational-technical schools and one adult career center are operated by Kanawha County Schools. Combined with programs through the WV Department of Vocational Education, the needs of business and industry are served.

The *Workforce Investment Board (WIB)* is comprised of members representing business, education, public agencies, labor and the community. WIB helps local employers upgrade the skills of existing workers or new hires. WIB also implements job training programs funded through

the *Job Training Partnership Act (JTPA)* and *On-Job-Training (OJT)* programs, among other special efforts.

Education and training resources in Kanawha County include:

- three higher education institutions located in or significantly serving the county, with a combined, average annual enrollment of almost 8,000:
 - The University of Charleston (1,400)
 - Marshall University Graduate College (2,116)
 - West Virginia State University (2,500)
 - BridgeValley Community and Technical College (1,800)
- 74 public elementary and secondary schools to serve Kanawha County: 44 elementary, 14 middle schools, 8 high schools, 2 career and technical centers, 1 adult center and 2 community education centers. Total enrollment in public schools for the 2012-2013 school year was 28,458. *West Virginia Department of Education*
- 17 private and parochial schools in Kanawha County with a 2013 enrollment of approximately 2,300.
- 12 libraries with a total of over 676,000 volumes.
- Region 1 Workforce Investment Board—job placement and training programs

AGRICULTURE AND ENVIRONMENTAL ISSUES

AGRICULTURE

The average farm in Kanawha County is 95 acres producing goods valued at approximately \$3,101. The median age of farm operators is 56 years and 94.7% of all farms are operated by an individual or family. Agricultural uses, including cropland and pasture, remain the second-largest category of land use development in Kanawha County. Approximately 10,000 acres (1.7%) remain as farm operations, but that number has been declining rapidly. Suburban sprawl threatens to further erode this category of land use as the demand for new residential and commercial development sites grows over time. (*Kanawha County Extension Service*)

Flood Hazard Areas

Flooding, a major hazard in West Virginia and Kanawha County, results in loss of human life, property, and economic and social disruption when flood-prone lands are improperly utilized. Kanawha County and most local municipalities have adopted and enforce regulations to reduce flood losses for public and private land uses located in flood hazard areas.

However, most of Kanawha County was developed prior to the adoption of flood plain management regulations. Therefore, these regulations have the greatest potential in avoiding flood losses to new land uses, not in controlling losses to existing uses.

New projects and redeveloped properties must now be built in compliance with flood plain management regulations. In some cases, the flood hazard is so severe that nonfarm uses are cost-prohibitive to build and/or maintain.

The Biggert-Waters Flood Insurance Reform Act of 2012 was designed to allow premiums to rise to reflect the true risk of living in high-flood areas. The bill required flood insurance premiums to reflect real flood risks, which led to a 10 fold increase in premiums. The law ordered FEMA to stop subsidizing flood insurance for second homes and businesses, and for properties that experienced multiple floods.

The Homeowner Flood Insurance Affordability Act of 2014 is a bill that would delay the increases in flood insurance premiums that were part of the Biggert-Waters Flood Insurance Reform Act of 2012. The National Flood Insurance Program (NFIP) is currently \$24 billion in debt and taxpayers will be forced to pay for any additional payouts until that situation is solved.

In addition to delaying the onset of higher premiums for four years, the bill would allow homeowners who sell their homes to pass the lower flood insurance premiums on to the next homeowner, and allow time for the Federal Emergency Management Agency (FEMA) to decrease the cost of premiums and reassess the areas prone to flooding.

Kanawha County opposes the Bigger Waters Act and any similar legislation seeking unrealistic flood insurance rate increases. Kanawha County is also attempting to become part of the NFIP's Community Rating System to provide discounts on flood insurance premiums for residents and business owners.

RECREATION & ENTERTAINMENT

In West Virginia, Kanawha County is noted for its diversity of cultural and entertainment activities. Public and private recreational facilities are provided throughout Kanawha County. State, county and municipal governments own and manage the majority of these facilities, including those associated with public education. Several private and semi-private recreational facilities are restricted to use by members and their guests.

Kanawha County maintains six parks with access to many different activities. Other government entities and private organizations maintain a variety of other recreational facilities throughout Kanawha County. The tourism industry in Kanawha County accounts for 10,464 jobs and \$43,646,000 in annual wages (Workforce WV 2013).

LOCAL GOVERNMENT

Kanawha County is governed by a six-year term, three-member county commission. The *Kanawha County Commission* has the primary budgetary and administrative responsibility for operation of all county government functions. Working in cooperation with other elected officials, the commission provides a broad range of services to the citizens of Kanawha County.

There are 15 municipalities with residents in Kanawha County, two of which (Nitro and Montgomery) are partially located in adjoining counties. They range in population from 329 (Handley) to 51,224 (Charleston).

All have a mayor-council form of government, with the mayor serving as chief executive of the town or city. Each unit of government except Montgomery is a member of the *Regional Intergovernmental Council (RIC)*, which also serves Boone, Clay, and Putnam counties. The Kanawha County Commission annually contributes to public projects and programs located throughout the county, including those within municipal jurisdictions.

Table 11: Local Government Population and Households 2012

MUNICIPALITY	POPULATION - 2012	HOUSEHOLDS - 2012
Belle, Town of	1,267	617
Cedar Grove, Town of	1051	381
Charleston, City of	51,224	23,483
Chesapeake, City of	1,681	748
Clendenin, Town of	1,310	467
Dunbar, City of	7,864	3,507
East Bank, Town of	1,217	442
Glasgow, Town of	827	254
Handley, Town of	329	130
Marmet, City of	1,686	679
Montgomery, City of *	2,351	812
Nitro, City of *	7,198	2,974
Pratt, Town of	524	184
Saint Albans, City of	11,004	4,771
South Charleston, City of	13,402	6,308

Source: US Census Bureau, ACS 2012 5yr estimates.

* Portions of the cities of Montgomery and Nitro are located in adjoining counties

The Kanawha County Planning Commission maintains and updates the comprehensive plan, administers subdivision and flood plain management regulations, issues building permits and street addresses.

The Regional Development Authority manages public water treatment and distribution, sanitary sewerage collection and treatment, and solid-waste projects within Kanawha County.

The Boone-Clay-Kanawha-Putnam Regional Intergovernmental Council (RIC) is a regional planning and development organization made up of local units of government. RIC oversees the planning, programming, funding and management of public projects throughout the four-county region.

PUBLIC SAFETY & EMERGENCY SERVICES

The Metro 911 dispatch center, located in Charleston, provides enhanced 911 telephone service throughout the County, although 6,036 housing units are without a telephone.

The Kanawha County Sheriff provides tax collection and law enforcement services from detachments located in Charleston, Cross Lanes, Elkview, St. Albans, Sissonville and Quincy.

The WV State Police also provide law enforcement services throughout Kanawha County. The State Headquarters are located in South Charleston.

The Kanawha County Emergency Ambulance Authority, as well as private and volunteer organizations, provides emergency ambulance and non-emergency transport services throughout the county. Aero-Charter, Inc., provides air ambulance service through the Charleston Area Medical Center (CAMC).

Municipal governments and volunteer fire departments (VFDs) provide fire protection services throughout the county.

The Kanawha County Public Safety office manages chemical spills, natural disasters, catastrophic and other special emergency situations.