Chapter 2 | Regional Profile

Introduction

A regional transportation plan starts with a comprehensive analysis of regional characteristics and trends. Population and employment dynamics influence existing and future transportation needs, such as freight movement, public transportation demand, and commuting patterns. This chapter includes an assessment of socioeconomic trends and characteristics while also discussing the importance of environmental justice as it relates to the development of the *RIC Metropolitan Transportation Plan* (MTP).

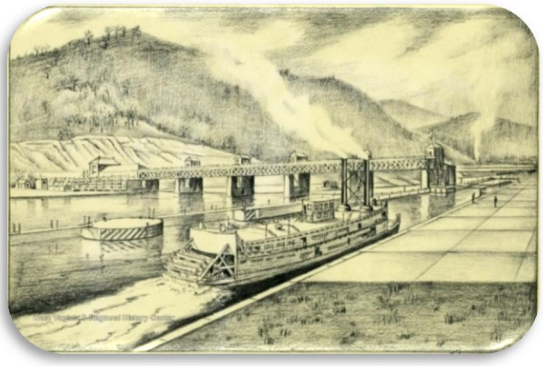
In this chapter, the *RIC MTP* provides relevant demographic information from the latest data available during the plan's development. The MTP illustrates both a historic and policy context for past and future development in the Kanawha Valley. This chapter serves as a resource to the region's intragency partners and constituents in their steering of this plan and future decision-making.

Kanawha Valley – A Brief History

The region's transportation and land uses were shaped by Kanawha Valley's first inhabitants. These indigenous groups farmed, hunted, and fished throughout the Kanawha Valley. Some of the earliest existing evidence of indigenous people in the Kanawha Valley were a system of territorial burial mounds.[1]

By the start of the 17th century, West Virginia's rivers were used to access the fertile valley farmland near the confluence of the Elk and Kanawha Rivers. When the European explorers arrived in the late 17th century, decades of conflict ensued as the colonizers and indigenous people attempted to establish territory.

The majority of the Kanawha Valley's history is centered on the most populous city, in West Virginia, Charleston. Established in the late 1700s, Charleston remained no more than a rural outpost. In 1813, after William Dickinson heard people were boiling brine from springs for the resulting salt in Appalachia, he invested in "salt properties" along the Kanawha River. These salt properties began



Drawing of steamboat at Marmet Lock

[1] Knollinger, Corey, 2019; Exploring West Virginia's Native American History, West Virginia Public

production in 1817 and flourished. The town of Malden became "the salt making capital of the east".[2] Ultimately, when the British salt supplies diminished, new market opportunities allowed wealth to flow into the Valley.

The Kanawha Valley's industrial and transportation boom was largely credited to coal development post-Civil War. Despite the observation of abundant natural resources documented by William Barton Rogers in the Old South's most thorough geological survey, minimal economic development occurred in the region.[3] Due to limited reliable transportation networks, industries in the Kanawha Valley could not compete in the national market. The only outlet to export coal from the valley was the Kanawha River. Unfortunately, the river proved to have enormous constraints. It was only navigable six months out of the year and littered with natural debris.[4] The Kanawha Valley contained some of the state's most abundant bituminous coal fields yet had no service by barge or rail.[5] The lack of transportation infrastructure led to the near collapse of the region's coal-oil production as mining operations struggled to produce profit.

At the end of the Civil War, the combination of federally constructed locks and dams along the Kanawha River, the private interests that built the Chesapeake and Ohio (C&O) Railroad, and an infant state government that had a "highly benevolent attitude toward the coal industry," led to an influx of capital and a new wave of immigrants. Only then did the energy industry achieve dominance in the economic portfolio of the Kanawha Valley, which now competes in the nation's market.[4]

C&O Station

The C&O Railway through Charleston was completed in 1873 and connected Richmond, Virginia to Huntington, West Virginia.[6] The Kanawha River—which separated the city and the railroad—remained a major obstacle to development in Charleston. Prior to the construction of the South Side Bridge, a system of ferries was necessary to transfer goods from railcars to the city. Through the arrival of the railroad and construction of the South Side Bridge, more supplies and goods could arrive to the Kanawha Valley via rail.

The second major railroad, the Ohio Central Railroad, arrived in the region around 1883 and linked Charleston with Toledo, Ohio. In 1893, the Kanawha and Michigan Railroad took over the rail line and a series of extensions eventually connected the coalfields of West Virginia with the Great Lakes. Today, Norfolk Southern manages the railroad.

One of the earliest American examples of brick-paving roadway experiments occurred on Summers St. in Downtown Charleston. Mordecai Levi patented a system of layering stone, tar, sand, and brick.[7] While it was not the first brick-paved roadway, it was a notable and early implementation of an innovative road surfacing method.

By 1960, the new Eisenhower Interstate System had expanded to more than 20,000 miles of federal highway. By 1959, only a ten-mile section of highway in Wheeling and a fifty-mile section connecting Huntington with Charleston

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[2] J.Q. Dickinson Saltworks, Our History, Retrieved 2020, https://www.jqdsalt.com/timeline/ Broadcasting As, retrieved October 2020.
[3] Charles S. Sydnor, "State Geological Surveys in the Old South," in David Kelly Jackson (ed.), American Studies in Honor of William Kenneth Boyd (Durham, 1940), 93.
[4] Coal Mining in the Kanawha Valley to 1861: A View of Industrialization in the Old South Otis K. Rice
[5] Eavenson, First Century and a Quarter of American Coal Industry, 270-71, 427-28.
[6] Charleston Courier, January 28, 1873.
[7] U.S. Patent No. 401,752. (1889). Washington, DC: U.S. Patent and Trademark Office.

had been built. The central and southern region of the state had been left behind by new investment in the federal highway system. Due to challenging topography, it would be costly and challenging to construct a highway system in this area of the state.[8]

Other opportunities to invest in the state's infrastructure would soon come. The governors of Alabama, Kentucky, Maryland, North Carolina, Pennsylvania, Tennessee, Virginia, and West Virginia established the Conference of Appalachia Governors (CAG) to explore federal investment opportunities in 1961. The Conference concluded that they could identify regions that had high growth potential outside of areas where federally funded road projects could be built.[9]

Bob McDonough (right) looking over a map of West Virginia with JFK and others.

President Kennedy formally convened the President's Appalachian Regional Commission (PARC). PARC was a group of state governors and Cabinet-level officials tasked with addressing persistent economic disparities in the region. PARC's mission was to draw up "a comprehensive program for the economic development of the Appalachian Region."[10] Thanks to these efforts, the federal government allocated more than $600 million for the construction of I-81 and the final stretch of I-79, which connects Charleston with Pittsburgh, Pennsylvania.

PARC's work informed the Appalachian Regional Development Act (ARDA) which was signed by President Lyndon B. Johnson into public law on March 9, 1965. This led to the inception of the Appalachian Development Highway System (ADHS), which is a 3,090-mile network of highways linking the region to national Interstates.[11]This highway system has generated economic development across Appalachia with over 30 corridors providing access to regional and national markets, contributing to growth opportunities and improving access in Appalachia.

Population Trends

Between 1880 and 1920, the population of Charleston grew dramatically from 4,192 to 39,608 while Kanawha County increased from 32,466 to 199,650. The growth of urban jobs, increase in population, and growth of traffic continued throughout the Great Depression and World War II.

In 1956, the National Interstate and Defense Highways Act brought a newfound emphasis on the automobile and increased mobility. Road construction began in 1954 with the completion of the West Virginia Turnpike between Princeton and Charleston. Eventually, three major interstates—I-64, I-77, and I-79—would converge in the heart of Charleston and provide access to the Midwest, Northeast, and South.

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[8] Bureau of the Census, Eighteenth Summary of the Census, 1960, I-419.
[9] West Virginia Department of Transportation Planning and Research Division: Intermodal Special Projects Division. West Virginia National Highway System Report. Charleston, West Virginia.
[10] Fleming, Kennedy vs Humphrey, 165-170
[11] About the Appalachian Regional Commission. (2020, August 18). Retrieved December 12, 2020, from https://www.arc.gov/about-the-appalachian-regional-commission

Downtown Charleston, circa 1900

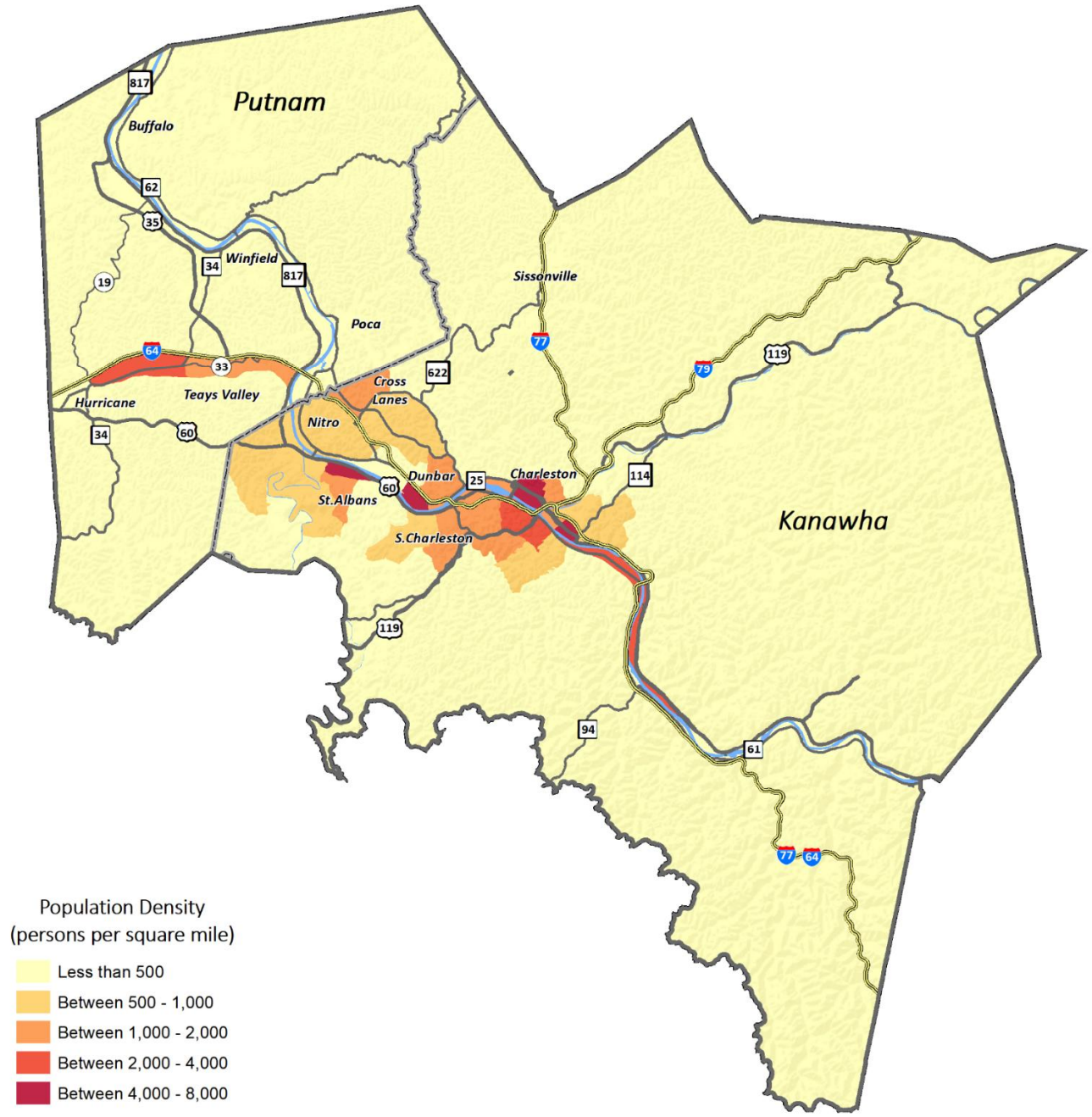
The combination of enhanced mobility provided by the automobile and suburban-oriented development led to the decline of the region's population. After more than a hundred years of continuous growth, Kanawha County entered a 50-year era of decline. Two dramatic drops occurred in the 1960s and 1980s, when the county's population shrank by more than 2,300 people per year. After 1990, the rate of decline slowed considerably; the average annual loss between 2000 and 2010 was about 700 people. The majority of loss was from the central city of Charleston, which declined by 11.0% (a reduction of 5,887 people).

During Kanawha County's population decline, Putnam County's population continued to grow. Putnam County was the only county in West Virginia to have grown continuously over the past 50 years, doubling from 27,625 people in 1960 to 55,486 in 2010 (an average of 560 additional people every year).

The 2014 American Community Survey (ACS) showed 191,765 people in Kanawha. Putnam County's 2014 population of 56,356 shows a gain of 870 residents since 2010. Although increasing, Putnam County's population growth rate has slowed. Error! Reference source not found.Figure 2-1 shows the density of population in Kanawha and Putnam counties.

In 2018, Putnam County's population growth began to slow, adding only 56 residents on average from 2015 to 2018 with a population 56,652. Kanawha County lost another 5,000 residents during the 3-year time period, with 2018 ACS data showing a population of 185,710. (U.S. Census Bureau; 2015 & 2018 American Community Survey, Table DP05).

Figure 2-1: Population Density



Housing and Household Characteristics

When the 2014 ACS was conducted, it was estimated that there are 103,984 households within Kanawha and Putnam counties. Similarly distributed to the regional population, nearly 80% (82,531) of the households were in Kanawha County. Putnam County contained about 20% (21,453) of the region's households. Four years later, 2018 data shows a similar distribution, but with the number of households in the region increasing by approximately 12,572, a 12% increase in four years.

The average household size across the region is 2.53 persons per household. The median household income increased to $52,531 per year. The median household since the previous long-range plan has increased across the region. Approximately 75% of households are owner-occupied while 24% are renter-occupied. The percent-owner occupied has increased slightly since the last long-range plan by more than 2%. Table 2-1 summarizes the household characteristics of the counties and provides regional estimates based on the data.

Table 2-1: 2018 Household Characteristics

COUNTY	NUMBER OF HOUSEHOLDS	AVERAGE HOUSEHOLD SIZE	MEDIAN HOUSEHOLD INCOME	PERCENT OWNER-OCCUPIED	PERCENT RENTER-OCCUPIED
Kanawha	92,463	2.38	$45,426	68.8%	31.2%
Putnam	24,093	2.68	$59,636	82.3%	17.7%
Regional	116,556	2.53	$52,531	75.5%	24.5%

U.S. Census Bureau; 2018 American Community selected housing characteristics, Table DP04

U.S. Census Bureau; 2014 American Community Survey 5-year Estimates, Tables S1101 & B19013

Employment

U.S. Census data estimates that in 2017, Kanawha and Putnam counties had 129,537 primary jobs with only 103,749 working residents. This means that Kanawha and Putnam counties have more jobs than available workers.

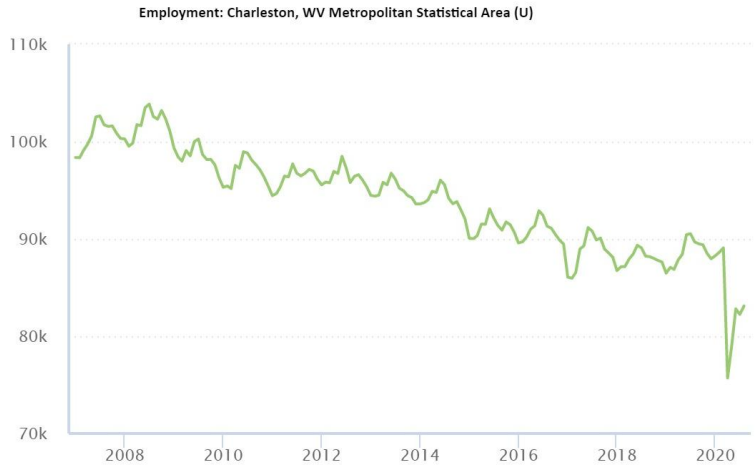
The City of Charleston holds the largest share of regional employment, which is approximately 37.4%. South Charleston has the next greatest share with 7.5%. Approximately 43.2% (35,227) of Kanawha County's employees commute to the City of Charleston for work. Since 2004, the number and share of employees both living and working in the City of Charleston has decreased nearly 26.0% from 15,912 in 2004 to 12,557 in 2014; however, by 2017 the decline began to flatten with the share of employees reaching 12,195 in 2017. The major employers in Kanawha County include the State of West Virginia, health care providers such as Charleston Area Medical Center (CAMC), the Kanawha County Board of Education, West Virginia State University, and the University of Charleston.

Teays Valley is the primary job center in Putnam County, holding the third largest share of regional employment. Teays Valley accounts for over one-quarter (6,333) of Putnam County's total employment. Other major employers in Putnam County include:

- The Putnam County Board of Education
- Toyota Motor Manufacturing
- Teays Valley Hospital in Hurricane

Approximately 11% of Teays Valley residents work locally. Around 24.2% commute to work in Charleston, while 7.2% commute to Huntington and 6% to South Charleston.

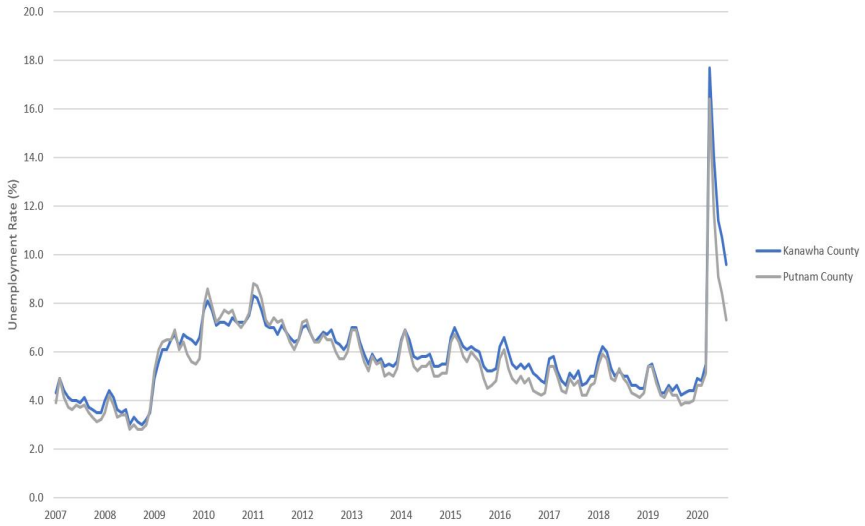
Figure 2-1: Employment: Charleston, WV Metropolitan Statistical Area



Unemployment

The Bureau of Labor Statistics indicates that unemployment rates have fallen at regional, state, and national levels since the Great Recession. The Great Recession—which lasted from December 2007 to June 2009—had significant impacts on Kanawha and Putnam counties. The recession resulted in significant job loss followed by a slow economic recovery. Unemployment had fallen nearly to pre-2008 levels prior to the COVID-19 pandemic. Recent reports indicate the region is slowly recovering. By September 2019, the unemployment rates for Kanawha County and Putnam County had reached 4.2% and 3.8% respectively. If this pace of recovery continues, the region could see a sustained pre-2008 unemployment rate or better.

Figure 2-3: Employment: Charleston, WV Metropolitan Statistical Area



Bureau of Labor Statistics; Local Area Unemployment Statistics

Economic Development Initiatives

Formerly known as the Charleston Civic Center, the $110 million renovation and expansion of the Charleston Coliseum & Convention Center was completed in October 2018. The new Convention Center serves as the premiere event venue for people from all over the state and nation.

The State recently approved the first 13-acre phase of the Elkview Commons project, a 44-acre commercial and retail development site located off Frame Road, near the Elkview exit off Interstate 79. The project will be funded privately by a new TIF district in Elkview. [12]

[12] Hamilton, Charleston Gazette-Mail. State approves Kanawha's plan for Elkview Commons development project, 21 Oct. 2020.

The City of South Charleston plans to use funding from the proposed tax increment funding (TIF) district to initiate phases two and three of the West Virginia Regional Technology Park's Master Plan. This will expand the developable land by 50 acres and create an entrance by the Jefferson Road Seven-Eleven following the Jefferson Road renovations. The City of South Charleston is currently building the new Park Place Mall which includes a new retail, restaurant, and grocery shopping complex across from Riverwalk Mall.[13]

Yeager Airport recently announced it will receive $1.2 million from the U.S. Economic Development Administration. The funds will be used to build a sewer line on Eagle Mountain Road and to build an aircraft parking apron for its new flight school.[14] This is on top of the tens of millions of dollars the FAA has continued to invest in Yeager Airport for safety and capacity improvements. In November 2019, Spirit Airlines announced it would offer non-stop two-way flights to and from Orlando, FL.[15] The airport generates nearly $175 million in total economic output annually and creates 1,876 full-time jobs. The airport also brings in 95,000 out-of-state visitors who spend $37 million statewide on food, lodging, entertainment, and shopping, according to a study by Marshall University's Center for Business and Economic Research.[16]

Travel Characteristics

Regional Linkages

Regional access in the Kanawha Valley is provided by three major Interstate facilities and three major US facilities: I-64, I-77, I-79, US 35, US 60, and US 119. These routes serve to connect Kanawha and Putnam counties to Huntington, Morgantown, Parkersburg, and Beckley in West Virginia; Dayton, Columbus, and Cleveland in Ohio; Lexington, Kentucky; Roanoke and Richmond, Virginia; and Winston-Salem, North Carolina.

Interstate 64 is an east-west Interstate freeway with current west termini in Lake Wentzville, Missouri and Chesapeake, Virginia in the east. There are 184 miles of Interstate 64 within the state of West Virginia, connecting Huntington, Charleston, Beckley, and Lewisburg.

Interstates 64 and 77 follow the same alignment between Charleston and Beckley. Between the easternmost crossing of the Kanawha River and their split, the facility is operated as part of the West Virginia Turnpike, and vehicular movements are tolled.

Interstate 77 is a north-south Interstate freeway with current termini in Columbia, South Carolina in the south and Cleveland, Ohio in the north. The facility is a toll road for 88 miles of its 186 miles within the state of West Virginia

[13] Garland, Charleston Gazette-Mail. South Charleston tech park to acquire land, new entrance, 21 Feb. 2017
[14] WCHS, Three W.Va. airports, including Yeager, Tri-State, to receive federal grant improvements, 13 Oct 2020
[15] U.S. News, Associated Press, 19 Nov 2019
[16] Steelhammer, Gazette-Mail

and shares its alignment with Interstate 64 between Beckley and Charleston. I-77 connects Beckley, Charleston, Princeton, Bluefield, and Parkersburg.

Interstate 79 is a north-south Interstate freeway with current termini in Charleston, West Virginia to the south and Erie, Pennsylvania to the north. Approximately 160 miles of this facility traverses West Virginia, and it connects Charleston to Clarksburg, Fairmont, and Morgantown and Pittsburgh, Pennsylvania outside the state.

US 35 is a north-south US highway connecting Charleston and Michigan City, Indiana. The route is being relocated in Putnam and Mason counties to a new four-lane facility, which should provide congestion relief for motorists traveling between Scott Depot, Teays Valley, Fraziers Bottom, and Pliny.

US 60 is a major east-west US highway, stretching over 2,600 miles between Quartzsite, Arizona and Virginia Beach, Virginia. Within the state of West Virginia, the route connects Huntington, Charleston, and Lewisburg.

US 119 is a spur of US Highway 19, connecting Pikeville, Kentucky to Sandy Township, Pennsylvania. Within the Kanawha-Putnam planning area, the facility is known primarily as Corridor G and serves as a major connection between the residential suburbs south of Charleston and the downtown area. Appalachian Corridor G begins in Williamson, on the Kentucky State line, and ends at MacCorkle Avenue.

Commuting Patterns

An estimated 81,506 residents both live and work in the two-county region, while 23,497 leave the area for work. Those leaving are primarily traveling west to Huntington and southeast to Beckley.

U.S. Census data indicates that approximately 16% (9,881) of all Charleston employees travel over 50 miles to work in the city. Conversely, 72% of working Charleston residents travel less than ten miles to get to work. In Putnam County, the mean travel time to work in 2018 was 26 minutes. Figure 2-4 shows the distribution of commute times for the two-county region.

From Teays Valley, most commuters travel eastbound rather than westbound. For example, 24.2% (1,584) down from 27.0% (1,683) of workers who live in Teays Valley commute daily to Charleston; 7.2% (470) up from 6.5% (406) commute west to Huntington. Meanwhile, 7.8% (517) commute east to Nitro or South Charleston.

As population growth transitions to low density residential and commercial development areas, the dependence on motor vehicles increases, accompanied by increased traffic congestion. The suburban population growth accounts for greater and lengthier vehicle trips from Teays Valley to Charleston. In addition, more cars and school buses make twice-daily rounds to fast-growing suburban schools. On average, workers in Putnam County spend nearly an hour a day driving to and from work with a 24.9-minute average one-way travel time.

Figure 2-4: Distribution of Commute Times

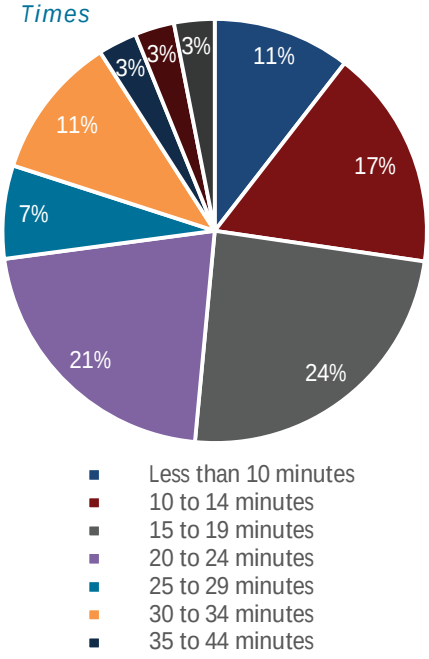
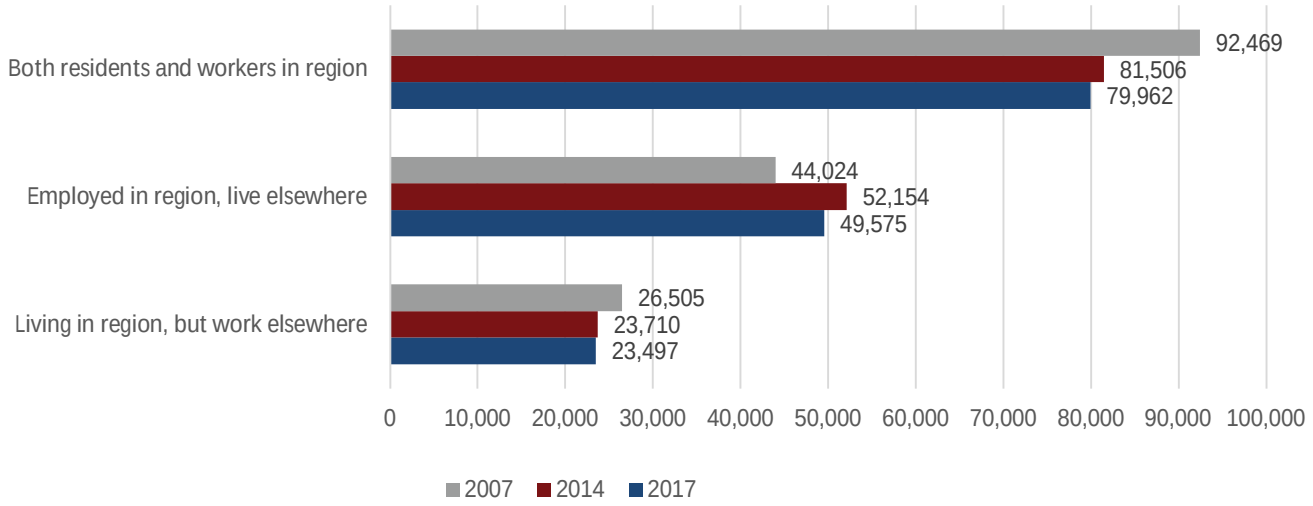


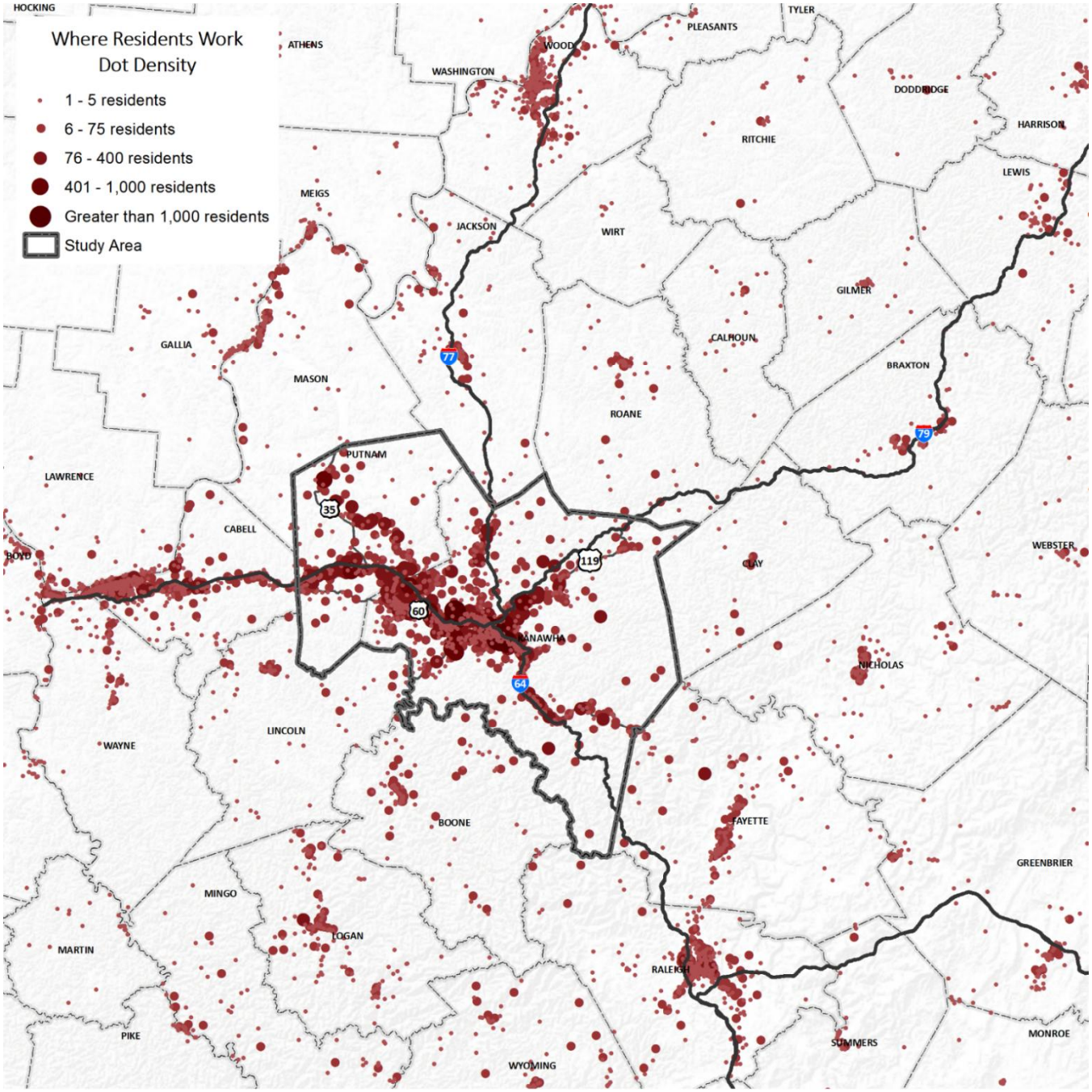
Figure 2-5 below summarizes the inflow and outflow of commutes in Kanawha and Putnam counties. Population losses in Kanawha County account for much of the decline. Most notably, the number of those living in the region, but working elsewhere has the least sharp decline. The sharpest decline flow category was with those who are employed in the Kanawha-Putnam region but live elsewhere. Figures 2-6 and 2-7 further display commute patterns.

Figure 2-5: 2017 In-flow and Out-flow of Commutes for Kanawha and Putnam Counties



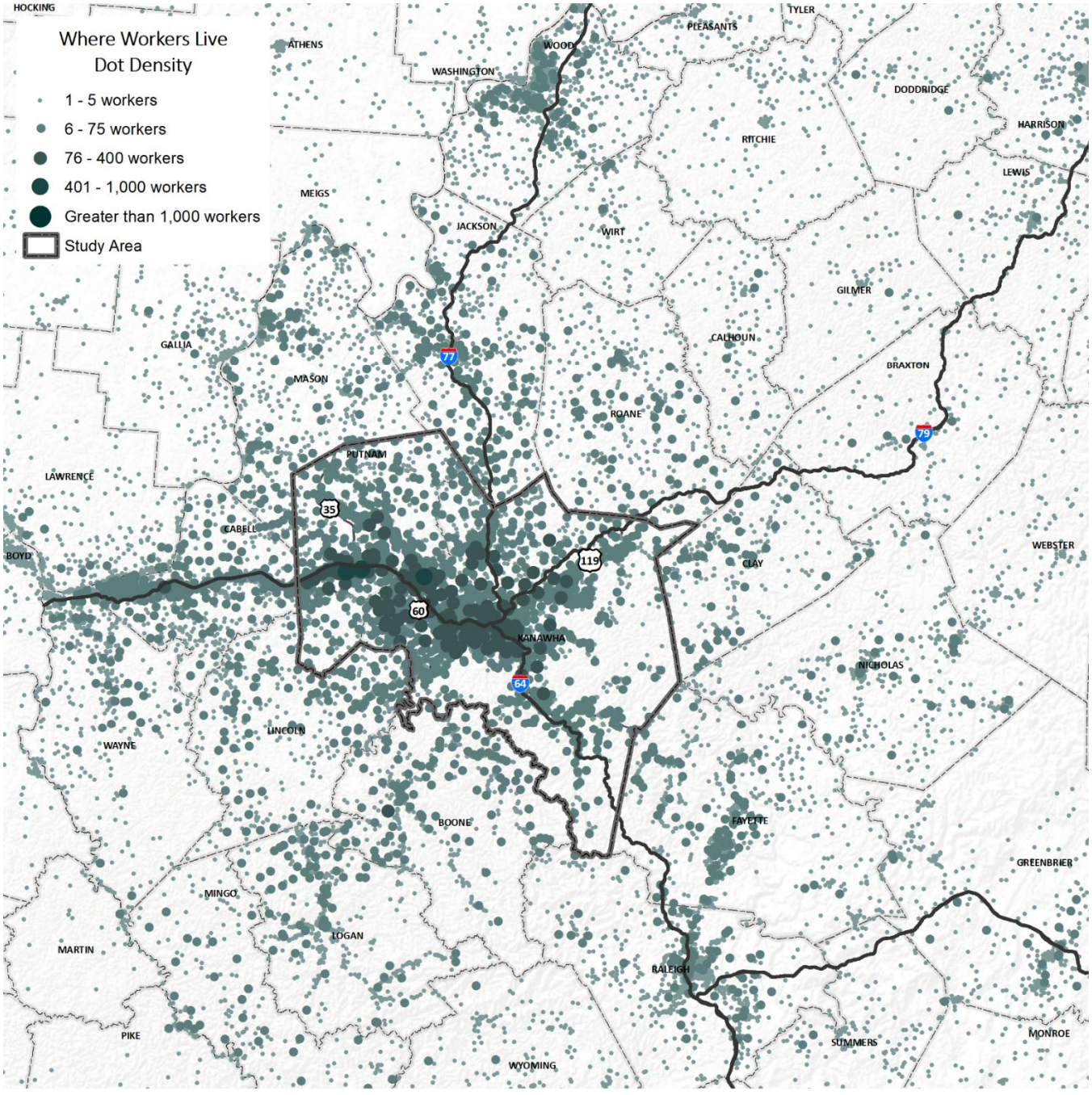
U.S. Census Bureau; 2018 American Community Survey 5-Year Estimates, Table S0801
U.S. Census Bureau; OnTheMap Application and LEHD Origin-Destination Employment Statistics

Figure 2-6: Where Kanawha and Putnam Residents Work



U.S. Census Bureau; OnTheMap Application and LEHD Origin-Destination Employment Statistics

Figure 2-7: Where Kanawha and Putnam Residents Live

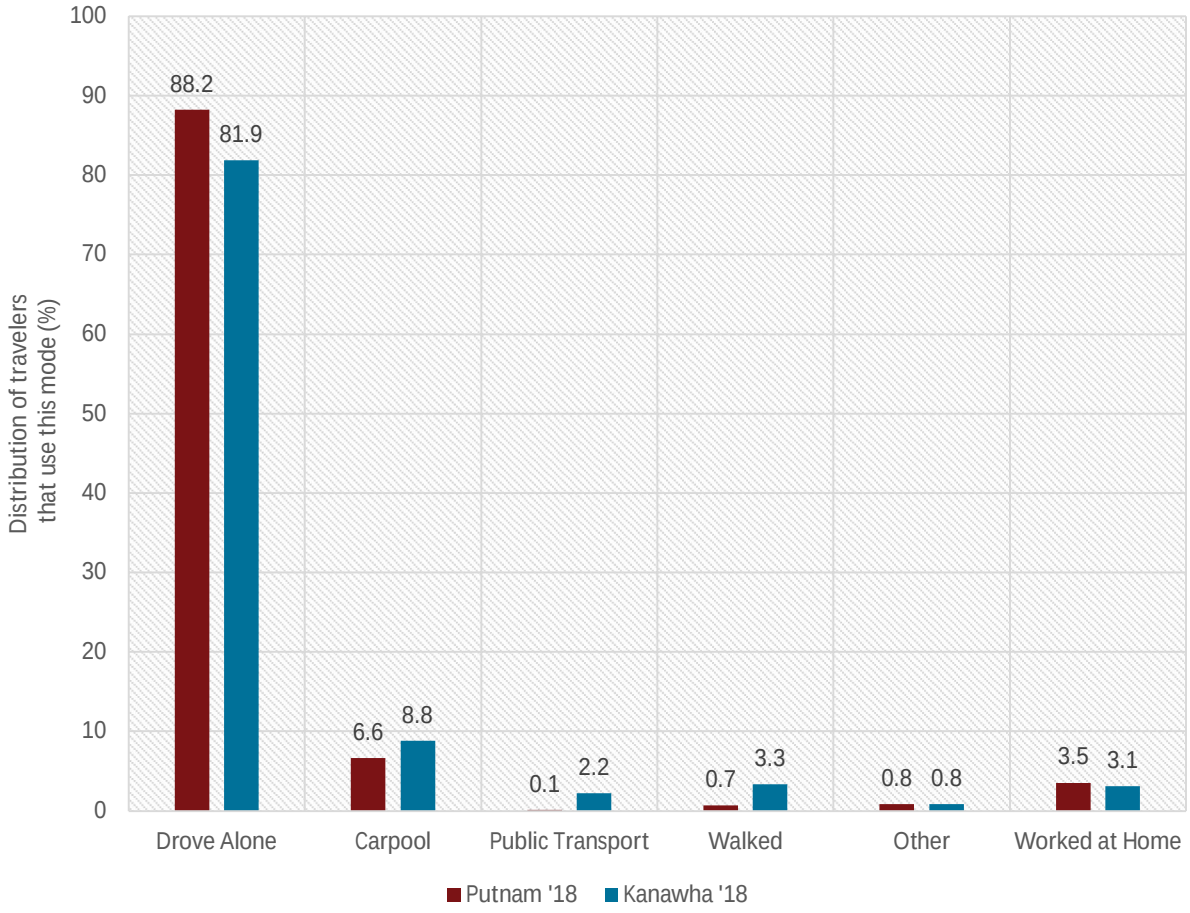


U.S. Census Bureau; OnTheMap Application and LEHD Origin-Destination Employment Statistics

Mode Choice

In both counties, most workers drive alone to work (see Figure 2-8). A greater portion of workers in Putnam County (88.2%) drive alone to work than those in Kanawha County (81.9%), however Kanawha County had the greater increase in share of single occupancy motor vehicle users. Carpooling accounted for the next most common mode of commuting. Approximately 8.8% of workers in Kanawha County carpool, down from 13.4% in 2018, while only 6.6% of workers in Putnam County carpool. In both Kanawha and Putnam counties, 3% of commuters work from home. By 2018, public transportation increased its share of mode choice in Kanawha County, while walking and other (bicycle, taxi, etc.) declined. Meanwhile, in Putnam County, almost no commuters use public transportation or other modes, while 1% of commuters walk to work. There is no public transit agency that provides service to Putnam County.

Figure 2-8: Means of Transportation to Work



Environmental Justice

The Environmental Protection Agency (EPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

This effort is consistent with Title VI of the Civil Rights Act of 1964 and a 1994 Presidential Executive Order requiring all federal agencies to make environmental justice part of their missions. Environmental justice was enacted to avoid the use of federal funds for projects, programs, and activities that would have disproportionately high and adverse effects on low-income and minority populations; environmental justice helps to ensure an equitable distribution of benefits and burdens. The U.S. Department of Transportation (USDOT) promotes environmental justice as a vital part of the transportation planning process as well as individual project planning and design. The environmental justice assessment incorporated into the *RIC MTP* is based on three fundamental principles derived from guidance issued by the USDOT:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations

As part of the *RIC MTP*, the geographic distribution of minority and low-income populations was identified so that the positive and negative effects of various transportation investments could be evaluated. RIC also pursued a robust public involvement process, ensuring opportunities for public input in the decision-making process. RIC seeks to develop programming that ensures that collection, analysis, mapping, and publication of data that will analyze the distribution of benefits and costs of the Transportation Improvement Program (TIP) and MTP.

The environmental justice screening conducted for this plan is not intended to quantify specific impacts. The screening is intended to guide the development of a plan that is equitable in terms of both costs and benefits. A critical purpose of this screening is to provide a framework to gauge the relative impacts of these projects in the community. As individual projects progress to planning and programming, each project will require further and more detailed analyses to identify and minimize specific community impacts on a project-by-project basis. The National Environmental Policy Act (NEPA) provides a framework to foster effective, efficient, and consistent consideration of environmental justice for decision-making on federal actions that affect the environment and human health.

The following thematic maps use 2018 American Community Survey 5-year estimates data to show the distribution of traditionally disadvantaged population groups by census tracts. Figure 2-9 highlights minority populations, Figure 2-10 shows populations living below the poverty line, Figure 2-11 identifies elderly populations, and Figure 2-12 looks at zero-car households. When overlaid with proposed roadway projects, the maps provide a useful tool for analyzing and communicating potential impacts. The results of the plan recommendations with respect to environmental justice and the identified transportation-disadvantaged groups are discussed in the Appendix.

Figure 2-9: Percent Minority Population

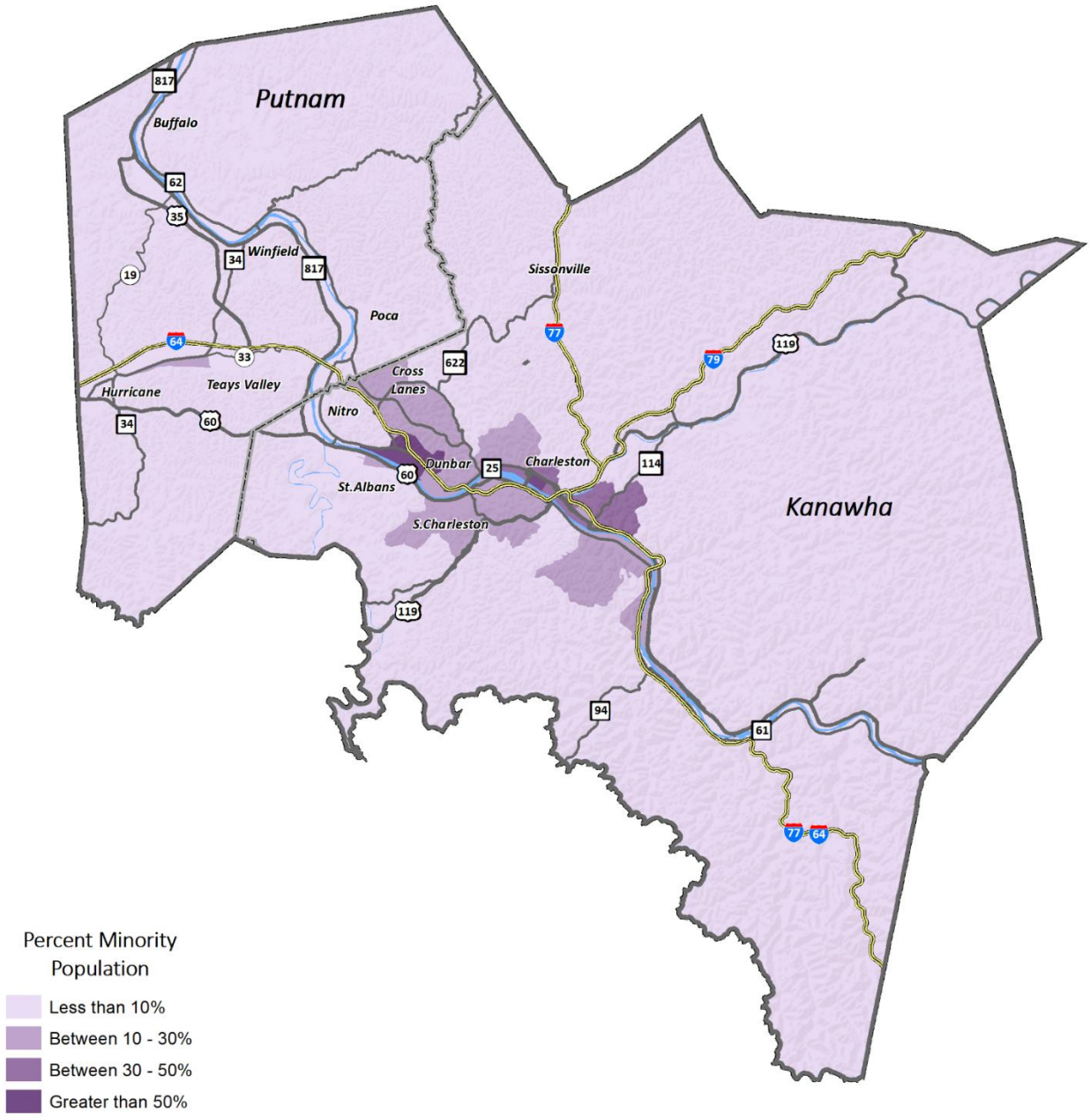


Figure 2-10: Percent Living Below Poverty Line

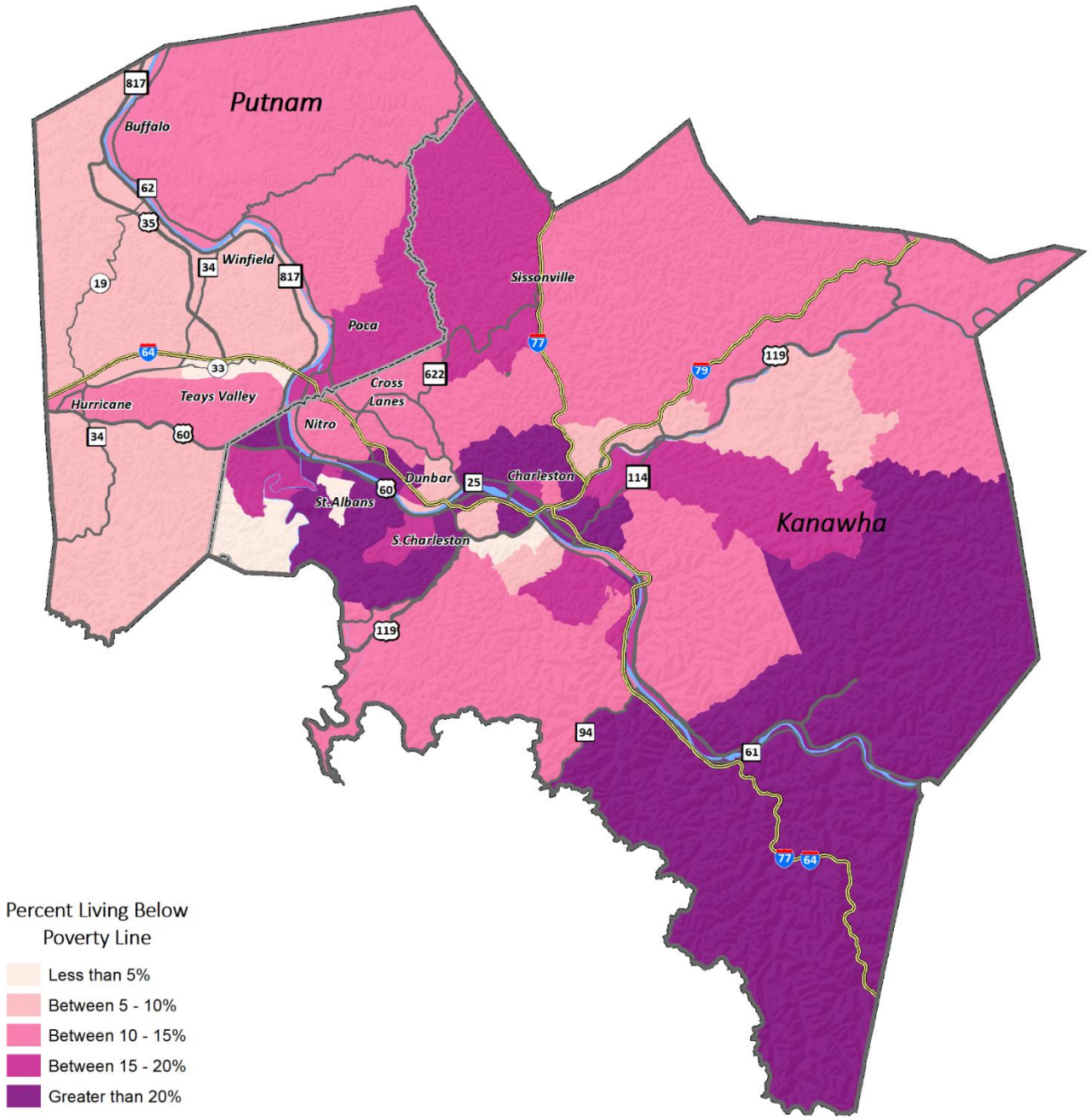


Figure 2-11: Percent Elderly

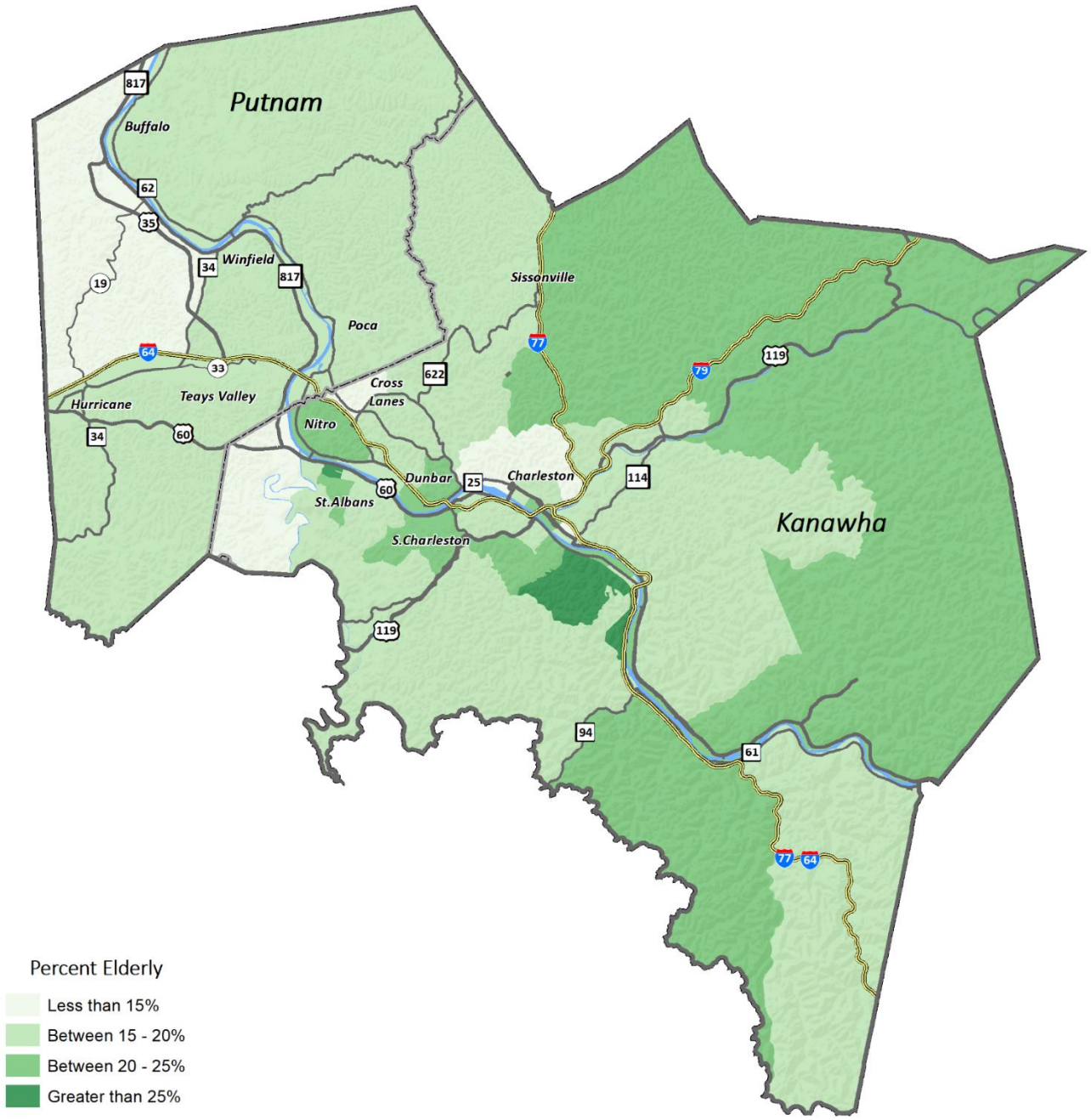


Figure 2-12: Percent Zero Vehicle Households