

"LET'S WORK TOGETHER & THINK BIG TO RESHAPE OUR COMMUNITY FOR THE FUTURE GLORY DAYS"

LONG RANGE TRANSPORTATION PLAN Brooke, Hancock & Jefferson County

2045



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RESOLUTION 2020-7

THE BROOKE-HANCOCK-JEFFERSON METROPOLITAN PLANNING COMMISSION AND THE BROOKE-HANCOCK-JEFFERSON TRANSPORTATION STUDY POLICY COMMITTEE RECOMMENDATION IN THE MATTER OF ADOPTING AN UPDATE OF THE TRANSPORTATION PLAN AND DEMONSTRATING CONFORMITY TO APPLICABLE NATIONAL AMBIENT AIR QUALITY STANDARDS

- WHEREAS,** the Brooke-Hancock-Jefferson Transportation Study Policy Committee is designated as the Metropolitan Planning Organization jointly by the Governor of the State of Ohio, acting through the Ohio Department of Transportation and by the Governor of the State of West Virginia, acting through the West Virginia Department of Transportation, Division of Highways, all in cooperation with locally elected officials for Brooke and Hancock Counties, West Virginia, and Jefferson County, Ohio; and
- WHEREAS,** the Brooke-Hancock-Jefferson Metropolitan Planning Commission is, pursuant to Executive Order 12372, designated the Metropolitan Clearinghouse for the above-named counties; and
- WHEREAS,** the BHJMPO has, pursuant to 23 United States Code 134, and 49 United States Code 1602(a)(2), 1603(a), and 1604(g)(1) and (2), caused a Transportation Plan consisting of its Long Range Transportation Plan adopted May 2016; and
- WHEREAS,** the BHJMPO has, pursuant to 23 United States Code 134, and 49 United States Code 1602(a)(2), 1603(a) and 1604(g)(1) and (2), adopted a Biennial Transportation Improvement Program for Fiscal Year 2021 through 2024 found to be consistent with the Long Range Transportation Plan; and
- WHEREAS,** the BHJ Metropolitan Planning Commission (BHJ) is initiating a new transportation conformity determination for its 2045 Transportation Plan Update and new 2021 – 2024 Transportation Improvement Program (TIP).
- WHEREAS,** the BHJ region is a US EPA designated 1997 Ozone Standard “Orphan” area and a 2006 PM2.5 Standard Maintenance area with a mobile source insignificance finding. As a 1997 Ozone Standard “orphan area” and consistent with US EPA’s November 29, 2018 guidance resulting from the South Coast II Court Case, BHJ will advance a qualitative 2045 Transportation Plan Update and new 2021 – 2024 TIP conformity determination.
- WHEREAS,** as a 1987 PM10 Standard Maintenance Area Jefferson County on December 11, 2000 (65 FR 77313) a finding that “transportation-related emissions do not contribute to PM10 concentrations”. As a 1987 PM10 Standard, the Hancock and Brooke counties (part)-the City of Weirton as amended on September 12, 2006 (71 FR 40023) and Brooke County (part)-the City of Follansbee on August 27, 2003 (68 FR 51459) a finding that mobile sources as insignificant cause of nonattainment emissions in both areas.

WHEREAS, as a 2006 PM2.5 Standard Maintenance area with a mobile source insignificance finding, a regional emissions analysis is not required - 40 CFR 93.109(f). BHJ will make a qualitative 2006 PM2.5 Standard Maintenance area 2045 Transportation Plan Update and new 2021 – 2024 TIP conformity determination.

WHEREAS, adequate opportunity for citizen and local government involvement in the development and review of the Transportation Plan Update has been the result of the process and techniques used by the BHJTS staff in preparing the document.

WHEREAS, the BHJTS Technical Advisory Committee by action taken on April 22, 2020, at a regularly called meeting recommended that the above mentioned plan be adopted as the Year 2045 Long Range Transportation Plan for the BHJ region subject to any revisions required as a result of review by various State or Federal agencies.

NOW, THEREFORE, BE IT RESOLVED:

1. That this Committee reaffirms its approval of the Long Range Transportation Plan as the Transportation Plan for the BHJTS Region including Brooke and Hancock Counties of West Virginia and Jefferson County of Ohio, and recommends that its members incorporate these improvements into their planning for transportation improvements in their governmental units;
2. That this Committee affirms the consistency between the transportation plan and the State Implementation Plans for Air Quality;
3. That this Committee makes a qualitative transportation conformity determination for the Plan and the current 2021 – 2024 BHJ Transportation Improvement Program;

ADOPTED, this 22nd day of April 2020, at the regularly scheduled joint meeting of the Brooke-Hancock-Jefferson Metropolitan Planning Commission and the Brooke-Hancock-Jefferson Transportation Study Policy Committee.



Dr. Thomas Graham
Chairperson

ATTEST:



Michael J. Paprocki
Executive Director

SECTION 1: GOALS, OBJECTIVES, ISSUES AND STRATEGIES

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SECTION 1 - GOALS, OBJECTIVES, ISSUES AND STRATEGIES

The first step in a traditional planning process is to establish goals and objectives for the metropolitan area. The goals and objectives a Long-Range Transportation Plan (Plan) establish a vision of what the region's transportation network may be, based on past or current transportation issues, in a selected horizon year, typically 20-25 years into the future. Strategies on how to implement the objectives are then developed to direct transportation management policies and actions needed to achieve the goals. These strategies reflect a course of action that is realistic and regionally acceptable.

BHJ MISSION

As the designated Metropolitan Planning Organization (MPO) for the Weirton-Steubenville, WV-OH Urbanized Area, BHJ's mission is:

- To develop plans that address and identify funding, the actions and policies needed to maintain a safe, secure, and environmentally friendly intermodal transportation system that provides the three-county region with a foundation to compete in a global economy; and
- To provide a continual, comprehensive, and coordinated 3-C transportation planning process that considers air, highway, rail, and water intermodal transportation.

The “**continual**” process is grouped into three stages of planning:

- Annual or routine reviews of the Plan
- Update the Plan every four years
- Major Review of the Plan in conjunction with the decennial census

The “**comprehensive**” process includes:

- A minimum of a twenty-year planning horizon
- The metropolitan planning factors issued in the latest five-year federal transportation legislation Fixing America's Surface Transportation (FAST) Act
- A long-range and short-range planning element
- An intermodal planning element
- A financial plan that is fiscally constraint

The “**coordinated**” process takes into account the following:

- An open planning process that engages transportation decision makers and stakeholders consisting of elected officials, public interest groups, private industry, and state and federal highway officials.

GOALS AND OBJECTIVES

The Regional Long-Range Transportation Plan is centered upon the six regionally significant policy statements and strategies listed below by rank of importance:

Listed below, by rank of importance, are five (5) strategies and policy statements taken from a Public Opinion Survey, that will guide the development of *BHJ's 2045 Regional Long-Range Transportation Plan*.

1. Design an efficient **Mobility Management Program** with cooperation with the local public transportation providers and other human service transportation providers that are involved in elderly, people with disability and employment related transportation. Encourage expanded and improved public transportation services, and app-based ride systems such as Uber and Lyft in the community. Increase **Ride Share Programs** such as work-related carpool and vanpool services
2. Prepare a **Financially Responsible** Plan that represents the region's fair share of federal and state economic resources and political importance. The plan should maintain existing infrastructure rather than build new corridors of travel into and out of the region.
3. Develop **Local Road Safety Plan** that identifies the most vulnerable locations of traffic crashes, makes the roads safer for the community, and ensures the effective use of available financial resources.
4. Develop livable, environment-friendly communities with adequate **Active Transportation and Recreational Facilities**.
5. Focus on sustainable, good-paying, environment-friendly business development promoting **Brownfield Redevelopment, Intermodal Transportation Linkages** (i.e. air, highway, rail, and water), and enhance **Regional Freight Movement**.

A review of the nine separate metropolitan planning factors as found in Section 1201 of the FAST Act, has guided the development and implementation of the Plan. The objectives derived from this approach are as follows:

Factor #1 Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

Objective

- Provide direct east west four-lane limited access for all residents and businesses in the region to emerging metropolitan markets in Central Ohio and Western Pennsylvania.
- Offer alternative and redundant Ohio River Bridge routes for truck traffic.
- Develop transportation system improvements that will provide greater interconnection with surrounding regions, states, municipalities, and marketplaces
- Build an efficient and effective transportation network that will become a regional strength and draw additional traffic and customers into the Steubenville-Weirton marketplace

- Factor #2 Increase the safety of the transportation system for motorized and nonmotorized users.
- Objective**
- Provide facilities and services to manage incidents (such as crashes, rock slides and vehicle breakdowns) in a manner that creates minimal obstruction to the flow of traffic.
 - Create safe bicycle and pedestrian facilities that connects both Ohio and West Virginia across the Ohio River and tie into a developing national trail network outside the three-county area in Ohio and Pennsylvania.
 - Keep lights, signals, and other traffic control devices for vehicles and pedestrian facilities in good working order.
 - Install and maintain guardrail and sidewalks as needed.
- Factor #3 Increase the security of the transportation system for motorized and nonmotorized users.
- Objective**
- Create and maintain a bridge and highway system that permits efficient and safe deployment of emergency services during times of a crash, flooding, other natural disaster, or national emergency.
 - Preserve, at minimum, two highway and one pedestrian Ohio River Bridge crossings as contingency options for National Guard, safety, security, and emergency services between Jefferson County, Ohio and Brooke and Hancock counties, West Virginia.
- Factor #4 Increase the accessibility and mobility options available to people and for freight.
- Objective**
- Reduce demand on the existing systems through programs and facilities through use of public transit, rideshare, vanpools, job access and reverse commute programs, park and ride lots, and pedestrian walkways.
 - Improve individual mobility within every urban and rural community by creating a cooperative and coordinated Public and Human Service Transportation system that avoids duplication of operations, reduces costs and encourages conservation capital assets, build a platform for consistent communications among operators, and expands opportunities for business development.
 - Create a network of transportation partnerships that offer a range of fixed-route, demand-responsive, and specialized non-emergency transportation services to retail, employment, social, and health care activity centers.
- Factor #5 Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- Objective**
- Create capacity only as a last resort as warranted by congestion, safety concerns, or population and business growth.
 - Encourage compact development and in-fill of abandoned urban space
 - Preserve and enhance historic and scenic transportation corridors and landmarks.
 - Create bicycle and pedestrian trails that link the region to emerging national trail systems and heritage corridors.

- Create a bicycle and pedestrian facility across the Ohio River connecting Eastern Ohio to the Northern Panhandle of West Virginia through Steubenville and Weirton that ties into a developing national trail network in Ohio and Pennsylvania outside the three-county area.
- Factor #6 Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Objective**
- Recognize the nature and critical value of goods traveling to, from, and through the Brooke-Hancock-Jefferson Metropolitan Area as identified in the *BHJ Freight Study, January 2011* to proactively plan for the region's future.
 - Identify the region's economic drivers and the linkages between those drivers and the transportation system, to take advantage of the existing freight infrastructure to help foster economic growth.
 - Promote alternative, affordable, and environmentally efficient transportation options that will guide the BHJ region into a prosperous future.
- Factor #7 Promote efficient system management and operation.
- Objective**
- Improve traffic flow through operational improvements such as signalization, access-management, altering traffic patterns, and reducing on-street parking.
 - Alter transportation patterns through the innovative use of roundabouts and access management.
- Factor #8 Emphasize the preservation of the existing transportation system.
- Objective**
- Strive to upgrade river crossings and connecting roadways to at least current minimum geometric standards.
 - Adequately maintain, replace, rehabilitate and resurface existing pavements, bridges, public transit facilities and intermodal facilities
 - Alleviate congestion and maintain an acceptable Level of Service (LOS) to enhance shipment of goods and movement of employees.
- Factor #9 Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.
- Factor #10 Enhance travel and tourism.

SECTION 2: ENVIRONMENTAL JUSTICE & DEMOGRAPHIC, ECONOMIC & EMPLOYMENT TREND

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INTRODUCTION

Demographic, Economic and Employment trend analysis along with issues related with Environmental justice are essential to determine future transportation needs in a given study area. These critical elements provide an understanding of past and anticipated future shifts in a region's economy, population, land use patterns, and other environmental factors over time. These factors are useful for predicting future transportation patterns and justifying transportation improvements over the next twenty-five years (25).

ENVIRONMENTAL JUSTICE

The U.S. EPA's Office of Environmental Justice 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. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

According to the American Community Survey, 2017, over 17% of the household of this region is living below the poverty level. The rate is highest in Jefferson County (19%) and lowest in Hancock (13.20%). Majority of these households situated in the central city of Steubenville and Weirton. Downtown Steubenville, Northern part of Jefferson county (Empire, Stratton), and Southern Weirton along US 22 and Route 105 are block groups with the majority of these households (Figure 1). The Median Household income and Per capita income is highest in Brooke county and lowest for Jefferson County. Downtown Steubenville and Weirton, Steubenville TWP, and Wells TWP are the areas where the median household income is recorded less than \$21,000 yearly (Figure 2 & 3). Not surprisingly, the minority population is concentrated in the same block groups with higher below the poverty level and lower median household income (Figure 4).

TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

This act states that

No person in the United States of America shall, on the basis of race, color, religion, national origin, sex, disability, or low-income status be excluded from participation in, be denied the benefits of, or subject to discrimination under any program or activity receiving Federal financial assistance. The law also makes it illegal to retaliate against a person because he or she complained about discrimination, filed a charge of discrimination or participated in a discrimination investigation or lawsuit. Title VI prohibits intentional discrimination as well as disparate impact on protected groups.

Since alternative transportation and public transportation is a big issue for this region, this plan also looked into the block groups where over 40% of the households are being recorded with Zero Household (Figure 5). In Brooke county, over 10% of the total household has been marked as zero vehicle households, while for Hancock and Jefferson, it is 8.2% and 8.7%, respectively. The majority of these households are concentrated near Downtown Steubenville, Weirton along US 22 and Route 105, and Northern Hancock county near Newell. The renter-occupied household is twice as much found to have zero vehicle than the

owner-occupied household. Many of these households are found to be located in the block group with little or no internet access (Figure 6). According to the demographic projection, it is estimated that this region will lose 21% of its working population group (16-64), and the aging population (65+) will grow another 17% in the next 25 years. The central cities (Steubenville and Weirton) are losing the younger population faster than the region as a whole. According to Figure 7, the young and middle-age professional groups prefer to live outside of the city limits on both sides of the river. Except for the educational institution block groups (Franciscan University & Bethany College), younger population group is concentrated in areas like Richmond, Salem, Amsterdam, empire, Wayne, tiltonsville in Jefferson county, south of Chester, Weir crest in Hancock county and west of Washington pike or the southern part of the Brooke County. The central cities have a higher concentration of the aging population while the younger generations are living outskirts of the city of the city limit. These younger generation households also more tend to be households with no vehicle than the aging group household. Though the level of education creates a minor difference in the salary range, the median household income between households with associate degrees and Bachelor is not statistically significant. The rate of people with different disability statuses is relatively high in the BHJ region in comparison to the Country average. According to ACS 2017, the percentage is 18.4% for Jefferson, while for Brooke and Hancock, it is 16.5% and 18.7%. Ambulatory, cognitive, and independent living difficulties are the top disabilities of this region (Figure 8).

ENVIRONMENTAL JUSTICE

Table 1 Percent of families living below poverty

County	People Living Under Poverty	Percentage of Total County Population
Brooke	3042	13.70%
Hancock	3842	13.20%
Jefferson	12485	19%
Total Region	19369	16.50%

Source- American Community Survey, ACS 2017

Table 2 Per Capita and Median Household Income

Per Capita & Median Household Income	Jefferson	Brooke	Hancock
Median household income (in 2017 dollars)	\$43,161	\$48,835	\$43,634
Per capita income in past 12 months (in 2017 dollars)	\$24,028	\$25,630	\$25,157

Source- American Community Survey (ACS), 2017

Table 3 Percent of Minority (Non-White) Population

County	Minority (Non-White) Population	Percentage of Total County Population
Brooke	799	3.60%
Hancock	1484	5.10%
Jefferson	5524	8.40%
Total Region	7808	6.67%

Source- American Community Survey (ACS), 2017

Table 4 Percent of total population age 65 years or older

County	Persons age 65 and older	Percentage of Total County Population
Brooke	5284	23.80%
Hancock	6721	23.10%
Jefferson	14206	21.60%
Total Region	26211	22.39%

Source- American Community Survey (ACS), 2017

Table 5 Percent of Disabled Population Age 16 To 64 Years Old

County	People with Disability 65 and under	Percentage of Total County Population
Brooke	2553	11.50%
Hancock	3549	12.20%
Jefferson	9207	14.00%
Total Region	15310	13.08%

Source- American Community Survey (ACS), 2017

Table 6 Household Information

	Jefferson	Brooke	Hancock
Housing units (2017)	27,571	9,961	12,760
Owner-occupied housing unit rate, 2013-2017	69.00%	74.70%	71.70%
Median gross rent, 2013-2017	\$622	\$589	\$648
Persons per household, 2013-2017	2.35	2.22	2.33
Total Vehicle (2020 Base TDM Model Estimate)	60,752	17,400	24,277
Household with Zero Vehicle Available (%)	2407 (8.7%)	952 (9.6%)	1048 (8.2%)

Source- American Community Survey (ACS), 2017

Table 7 Internet, Education, Economic & Net productive Rate

	Jefferson	Brooke	Hancock
Households with a computer, percent, 2013-2017	79.30%	81.00%	79.90%
Households with a broadband Internet subscription, percent, 2013-2017	71.40%	67.20%	69.30%

Source- American Community Survey (ACS), 2017

	Jefferson	Brooke	Hancock
High school graduate or higher, percent of persons age 25 years+, 2013-2017	90.30%	90.70%	88.30%
Bachelor's degree or higher, percent of persons age 25 years+, 2013-2017	14.90%	19.90%	17.90%

Source- American Community Survey (ACS), 2017

Table 8 Reproduction Rate

County	Birth	Death	Net Reproductive Rate
Jefferson	4789	6886	-3.2%
Brooke	1389	2421	-4.6%
Hancock	2035	2922	-3.1%

Source- American Community Survey (ACS), 2017

Figure 1 Household Living Below Poverty

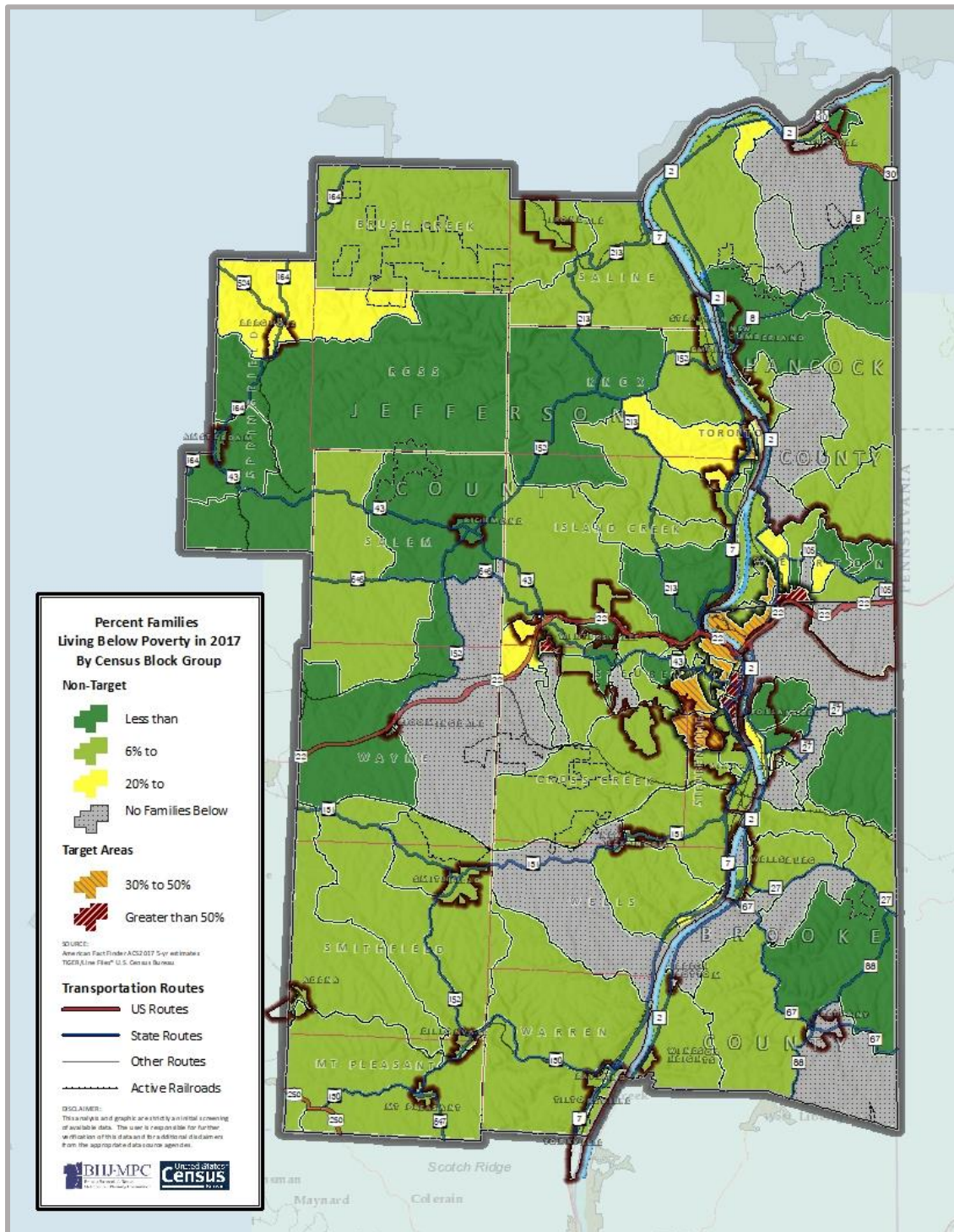


Figure 2 Median Household Income

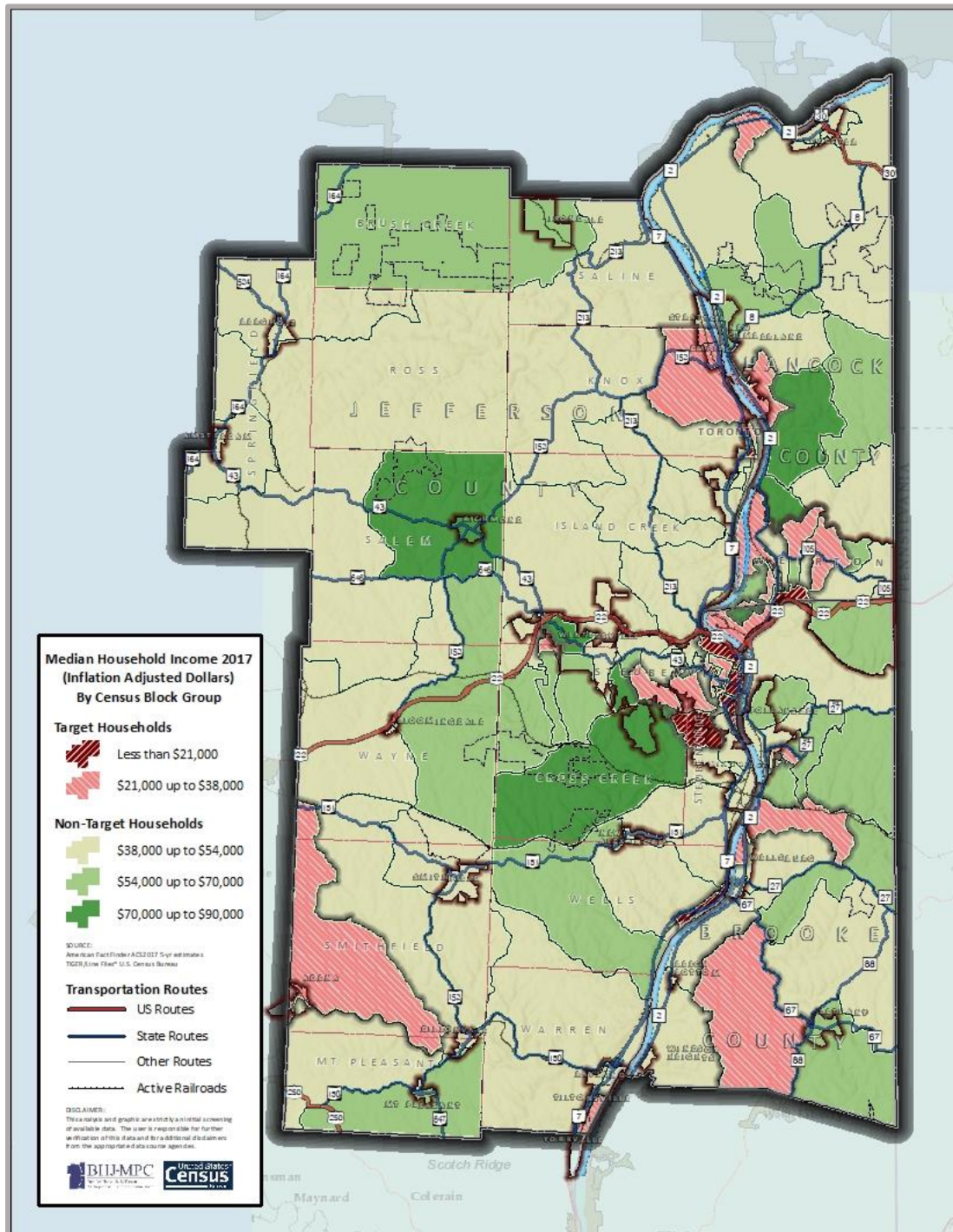


Figure 3 Minority Population Distribution

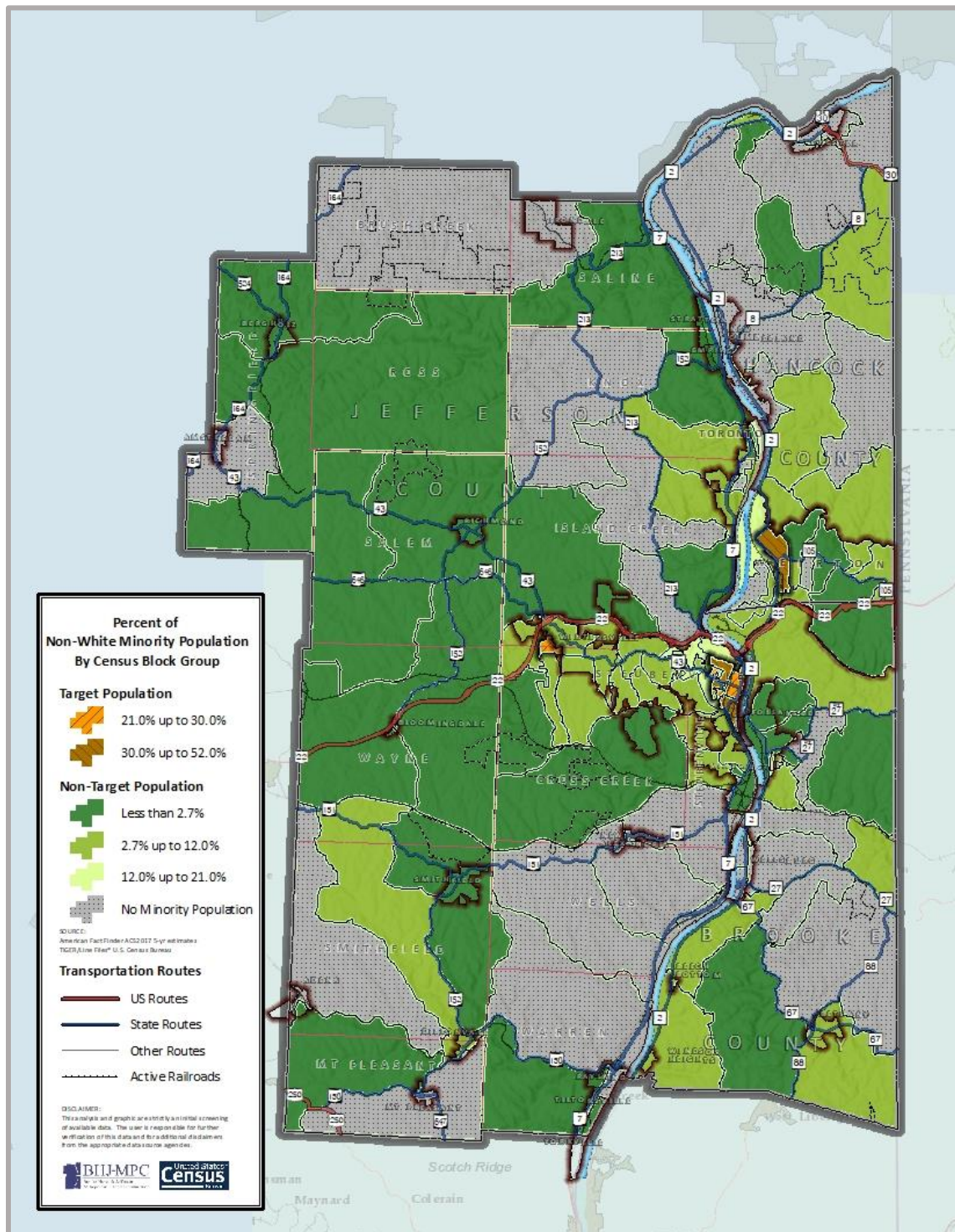


Figure 4 Household with Zero Vehicle

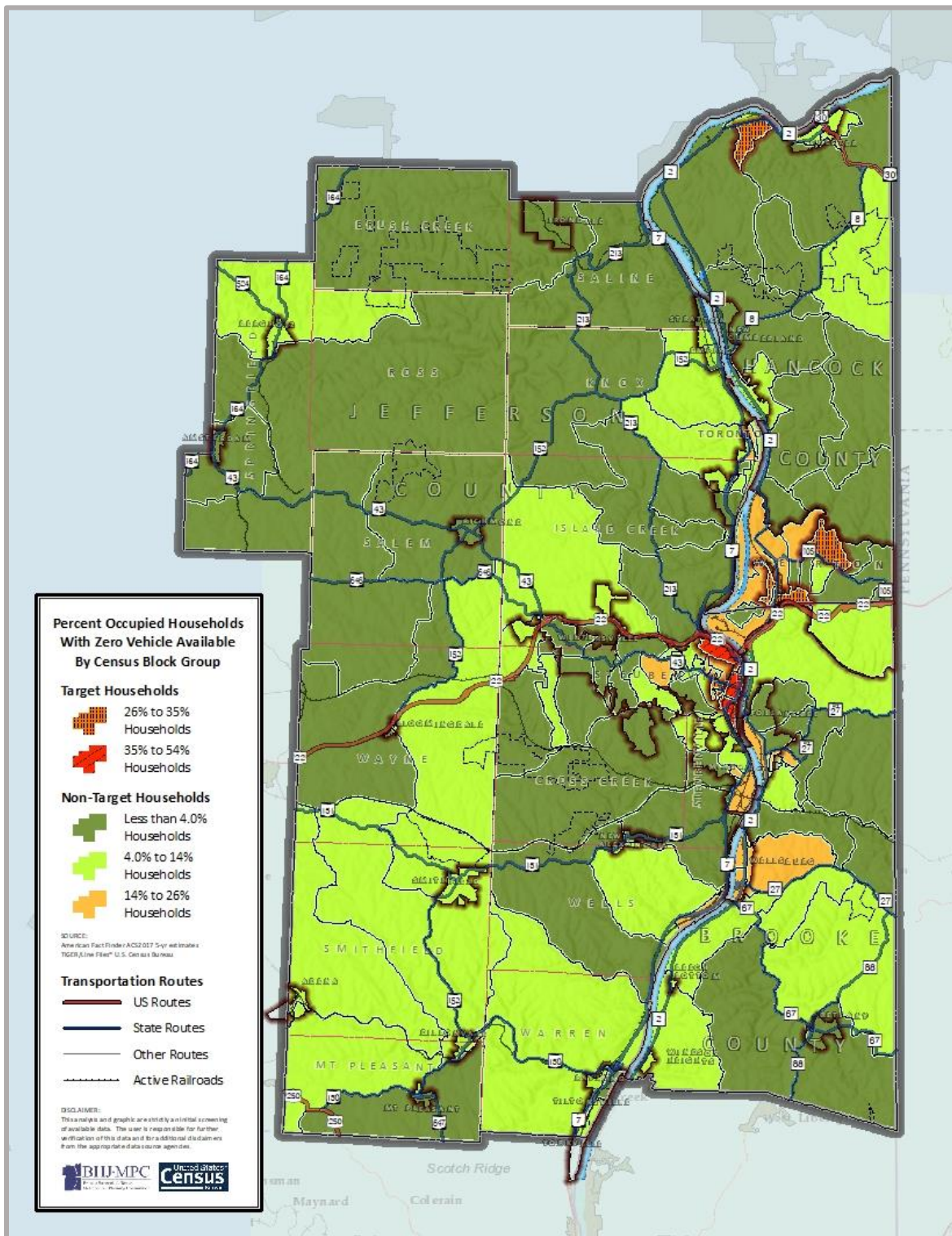


Figure 5 Spatial Distribution of Work force (18-64 Age Group)

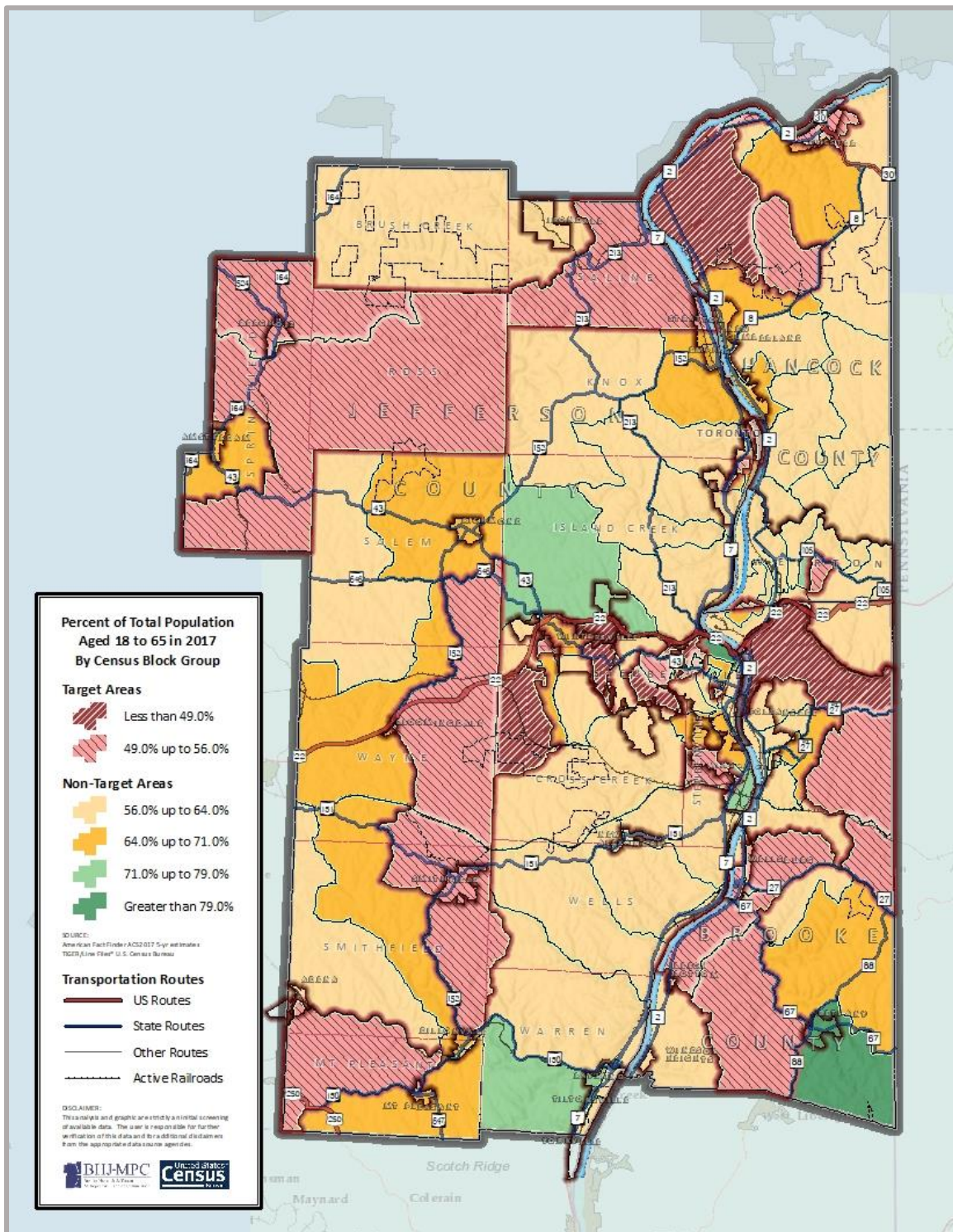
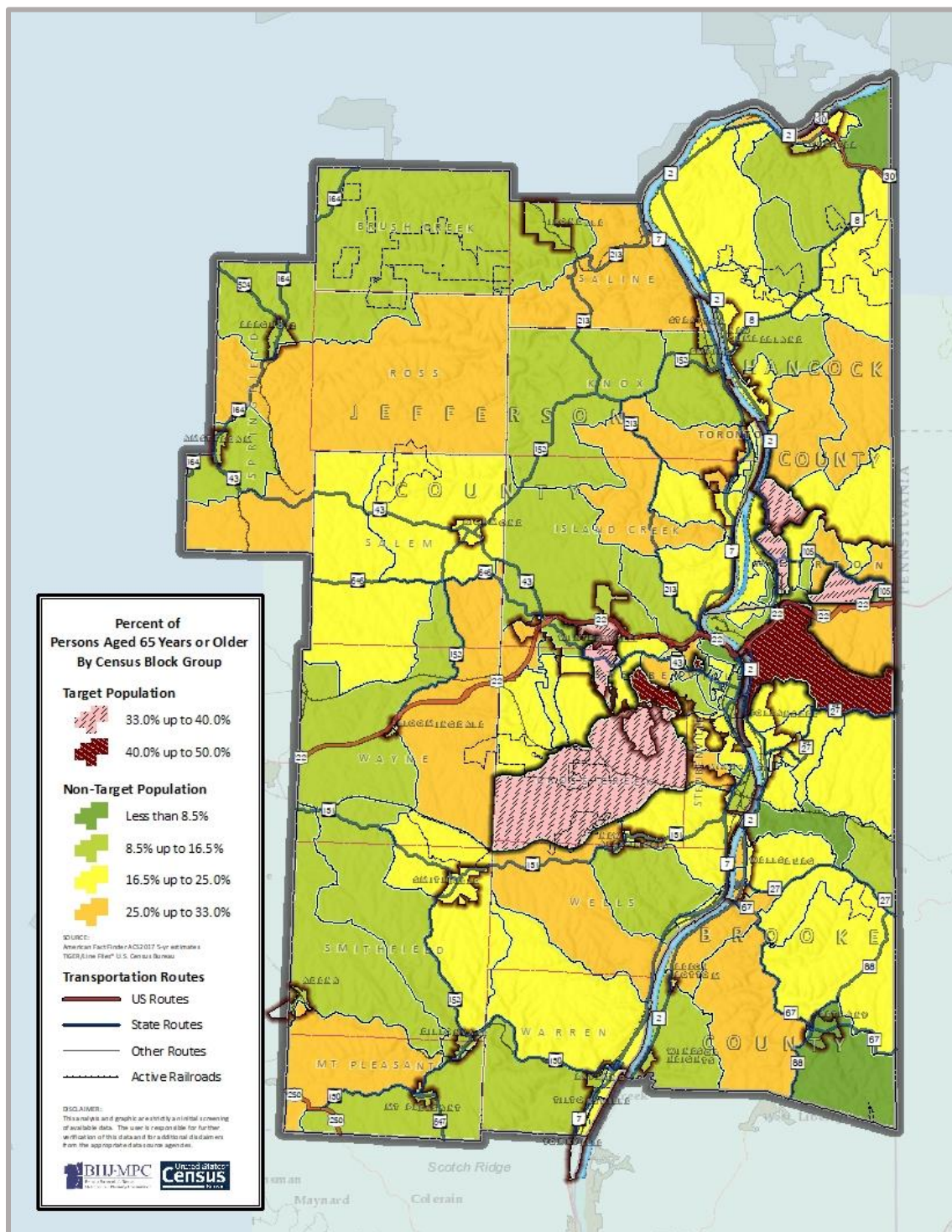


Figure 6 Spatial Distribution of 65 & Over Population Group



DEMOGRAPHIC, ECONOMIC & EMPLOYMENT TREND OF THE BHJ REGION

FORECASTING PROCEDURE FOR INDEPENDENT VARIABLES

The U.S. Census Bureau assembled the Summary Files into TIGER Files, a delineated geographic hierarchy by the smallest to the largest as blocks, block groups, tracts, and political subdivision (county, city, village, or township), depending on the manner of data collection and sampling. Since TAZ level population data is no longer available, it has been projected from the 2010 base model through “**Average Annual (Compound) Growth Rate**” method where the rate itself has been calculated from 2010-2017 county wide Net Migration and Reproduction Rate.

For population under and over 18, the cohort projections have been used. The percentage of under and over 18 population has been calculated from the 2020 cohort projection database and also has been used to calculate TAZ level population from the projected 2020 total population in a “**Step down ratio**” method. For workers, the cohort age group 16-64 has been used and followed the same process.

Housing unit has been calculated through a “**Reverse Distributed Housing Unit Method**” where population in each of the TAZ has been divided by average person per household rate. The occupied household numbers are calculated from the occupancy rate of the respective block group and vacant numbers are calculated by subtracting that from the total household.

Total vehicle per TAZ has been calculated in two steps **symptomatic method**. In the first step, the number of households with at least one vehicle in each of the block group has been assigned in the Geographical Information System (GIS) and that percentage been assigned to the respective TAZ’s. Later they are multiplied by average car per household rate for Ohio and West Virginia collected from American Community Survey,2017.

The median household income has been collected from block level American Community Survey 2017 and then assigned each TAZ a median household income variable. School and university enrollment data has been collected from individual school and university systems and then were also validated with the cohort survival rate.

ODOT provided BHJMPC 2018 employment data through the “Quarterly Census of Employment and Wages”. For West Virginia, BHJ collected data through Mergent Intellect,2019, Longitudinal Employer-Household Dynamics 2015 and West Virginia Secretary of State’s Office,2018. Each state’s respective Employment Data Centers were classified by the North American Industrial Classification System (NAICS). The employment variable allocations to TAZ were first started by first assembling the employer information into a GIS database and then each record was coded onto a geographic address file, a process called geocoding. An important step in the process compared geocoded locations accuracies through local knowledge and online presence of the business. The final step summarized the employment data by the NAICS. The GIS software created thematic maps to check for errors and fairness of information based on regional understanding and historic employment trends.

DEMOGRAPHIC TREND

From 1990 to present, the BHJ region has experienced an ongoing gradual shrinking of population. According to this projection, BHJ will lose another 12000 people by 2045. Both Hancock and Brooke counties are projected to lose over 18 % of their population while Jefferson county will lose a little over 3 %. Between the two big cities, City of Weirton, WV is expected to lose more population than the City of Steubenville, OH. Though the current rate of population loss is significantly higher, it is expected to decrease after 2030. Jefferson is expecting a slight increase after 2030 while for Brooke and Hancock it is projected after 2035. From last seven (7) years data, it is evident that the mortality rate is driving the population rate while there is a small gain in migration in the whole region.

Jefferson County is expecting a 1.15% increase in their population by 2045 from 2010 base year. In 2020 estimate, the number of female residents is higher (34,560) than male (31,980). In the 2045 projection, the female population is expected to gain 3.37% while their male counterpart will be a decrease of 1.16%.

Brooke county is expected to face a 10.21% decrease in their population by 2045. In 2020 estimation, the number of female residents is higher (11,378) than male (10,940). In the 2045 projection also, the female population decrease a little over 9% while for the male it is close to 11%.

Hancock County is expecting a 13% decrease in their population from 2010 base year. In 2020 estimate, the number of female residents is found higher (15000) than male residents (14000). In the 2045 projection also, the female population decrease rate is less (12.5%) than male (13.4%) from their respective 2010 base year population.

The age demographic analysis is divided in three (3) parts from age group 0-4, 16-64 and 65 and over. In the age group 0-4, Jefferson County is expecting a gradual increase from their base year 2010 population (3550) to 5750 in 2045, a 62 % increase. But Brooke and Hancock county are expecting a decrease of 37 % and 16 % from 2010 to 2045. The age group of 16-64 or in other words, the working group of population is predicted to face a decreasing trend for the whole region. The reduction rate is lowest for Jefferson county (15.68%) and highest for Hancock County (28%) from the time period of 2010-2045. In the age group of 65 and over, Jefferson county is expecting a flatten out population change after 2020. But for Brooke and Hancock Counties, it will continue to go up. In general Jefferson is expecting an increase of 11% from their 2010 base year population while for Brooke and Hancock Counties it is expected 26% and 21% respectively. The estimates in these age groups provide the school enrollment, workforce and aging population estimates that play an important role in the future transportation travel demand forecasting.

According to American Community Survey, 2017 highest percentage of owner-occupied housing is recorded in Brooke County 74.70% while the lowest is recorded in Jefferson (69%). Over 60% of the household across the region are reported to have Broadband and over 70% are reported to have a computer in their household. The high school graduation rate is uniform for the whole region (Close to 90%) but Brooke county has a larger population (15%) with bachelor or higher degree's than the other counties. The median household income and per capita income is also the highest in region. This county also has the lowest poverty rate (13%) while the highest is in Jefferson County (18%). The 2010-17 net productive rate analysis indicated the lowest reproductive rate in Brooke while the highest is recorded in Hancock County, but it is still negative.

ECONOMIC TREND

After the 2010 recession, the US economy started to move forward, supported by the Gross Domestic Product (GDP) estimates from the previous eight (8) years. According to Bureau of Economic Analysis 2019, In the year 2018, the GDP of the country was estimated at over \$20,580 billion, an increase from a little over \$15,000 billion in 2010. Subsequently the states also saw an increase in their GDP. For Ohio, the 2018 GDP was estimated at \$676 billion from \$497 billion in 2010. In comparison, the state of West Virginia had a slower growth rate. Their 2018 GDP was estimated at a little over \$77 billion which increased from \$65 billion in 2010. While both the US and Ohio economy enjoyed a continuous upward trend during the last eight (8) years, the economy of West Virginia faced several ups and downs in 2012-14 and 2015-16 periods. The per capita GDP of US increased a total of 12% from 50,000 to 57,000. For the State of Ohio and West Virginia, it is 14.6% and 7.4% respectively. The per capita income of the country increased a total of 34% for Brooke, Hancock, and Jefferson County, it was 34.8%, 28.8% and 30.5% respectively. The per capita personal consumption expenditures (PCE) are only available at the state level and according to that, the overall per capita consumption expenditure for the country has went up 30% in the last eight (8) years, while for Ohio and West Virginia it is 28.9% and 29.3% respectively.

The Ohio Valley region is also enjoying the continuous upward economic growth. The neighboring Pennsylvania counties (Alleghany and Washington) have the highest average GDP in the region. Other than that Belmont, Jefferson, Columbiana and Ohio are the top four counties when it comes to BHJ and its closer surrounding counties. The increasing growth in Belmont county is due to its agriculture (Agriculture, forestry, fishing and hunting) and mining (mining, oil and gas extraction) industries. Columbiana County is enjoying economic growth through mining, information and arts-recreation industries. Among the West Virginia counties, Ohio county is doing an exceptional job due to mining, wholesale, retail and real estate businesses. Up to 2014, Jefferson County had the economic lead in the region which moved to Belmont in 2015. Among the West Virginia counties, Ohio and Marshall counties have much larger economies than Brooke and Hancock Counties. The combined economy of BHJ region (Brooke, Hancock & Jefferson County) is 1/14th of Alleghany County and 1/2th of Washington County in 2018.

In the BHJ Region, Jefferson County Ohio has the biggest economy which is almost twice as large as Brooke and Hancock County combined. The driving forces of this economy are mining, utilities, finance insurance and retail trade. In 2017-18 fiscal year, the natural gas and mining industries of this region enjoyed a total 129% increase than the previous fiscal year. Overall, the GDP increase is almost 20%. For Brooke County the increase is 7.3%, mostly led by manufacturing and mining industries. Hancock County has a moderate increase of 13.6% GDP in fiscal year 2017-18. It also had a steady increase in overall GDP from 2010-2018 because of manufacturing, real estate and finance, rental and leasing industries. Transportation- warehousing and manufacturing industries have generated the biggest GDP increase in 2017-2018 fiscal year in this county.

EMPLOYMENT TREND

From year 1990, the BHJ region has experienced a gradual decrease in labor force. The region also has a higher unemployment rate than the national average. The shutdown of steel industries played a major role in this increase. Due to different continuous economic revitalization efforts, the unemployment rate fell gradually and is currently a similar level to that of the 1990's. Jefferson County has a larger labor force and employed population than Brooke and Hancock combined. The region is still in the process of recovering from the 2010 economic recession, but availability of specialized labor will be the biggest challenge in the coming days.

Health Care and Service industries are the prominent employers for this region. Warehouse and retail trade industries are growing and showing more hiring capacity than manufacturing industries. The region is also experiencing an increase of construction jobs, but they are temporary. Educational institutions are also major employers in the area.

Jefferson County, OH has more jobs and also contain more residents who live and work there in comparison to Brooke and Hancock County. Between the two West Virginia counties, Hancock County has more employment opportunity than Brooke County. Outside the region, a significant number of people generally work in Allegheny County, PA, Ohio County, WV and Belmont County, OH. But when it comes to people who live outside the region and come BHJ region for work, Columbiana, OH, Belmont, OH and Harrison, OH are the top three counties.

According to the future employment projection provided by Bureau of Labor Market Statistics (BLS), southeast Ohio* is expecting to add another 18000 jobs in the next 10 years period. They are expecting more service providing jobs than manufacturing in the area. The top three (3) sectors that BLS expects will gain the most employment are professional and business services, education and health, and construction. Manufacturing is expected to lose over 2000 jobs in the next ten-year (10) period.

Workforce West Virginia is expecting another 3000 jobs in investment area region 5** which contains Brooke and Hancock County. They are predicting more service providing job and a decrease of manufacturing jobs in the region. According to this projection, healthcare sector, personal care and service, and legal occupations are expecting to see the most increase in the next 10 years.

*South East Ohio- Adams, Athens, Belmont, Carroll, Coshocton, Gallia, Guernsey, Harrison, Highland, Hocking, Holmes, Jackson, **Jefferson**, Lawrence, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Ross, Scioto, Vinton, and Washington Counties.

** Investment area region 5- **Brooke, Hancock**, Ohio, Marshall, Wetzel & Tyler.

Demographic Statistics

Table 9 Population Trend BHJ Region

	Population Year						Change in population 2010-45		
	1990	2000	2010	2020	2030	2045	Number	Percent Change	Annual Rate of Change
Brooke County, WV	26,992	25,447	24,279	22,318	21,092	19,861	-4,418	-	-0.57%
Hancock County, WV	35,233	32,667	30,676	29,048	27,450	25,081	-5,595	-	-0.57%
Jefferson County, OH	80,298	73,894	69,709	66,540	65,330	67,340	-2,369	-3.40%	-0.10%
Metropolitan Area	142,523	132,008	124,450	117,906	113,872	112,282	-12,168	-9.78%	-0.29%
Central Cities									
Steubenville, OH	22,125	19,015	18,659	17,864	16,457	17,076	-1,583	-8.49%	-0.25%
Weirton, WV	22,124	20,411	19,746	18,449	17,252	15,426	-4,320	-	-0.70%
Selected Urban Cities									
Chester, WV	2,905	2,592	2,585	2,414	2,252	2,008	-577	-	-0.72%
Follansbee, WV	3,339	3,115	2,986	2,735	2,558	2,264	-722	-	-0.79%
Mingo junction, OH	4,297	3,631	3,454	3,229	2,869	2,370	-1,084	-	-1.07%
Toronto, OH	6,127	5,676	5,294	4,959	4,558	4,060	-1,234	-	-0.76%
Wellsburg, WV	3,385	2,891	2,799	2,559	2,266	1,847	-952	-	-1.18%
Wintersville, OH	4,102	4,067	3,922	3,693	3,577	3,503	-419	-	-0.32%

Source- Ohio Development Services Agency office of Research,2018, Bureau of Business & Economic Research, West Virginia University,2017, BHJ MPC

Table 10 Housing Trend BHJ Region

	Occupied Housing Characteristics by Year						Changes from 2010-2045		
	1990	2000	2010	2020	2030	2045	Number	Percent Change	Annual Rate of Change
Brooke County, WV	10,833	10,396	10,746	9961	10,381	10,211	-535	-4.98%	-0.15%
Persons/Household	2.55	2.36	2.26	2.22	2.03	1.95		- 13.72%	-0.42%
Vehicle/Household	1.88	1.86	2.07	1.68	1.71	1.64		- 20.77%	-0.66%
Hancock County, WV	14,697	13,678	14,639	12,760	14,409	14,302	-337	-2.30%	-0.07%
Persons/Household	2.55	2.36	2.1	2.33	1.91	1.75		- 16.67%	-0.52%
Vehicle/Household	1.8	1.78	2.11	1.68	1.74	1.73		- 18.01%	-0.57%
Jefferson County, OH	33,911	30,415	32,693	27,571	32,037	31,336	-1,357	-4.15%	-0.12%
Persons/Household	2.59	2.36	2.13	2.35	2.04	2.15		0.94%	0.03%
Vehicle/Household	1.74	1.71	1.97	1.87	1.98	2.08		5.58%	0.16%
Metropolitan Area	59,411	52,449	58,078	50,292	56,827	55,849	-2,229	-3.84%	-0.11%
Persons/Household	2.54	2.36	2.16	2.30	1.99	1.95		-9.86%	-0.30%
Vehicle/Household	1.77	1.76	2.05	1.74	1.81	1.82		- 11.38%	-0.34%

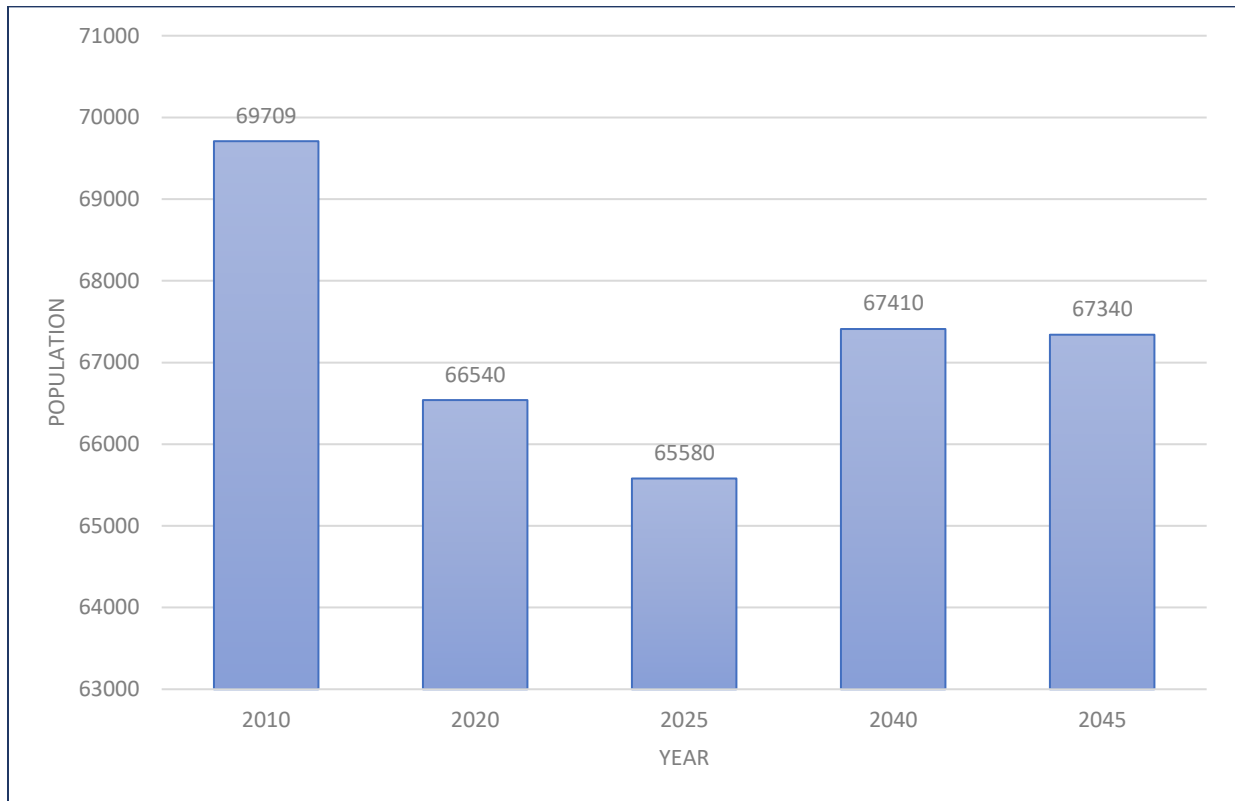
Source- Ohio Development Services Agency office of Research,2018, Bureau of Business & Economic Research,
West Virginia University,2017, BHJ MPC

Table 11 Cohort Population Projection Jefferson County

	2010				2020				2045		
Age Cohort	TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE
0-4	3,543	1,753	1,790		4,240	2,060	2,180		5,750	2,820	2,930
5-9	3,716	1,874	1,842		4,180	2,080	2,110		4,690	2,270	2,420
10-14	4,128	2,098	2,030		3,840	1,850	1,990		4,320	2,170	2,150
15-19	4,795	2,342	2,453		4,190	2,050	2,140		5,000	2,330	2,670
20-24	4,554	2,108	2,446		3,980	1,750	2,230		6,180	3,130	3,050
25-29	3,442	1,759	1,683		2,920	1,400	1,520		5,690	2,920	2,770
30-34	3,492	1,701	1,791		3,690	1,760	1,930		3,760	1,770	1,990
35-39	3,980	1,962	2,018		3,470	1,820	1,650		3,230	1,580	1,650
40-44	4,191	2,093	2,098		3,630	1,810	1,820		2,800	1,160	1,640
45-49	5,030	2,431	2,599		4,180	2,110	2,070		2,340	1,000	1,340
50-54	5,689	2,800	2,889		4,190	2,130	2,060		3,250	1,440	1,810
55-59	5,582	2,784	2,798		4,790	2,400	2,390		3,040	1,450	1,590
60-64	4,811	2,365	2,446		5,110	2,460	2,660		3,130	1,490	1,640
65-69	3,550	1,683	1,867		4,850	2,340	2,510		2,940	1,350	1,590
70-74	3,004	1,366	1,638		3,580	1,670	1,910		2,630	1,170	1,460
75-79	2,425	1,008	1,417		2,450	1,100	1,360		2,320	950	1,370
80-84	2,002	751	1,251		1,700	690	1,000		2,240	880	1,360
85+	1,775	577	1,198		1,540	490	1,050		4,030	1,680	2,350
TOTAL	69,709	33,455	36,254		66,540	31,980	34,560		67,340	31,560	35,780

Source- Ohio Development Services Agency office of Research,2018

Figure 3 Projected Population Trend 2010-2045 Jefferson County



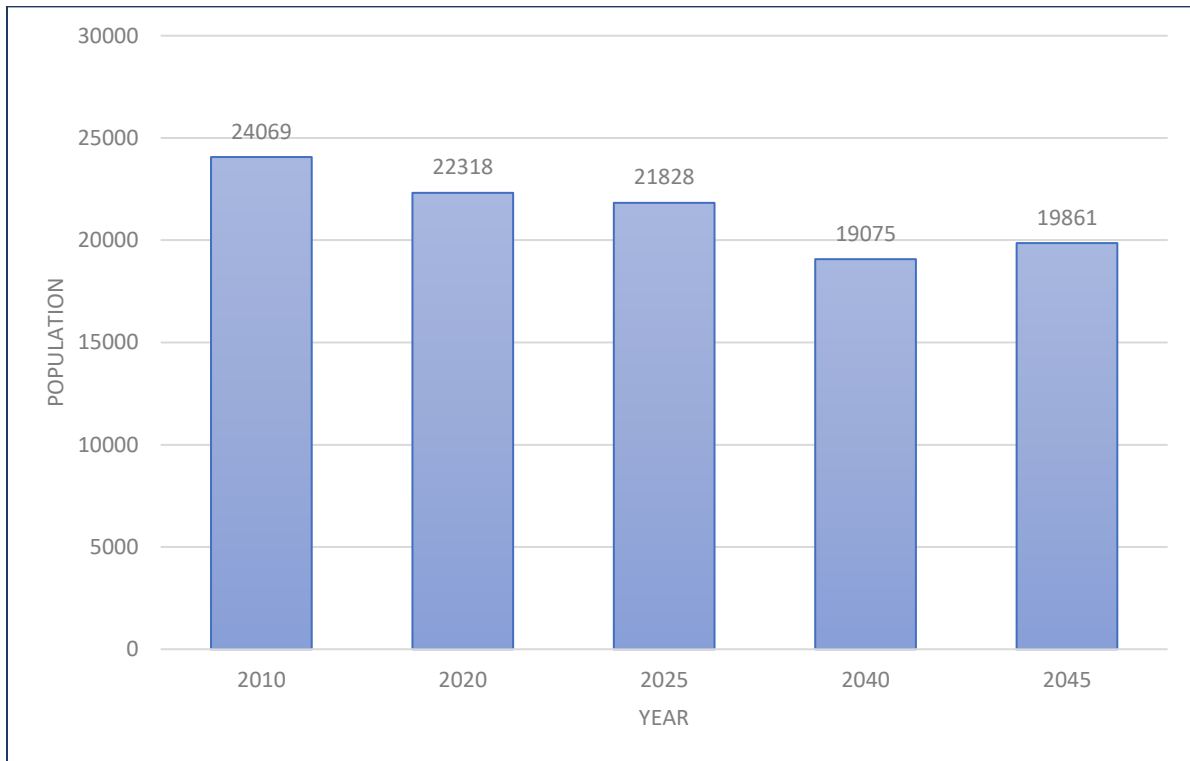
Source- Ohio Development Services Agency office of Research,2018, BHJ- MPC

Table 12 Cohort Population Projection Brooke County

		2010				2020				2045	
Age Cohort	TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE
0-4	1,123	569	554		810	442	368		702	387	315
5-9	1,239	649	590		1,035	541	494		898	475	424
10-14	1,341	670	671		1,135	598	537		985	524	460
15-19	1,689	845	844		1,380	718	662		1198	629	569
20-24	1,436	737	699		1,502	769	733		1303	674	629
25-29	1,054	539	515		1,034	540	494		897	474	424
30-34	1,312	654	658		964	502	462		836	440	396
35-39	1,377	703	674		1,142	577	565		991	506	485
40-44	1,514	749	765		1,252	633	619		1086	555	531
45-49	1,656	846	810		1,336	675	661		1159	591	568
50-54	1,922	921	1,001		1,462	739	723		1268	648	621
55-59	2,003	984	1,019		1,672	787	885		1371	611	760
60-64	1,801	889	912		1,894	898	996		1348	667	682
65-69	1,218	555	663		1,751	831	920		1361	652	709
70-74	1,055	497	558		1,528	711	817		1479	648	831
75-79	948	395	553		933	384	549		1261	531	730
80-84	722	275	447		730	338	392		952	407	545
85+	659	195	464		757	258	499		763	299	463
Total	24,069	11,672	12,397		22,318	10,940	11,378		19,861	9717	10,144

Source- Bureau of Business & Economic Research, West Virginia University, 2017, BHJ MPC

Figure 4 Projected Population Trend 2010-2045 Brooke County



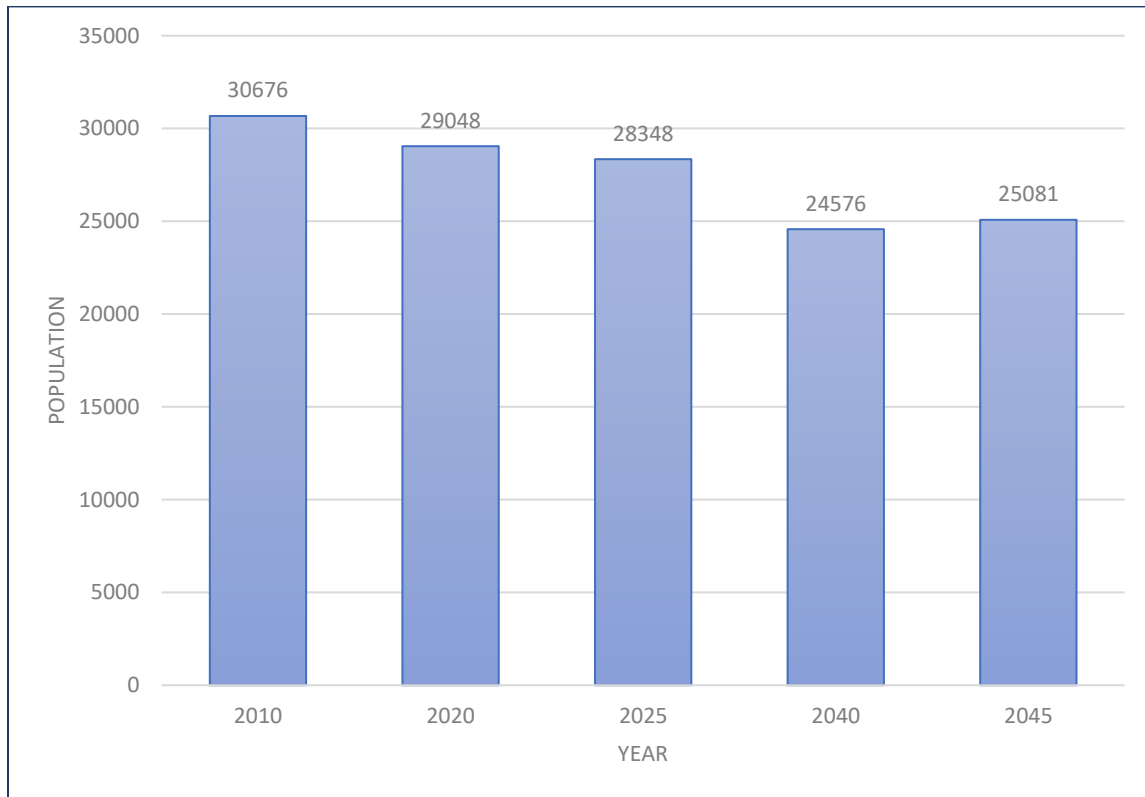
Source- Bureau of Business & Economic Research, West Virginia University, 2017, BHJ MPC

Table 13 Cohort population Projection Hancock County

		2010				2020				2045	
Age Cohort	TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE
0-4	1,534	776	758		1,376	680	696		1287	635	652
5-9	1,740	917	823		1,405	700	705		1278	629	650
10-14	1,795	929	866		1,524	767	757		1252	617	635
15-19	1,716	888	828		1,710	898	812		1265	629	636
20-24	1,263	628	635		1,702	880	822		1324	667	657
25-29	1,537	743	794		1,634	845	789		1492	785	707
30-34	1,698	815	883		1,233	608	625		1520	781	739
35-39	1,935	977	958		1,509	720	789		1468	752	716
40-44	2,006	1,007	999		1,666	798	868		1107	546	561
45-49	2,337	1,122	1,215		1,882	952	930		1343	644	699
50-54	2,564	1,255	1,309		1,944	967	977		1478	703	776
55-59	2,621	1,295	1,326		2,229	1,049	1,180		1641	816	825
60-64	2,176	1,091	1,085		2,365	1,127	1,238		1640	796	844
65-69	1,455	679	776		2,336	1,100	1,236		1823	818	1005
70-74	1,396	610	786		1,857	884	973		1853	838	1015
75-79	1,137	481	656		1,102	483	619		1626	718	908
80-84	965	386	579		908	373	535		1106	497	609
85+	801	242	559		664	211	453		577	193	384
Total	30,676	14,841	15,835		29,048	14,044	15,004		25,081	12,063	13,017

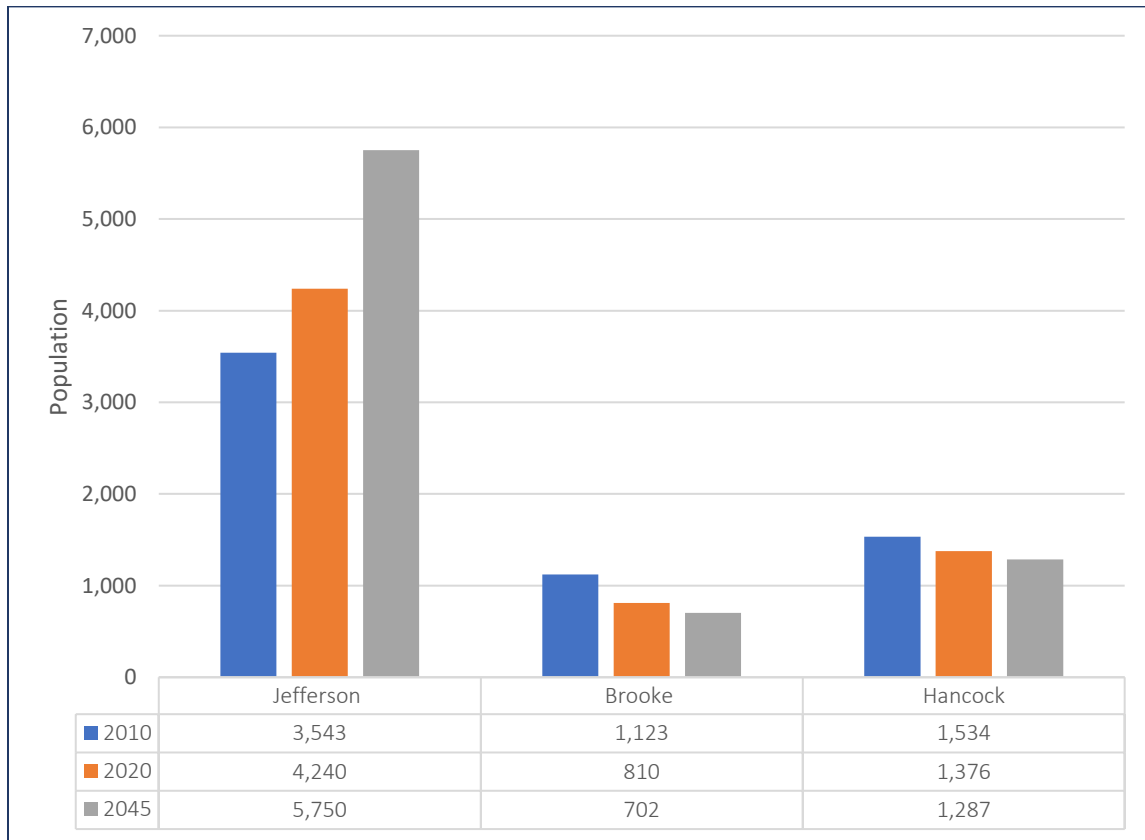
Source- Bureau of Business & Economic Research, West Virginia University,2017, BHJ MPC

Figure 5 Projected Population Trend 2010-2045 Hancock County



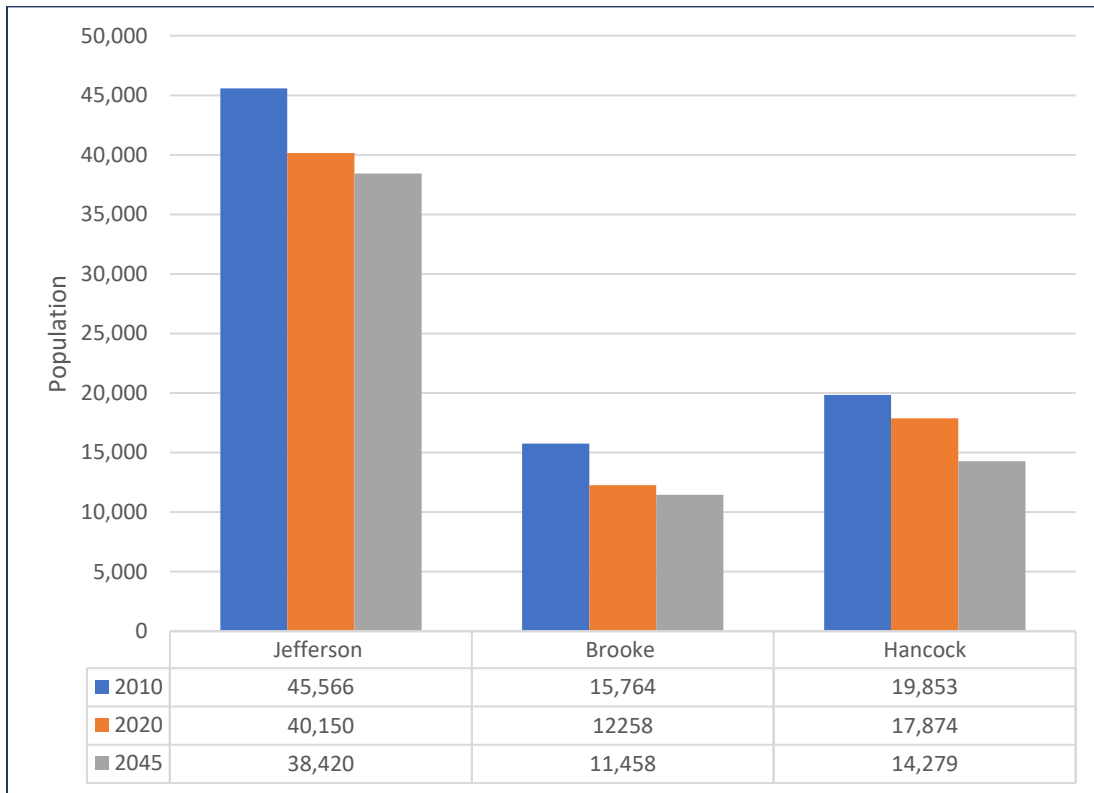
Source- Bureau of Business & Economic Research, West Virginia University, 2017, BHJ MPC

Figure 6 Population Change Trend in Age Group 0-4



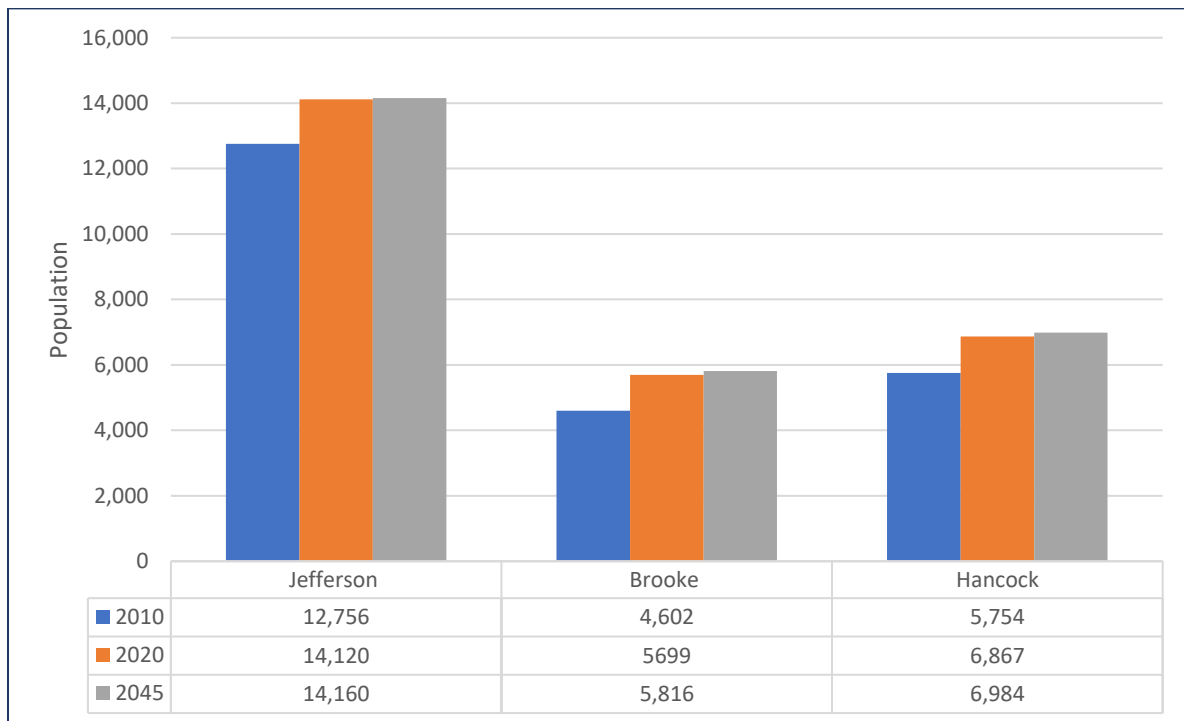
Source- Bureau of Business & Economic Research WVU, Ohio Development Services Agency office of Research
MPC 2019

Figure 7 Population Change Trend in Age Group 16-64



Source- Bureau of Business & Economic Research WVU, Ohio Development Services Agency office of Research
MPC 2019

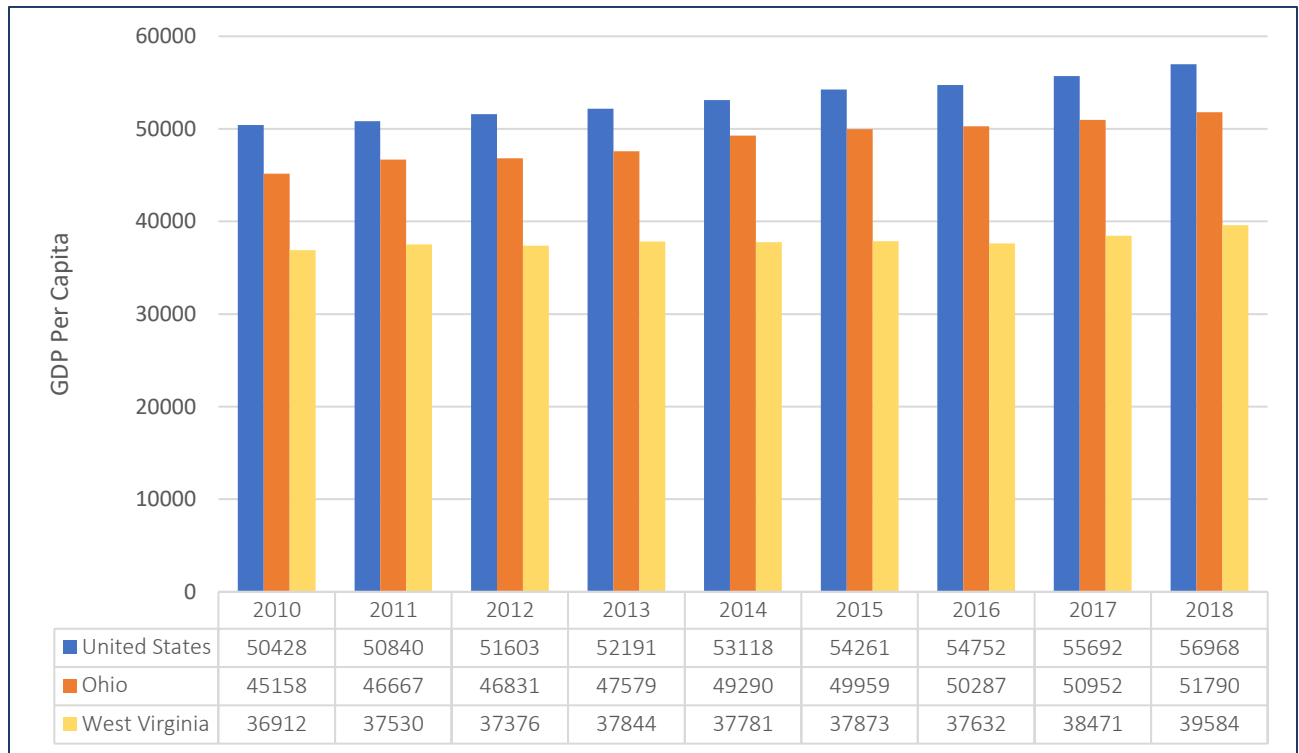
Figure 8 Population Change Trend in Age Group 65+



Source- Bureau of Business & Economic Research WVU, Ohio Development Services Agency office of Research
MPC 2019

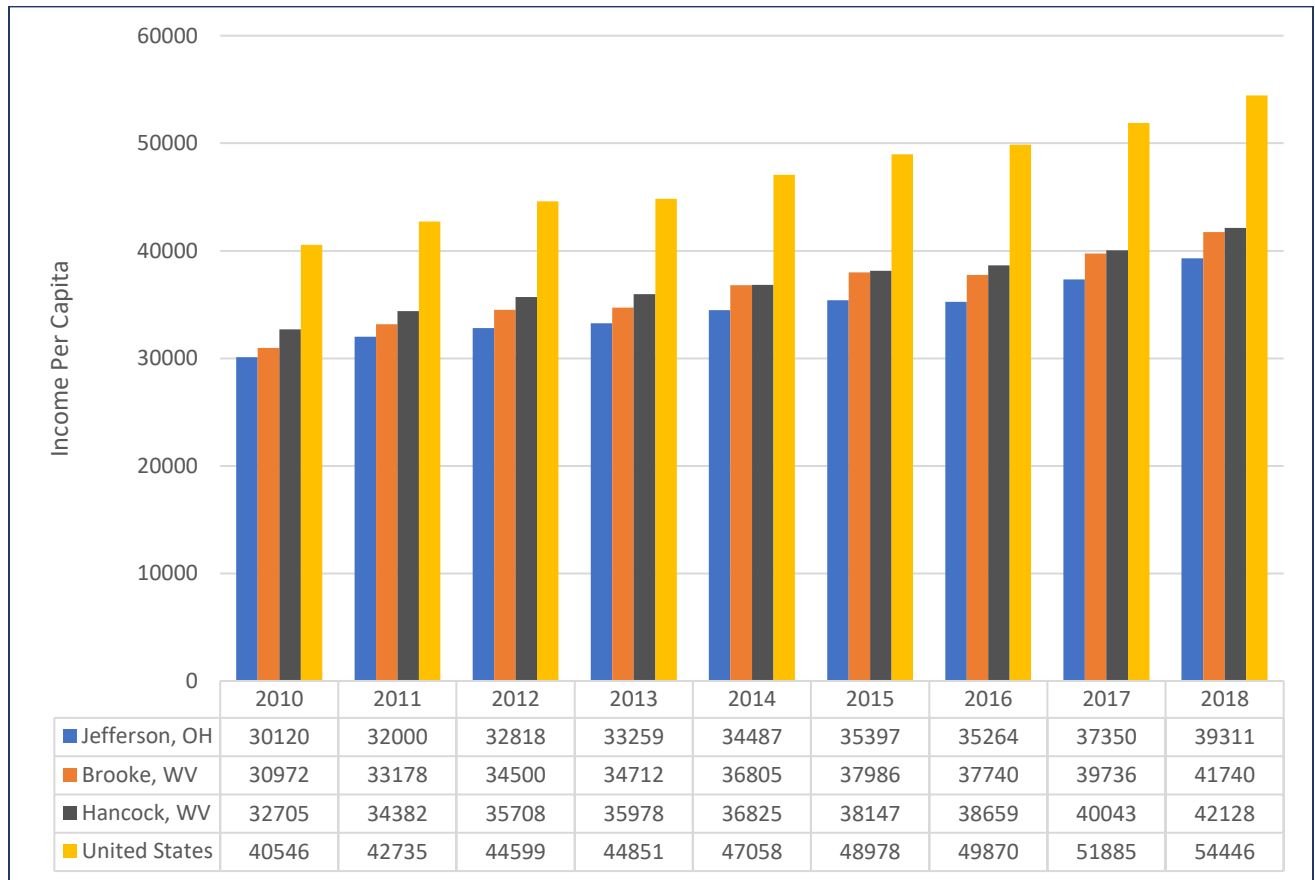
Economic Statistics

Figure 9 GDP Per Capita US, Ohio and West Virginia 2010-2018



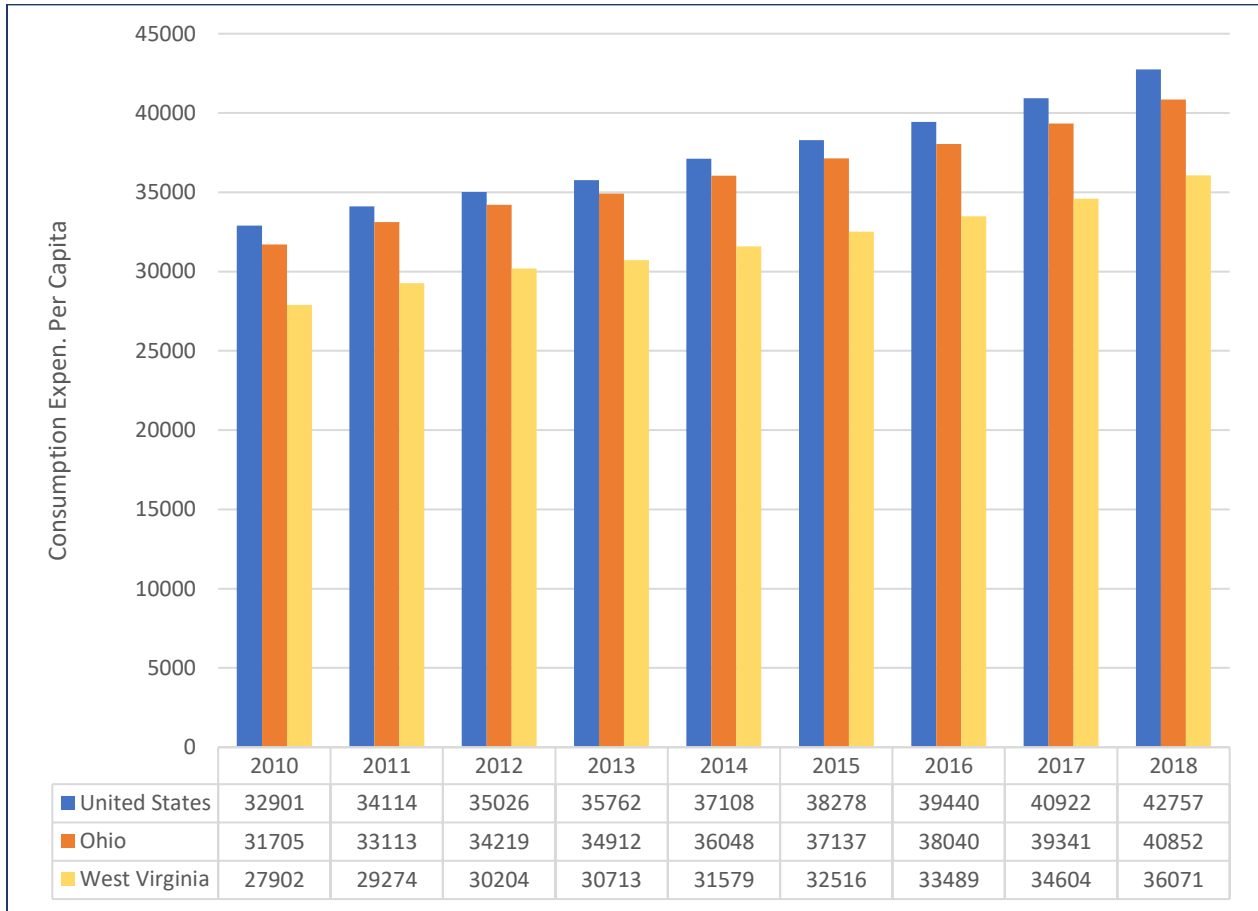
Source- Bureau of Economic Analysis, US Department of Commerce,2019

Figure 10 Per Capita Income Comparison US & BHJ Region 2010- 2018



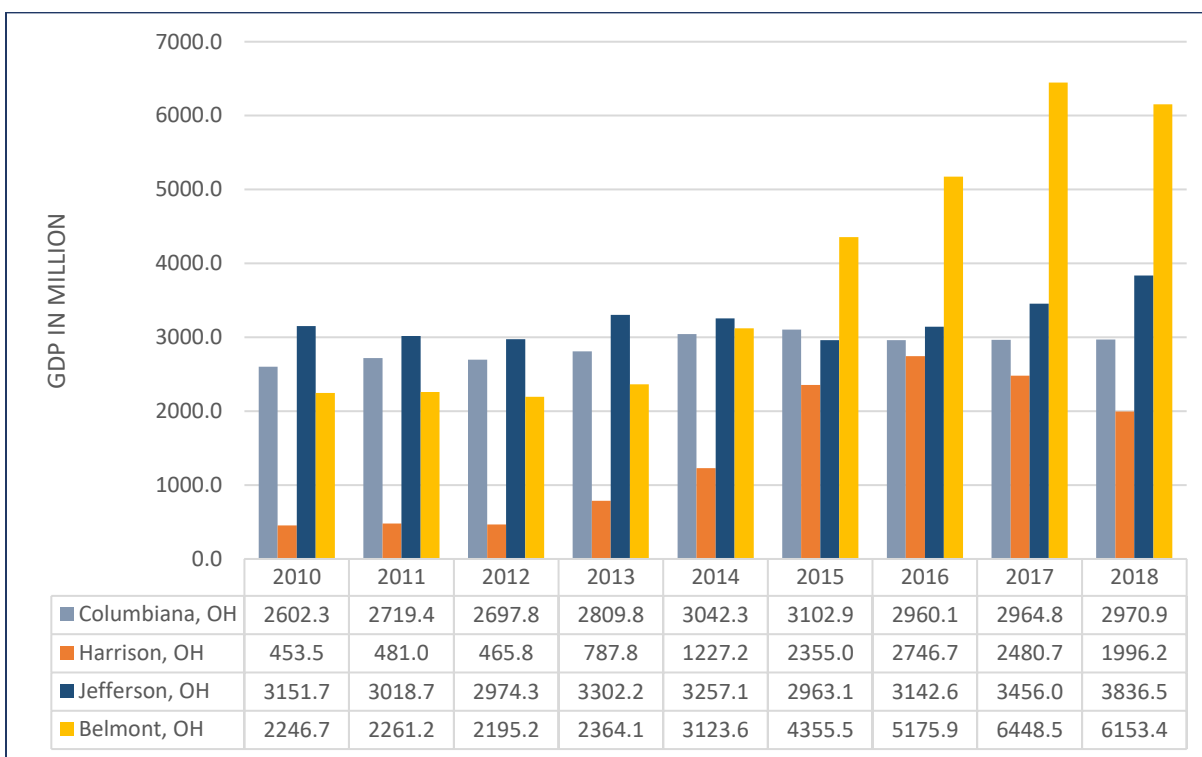
Source- Bureau of Economic Analysis, US Department of Commerce,201

Figure 11 Per Capita Personal Consumption Expenditure US, Ohio and West Virginia 2010-2018



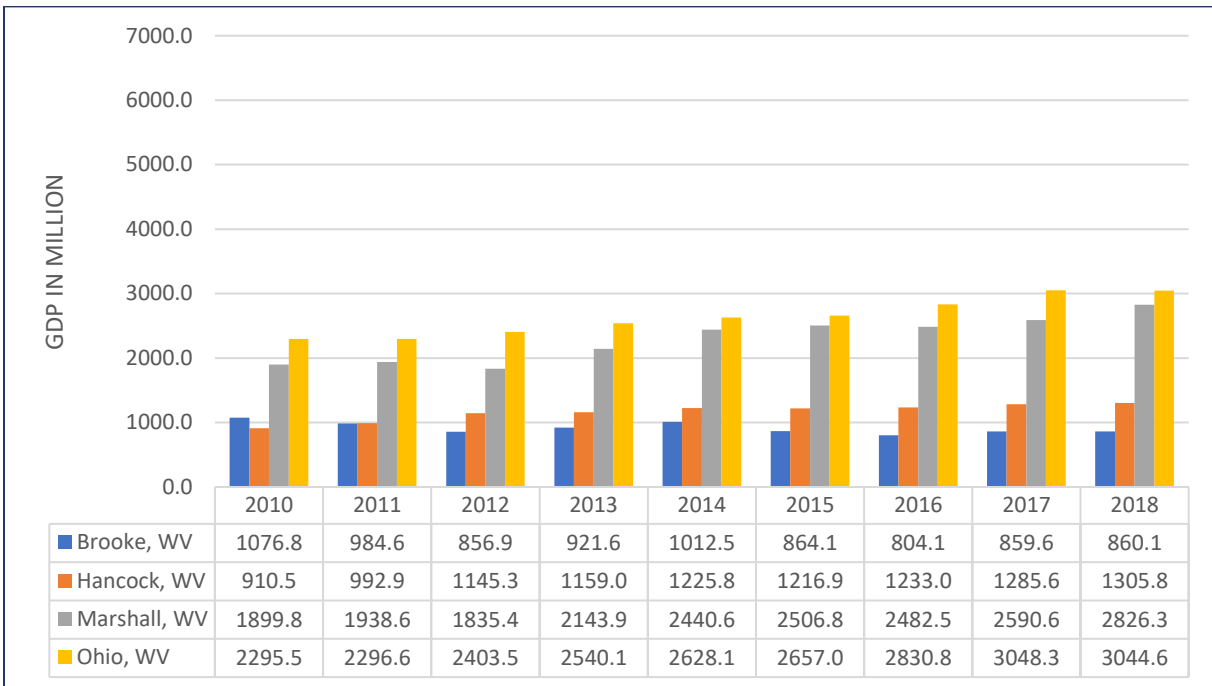
Source- Bureau of Economic Analysis, US Department of Commerce, 2019

Figure 12 GDP Trend in BHJ Surrounding Ohio Counties 2010-2018



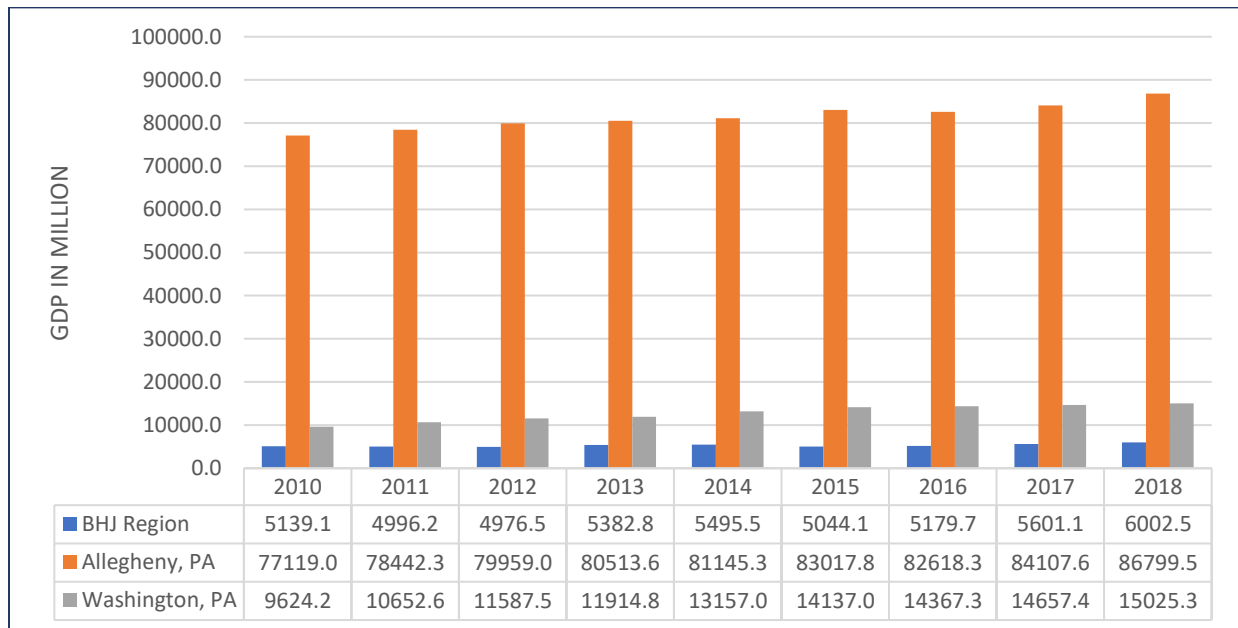
Source- Bureau of Economic Analysis, US Department of Commerce, 2019

Figure 13 GDP Trend in BHJ Surrounding WV Counties 2010-2018



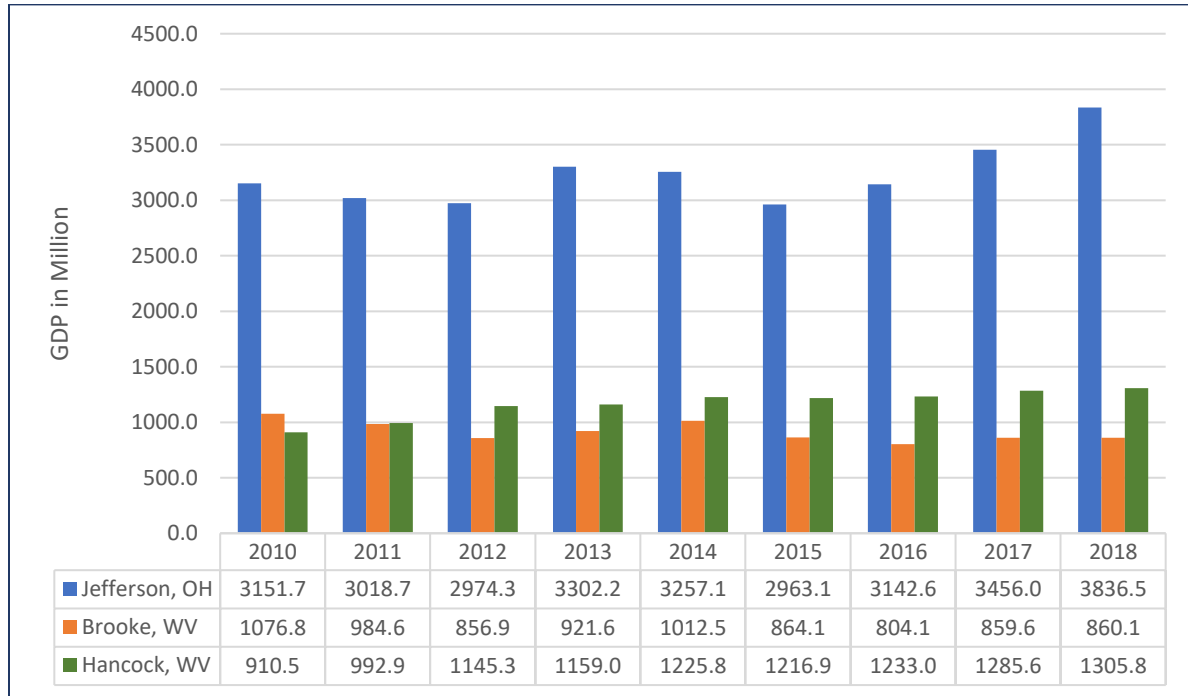
Source- Bureau of Economic Analysis, US Department of Commerce, 2019

Figure 14 GDP Trend in BHJ and Surrounding PA Counties 2010- 2018



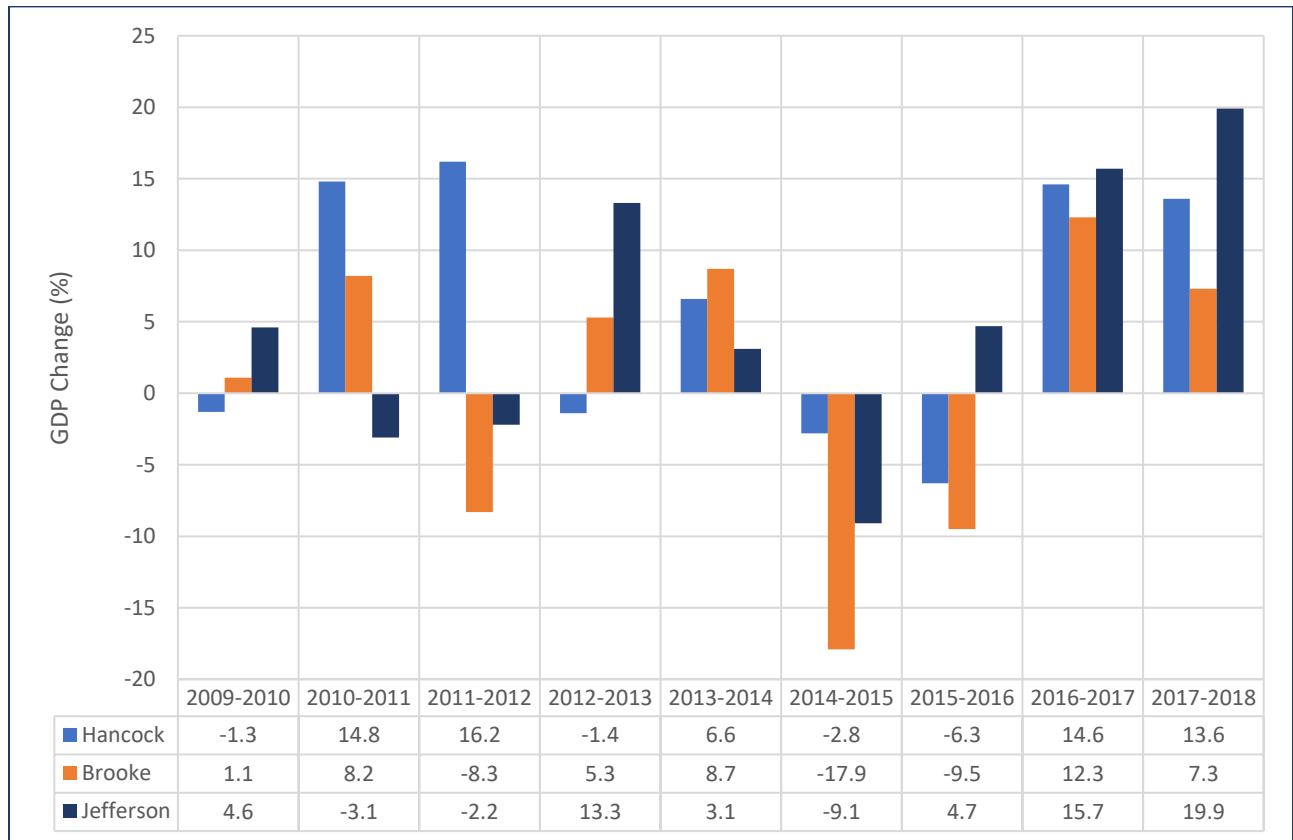
Source- Bureau of Economic Analysis, US Department of Commerce, 2019

Figure 15 GDP Trend in BHJ Region 2010-2018



Source- Bureau of Economic Analysis, US Department of Commerce, 2019

Figure 16 GDP Yearly Change in BHJ Region



Source- Bureau of Economic Analysis, US Department of Commerce, 2019

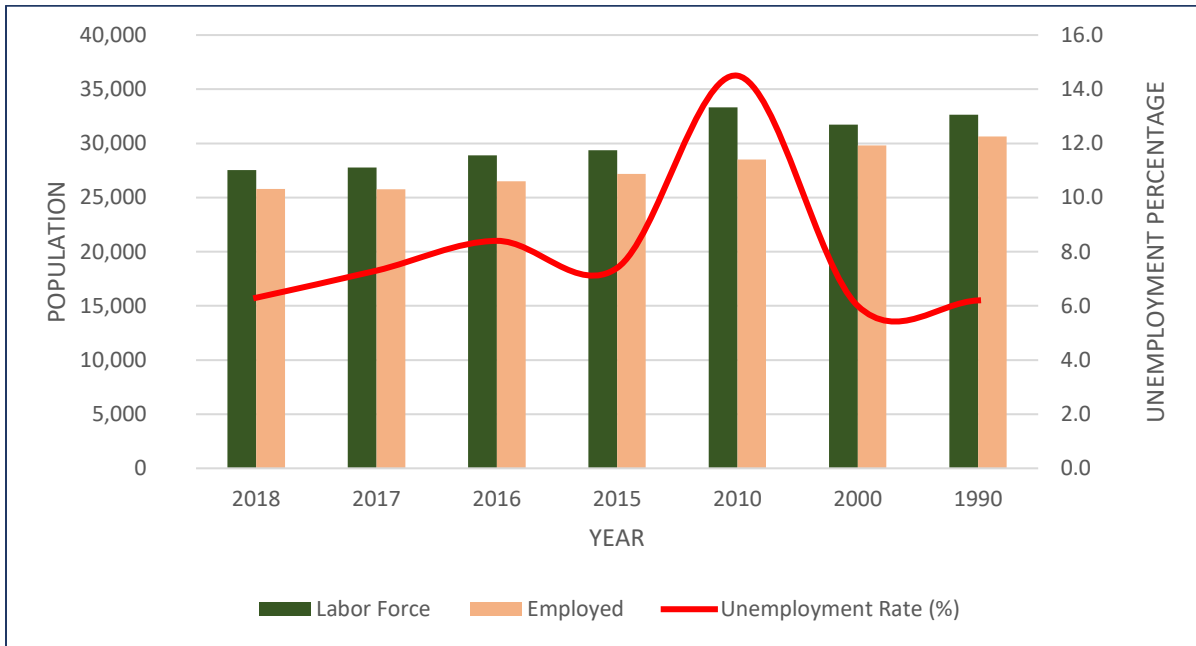
Employment Statistics BHJ Region

Table 14 Employment Trend BHJ Region 1990-2018

Jefferson				
Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2018	27,538	25,793	1,745	6.3
2017	27,784	25,750	2,034	7.3
2016	28,904	26,487	2,417	8.4
2015	29,369	27,187	2,182	7.4
2010	33,335	28,517	4,818	14.5
2000	31,742	29,822	1,920	6.0
1990	32,647	30,631	2,016	6.2
Brooke				
Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2018	9,822	9,219	603	6.1
2017	9,769	9,177	592	6.1
2016	9,984	9,280	704	7.1
2015	10,083	9,344	739	7.3
2010	10,917	9,672	1,245	11.4
2000	11,811	11,267	544	4.6
1990	11,975	11,220	755	6.3
Hancock				
Year	Labor Force	Employed	Unemployed	Unemployment Rate (%)
2018	12,846	12,088	758	5.9
2017	12,811	12,038	773	6.0
2016	12,863	11,962	901	7.0
2015	12,990	11,978	1,012	7.8
2010	14,174	12,456	1,718	12.1
2000	15,702	14,983	719	4.6
1990	15,799	14,902	897	5.7

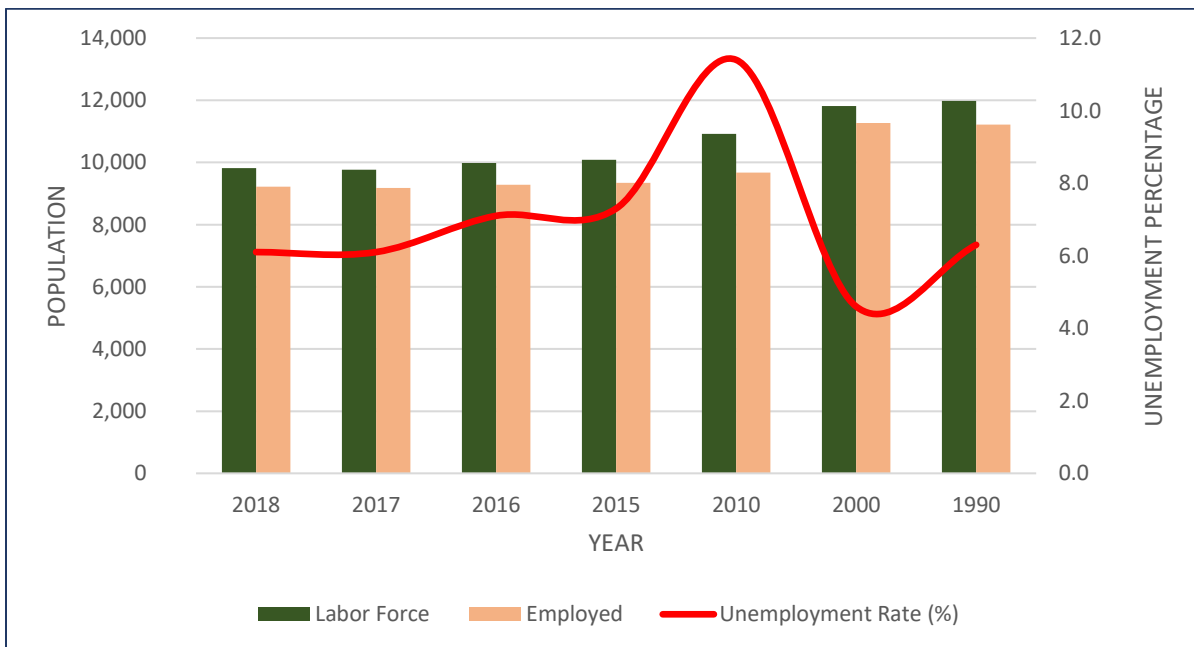
Source- Local Area Unemployment Statistics, Bureau of Labor Statistics ,2019

Figure 17 Jefferson County Employment Trend 1990-2018



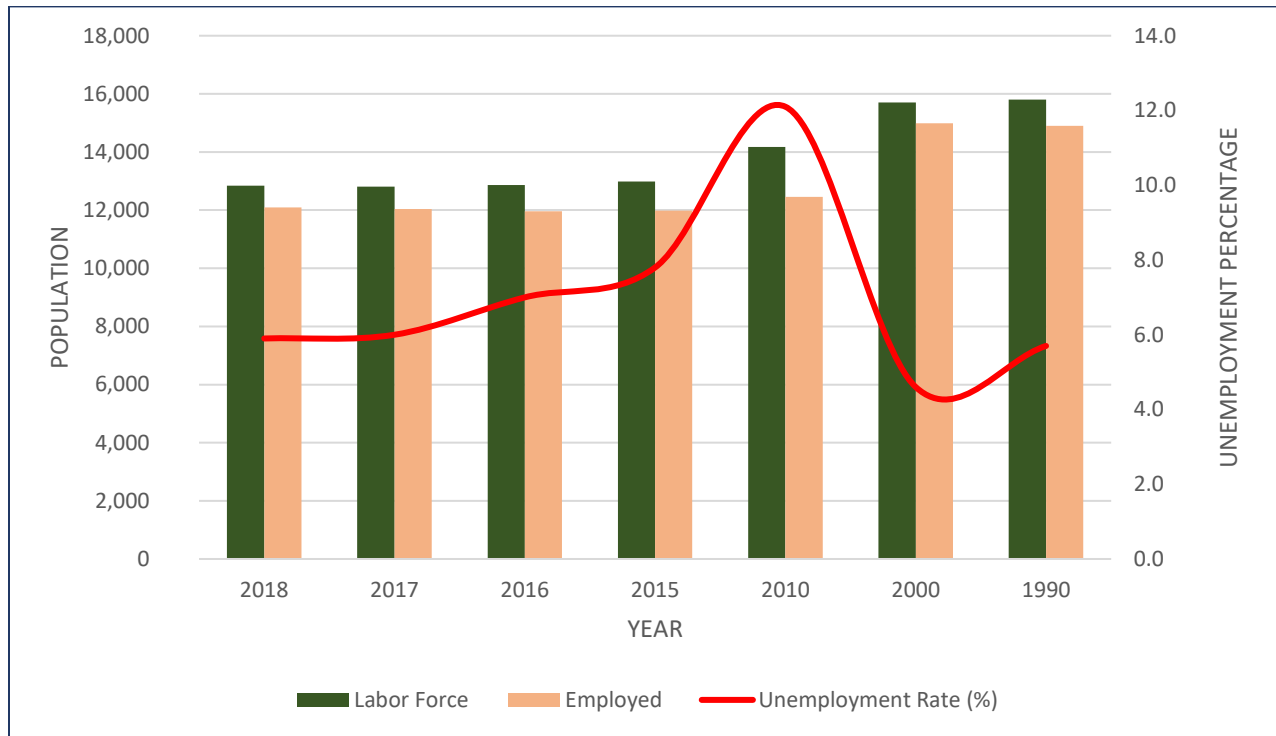
Source- Local Area Unemployment Statistics, Bureau of Labor Statistics ,2019

Figure 18 Brooke County Employment Trend 1990-2018



Source- Local Area Unemployment Statistics, Bureau of Labor Statistics ,2019

Figure 19 Hancock County Employment Trend 1990-2018



Source- Local Area Unemployment Statistics, Bureau of Labor Statistics ,2019

Table 15 Industry by Classification & Top Employment Centers- Jefferson County

Industry classifications	Number of employees	Percentage
Health care & social assistance	4499	21.5%
Retail trade	2771	13.2%
Educational services	1675	8.0%
Accommodation & food service	1576	7.5%
Manufacturing	1557	7.4%
Construction	1248	6.0%
Utilities	1091	5.2%
Public administration	1079	5.2%
Warehousing	1007	4.8%
Administrative and support, waste management & remediation service	752	3.6%
Other services except public administration	672	3.2%
Wholesale trade	648	3.1%
Information	541	2.6%
Personal, scientific & technical services	416	2.0%
Finance & insurance	396	1.9%
Transportation	370	1.8%
Real estate, rental & leasing	296	1.4%
Mining, quarrying, oil & gas extraction	200	1.0%
Arts, entertainment & recreation	109	0.5%
Management of companies and enterprises	34	0.2%
Agriculture, forestry, fishing & hunting	6	0.0%
Grand total	20943	100.0%

Source- Quarterly Census of Employment & Wages, BLS,2018

Table 16 Top 10 employers Jefferson County

Company name	City	County	NAICS Code	Employees
Trinity medical center west	Steubenville	Jefferson	Health care & social assistance	1287
Wal-Mart	Steubenville	Jefferson	Warehousing	737
Titanium metals Corp	Toronto	Jefferson	Manufacturing	538
FirstEnergy generation Corp	Stratton	Jefferson	Utilities	496
Franciscan university of Steubenville	Steubenville	Jefferson	Educational service	427
Wal-Mart	Steubenville	Jefferson	Retail trade	378
Ohio power co	Brilliant	Jefferson	Utilities	335
Bechtel construction co	Stratton	Jefferson	Construction	301
Trinity medical center east	Steubenville	Jefferson	Health care & social assistance	289
JSW STEEL USA	Mingo junction	Jefferson	Manufacturing	268

Source- Quarterly Census of Employment & Wages, BLS,2018

Table 17 Industry by Classification & Top Employment Centers- Brooke County

Industry Classifications	Number of Employees	Percentage
Health Care and Social Assistance	2,105	24.8%
Manufacturing	1,265	14.9%
Government	1,001	11.8%
Retail Trade	947	11.2%
Accommodation and Food Services	813	9.6%
Educational Services	373	4.4%
Other Services (except Public Administration)	356	4.2%
Construction	314	3.7%
Transportation and Warehousing	287	3.4%
Wholesale Trade	201	2.4%
Administrative and Support and Waste Management and Remediation Services	198	2.3%
Arts, Entertainment, and Recreation	157	1.8%
Finance and Insurance	156	1.8%
Professional, Scientific, and Technical Services	98	1.2%
Agriculture, Forestry, Fishing and Hunting	89	1.1%
Real Estate and Rental and Leasing	54	0.6%
Management of Companies and Enterprises	43	0.5%
Information	10	0.1%
Utilities	5	0.1%
Unclassified Industry	3	0.0%
Mining, Quarrying, and Oil and Gas Extraction	0	0.0%
Grand Total	8,473	100.0%

Source- Workforce West Virginia, Department of Commerce, 2019

Table 18 Top 10 Employers Brooke County

Rank	Employer
1	Weirton Medical Center
2	Brooke County Board of Education
3	Wal-Mart Associates, Inc.
4	Mountain State Carbon, LLC
5	Kroger
6	Bethany College
7	WMC Physician Practices, LLC
8	Wheeling-Nisshin, Inc.
9	Eagle Manufacturing Company
10	Brooke County Commission

Source- Workforce West Virginia, Department of Commerce,2019

Table 19 Industry by Classification & Top Employment Centers- Hancock County

Industry Classifications	Number of Employees	Percentage
Manufacturing	2,720	26.5%
Government	1,439	14.0%
Accommodation and Food Services	1,430	13.9%
Health Care and Social Assistance	1,140	11.1%
Retail Trade	878	8.6%
Other Services (except Public Administration)	440	4.3%
Finance and Insurance	398	3.9%
Professional, Scientific, and Technical Services	313	3.0%
Construction	293	2.9%
Transportation and Warehousing	275	2.7%
Arts, Entertainment, and Recreation	264	2.6%
Administrative and Support and Waste Management and Remediation Services	181	1.8%
Real Estate and Rental and Leasing	116	1.1%
Wholesale Trade	111	1.1%
Educational Services	107	1.0%
Utilities	70	0.7%
Mining, Quarrying, and Oil and Gas Extraction	39	0.4%
Information	30	0.3%
Management of Companies and Enterprises	24	0.2%
Agriculture, Forestry, Fishing and Hunting	4	0.0%
Unclassified Industry	0	0.0%
Grand Total	10,272	100.0%

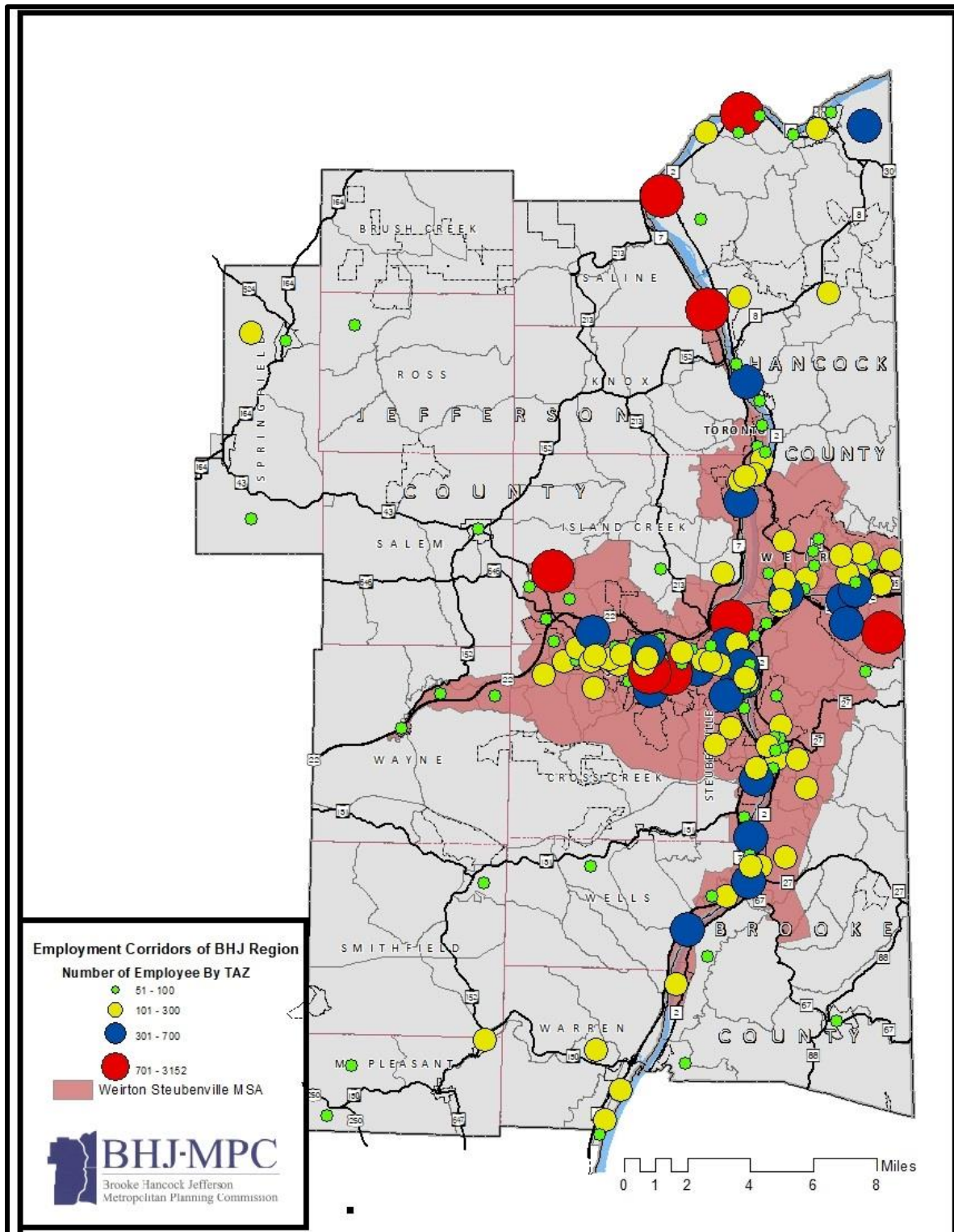
Source- Workforce West Virginia, Department of Commerce,2019

Table 20 Top 10 Employers Hancock County

Rank	Employer
1	ArcelorMittal USA, Inc.
2	Mountaineer Park, Inc.
3	The Homer Laughlin China Company
4	Hancock County Board of Education
5	Bellofram Corporation
6	Weirton Geriatric Center, Inc.
7	Ergon-West Virginia, Inc.
8	Change, Inc.
9	City of Weirton
10	Hancock County Commission

Source- Workforce West Virginia, Department of Commerce,2019

Employment Center Map



Commuting Workflow Statistics

Table 21 Inside BHJ Region Commuter Flow

County of Workplace	County of Residence			Grand Total
	Brooke County	Hancock County	Jefferson County	
Brooke County	4637	1187	1172	6996
Hancock County	1242	6378	1361	8981
Jefferson County	821	1128	17272	19221
Grand Total	6700	8693	19805	35198

Source- US Census Bureau, Commuter Flow 2011-15

Table 22 Top 10 Counties of Workplace from BHJ Region

County of Workplace	County of Residence			Grand Total
	Brooke County	Hancock County	Jefferson County	
Allegheny County	1065	2255	1932	5252
Ohio County	989	218	1349	2556
Belmont County	161	45	1402	1608
Washington County	509	428	390	1327
Columbiana County	58	538	468	1064
Beaver County	94	377	116	587
Harrison County	12		504	516
Marshall County	184	135	180	499
Carroll County			203	203
Stark County	17		155	172

Source- US Census Bureau, Commuter Flow 2011-15

Table 23 Top 10 Counties of Residence working in BHJ Region

	County of Workplace			
County of Residence	Brooke County	Hancock County	Jefferson County	Grand Total
Columbiana County	76	1635	693	2404
Belmont County	262	37	727	1026
Harrison County	108	43	786	937
Allegheny County	224	203	247	674
Ohio County	228	158	280	666
Washington County	129	306	158	593
Carroll County		42	316	358
Beaver County	14	94	42	150
Mahoning County		83	41	124
Tuscarawas County	19		90	109

Source- US Census Bureau, Commuter Flow 2011-15

Future Employment Projection 2016-2026

Table 24 Future Employment Projection of South East Ohio

Description	Employment		Projected Change	
	2016 Annual	2026 Projected	2016-2026	Percent
Goods Producing	80746	80869	123	0.15%
Service Providing	262121	279081	16960	6.47%
Self Employed and Unpaid Family Workers	16357	17784	1427	8.72%
Total	359224	377734	18510	5.15%

Description	Employment		Projected Change	
	2016	2026	2016-2026	Percent
Natural Resources and Mining	29426	30366	940	3.19%
Construction	14137	15668	1531	10.83%
Manufacturing	69810	67,520	-2,290	-3.28%
Trade, Transportation, and Utilities	65518	68234	2716	4.15%
Information	2953	2626	-327	-11.07%
Financial Activities	10460	10892	432	4.13%
Professional and Business Services	18561	21073	2512	13.53%
Education and Health Services	91350	101951	10601	11.60%
Other Services	12972	13499	527	4.06%
Government	27680	28121	441	1.59%
Self Employed and Unpaid Family Workers	16357	17784	1427	8.72%
Total	359224	377734	18510	5.15%

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, July 2019.

Table 25 Future Employment Projection of Region 5 West Virginia

Description	Employment		Projected Change	
	2016 Projected	2026 Projected	2016-2026	Percent
Goods Producing	3424	3416	-8	-0.23%
Service Providing	57691	60811	3120	5.41%
Total	61115	64227	3112	5.09%

Description	Employment		Projected Change	
	2016	2026	2016-2026	Percent
Management Occupations	3021	3189	168	5.56%
Business and Financial operations Occupations	2746	2729	-17	-0.62%
Computer & Mathematical Occupations	515	548	33	6.41%
Architecture and Engineering Occupations	304	312	8	2.63%
Life, Physical and Social Science Occupations	321	344	23	7.17%
Community & Social Service Occupations	2205	2406	201	9.12%
Legal Occupations	616	678	62	10.06%
Educational Instructions & Library Occupations	2627	2866	239	9.10%
Arts, Design, Entertainment, Sports & Media Occupations	413	433	20	4.84%
Healthcare practitioners and Technical Occupations	4526	5080	554	12.24%
Healthcare Support Occupations	2013	2389	376	18.68%
Protective Service Occupations	875	929	54	6.17%
Food Preparation & Serving related Occupations	5923	6181	258	4.36%
Building and Ground Cleaning and Maintenance Occupations	2309	2506	197	8.53%
Personal Care & Service Occupations	2841	3315	474	16.68%
Sales & Related Occupations	5797	5795	-2	-0.03%
Office & Administrative Support Occupations	9910	9851	-59	-0.60%
Construction & Extraction Occupations	2992	3165	173	5.78%
Installation, Maintenance, and Repair Occupations	3468	3625	157	4.53%
Production Occupations	3424	3416	-8	-0.23%
Transportation and Material Moving Occupations	4269	4470	201	4.71%
Total	61115	64227	3112	5.09%

Source- Workforce West Virginia, Department of Commerce, 2019

SECTION 3: TRANSPORTATION SAFETY
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SECTION 3 – TRANSPORTATION SAFETY

The Brooke Hancock Jefferson Metropolitan Planning Commission (BHJ-MPC) is the Metropolitan Planning Organization (MPO) for Brooke and Hancock county of West Virginia and Jefferson County of Ohio. The MPO is responsible for evaluating systems analyses and operations to identify transportation needs of the region. One important aspect of this task is to identify locations that are demonstrating higher than normal crash occurrences. To address this need and to evaluate high crash locations, BHJ started a System Performance and Safety Monitoring Program (SPSMP) for the year 2013-17. The intent of these reports is to provide a generalized assessment level of roadway safety on federal-aid-eligible routes. The findings will be used to focus limited resources on locations currently experiencing high crash frequency and inform and encourage other local jurisdictions to pursue state safety funds for these projects.

The key objectives of this report are

- To identify high crash locations and locations for future safety audits.
- Review different factors associated with these crashes.
- Developing general recommendation for the overall traffic safety improvement of this region.

BROOKE & HANCOCK COUNTY LOCAL ROAD SAFETY PLAN SUMMARY

The data contained in this report is collected from Uniform Traffic Crash Reports submitted by state law enforcement agencies. These law enforcement agencies include the West Virginia State Police, all County Sheriff's Departments and Municipal Police Departments, as well as other agencies. These data are stored in West Virginia Division of Highways and collected from there.

The total number of fatal crashes reported from year 2013-17 were 15 and the number of serious crashes were 103. The numbers are highest in 2014 and lowest in 2016. Almost 53% of the total fatal and serious injury crashes took place in the WV state highways. Then comes the county routes with 21% of the crashes. 71 % of the crashes took place in a two-way undivided roadway. Most of the fatal crashes also took place there. Absence of medians seem to have a negative impact on the road safety of this region.

According to the Crash Severity Map, Hancock county was found more vulnerable to fatal and serious injury crashes than Brooke County. Among 10 fatal crashes, 4 of them took place in route 8 near Tomlinson Run state Park Alone. Then there is one (1) on Route 30, Three (3) on Route 2 and one (1) over 67. But if serious injury is the only considerations, Brooke county has more crashes than Hancock in this aspect. Weirton, Wellsburg and Follansbee have more crash point density than the rest of the locations. Majority of the crashes were recorded over Route 2. The numbers are higher in the Brooke county. Though 3 fatal crashes took place over Route 8, it has a crash number less than 150. Route 105 in Weirton and Route 67 on Brooke county also found to have similar number of crashes. Route 2 on Hancock county accompanied by Route 27 on Wellsburg and Follansbee are found to have crash number ranges from 151-400.

The total numbers of intersection crashes were found 507 with no Fatal crashes. 2017 has the highest intersection crashes with 139 incidents while the lowest is in 2016 which is 76. Almost 40% of the crashes took place between 2 PM- 6 PM time period. In between this period, the percentage is higher in 2-4 PM time period, rather than the general Peak hour 4 -6 PM. Most of these crashes are either single vehicle crashes hitting stationary object (Utility pole or light support), with another vehicle or rear end collisions. In the manner of leaving the scene, 60% of these crashes are found with minor damage and driven away rather than functional damage. Aggressive driving and speeding are found as the reason behind these crashes.

Wellsburg (25.7%) has the highest percentage of intersection crashes. Majority of the crashes that are recorded in the intersection are right angle collisions. Due to small turning radius and speeding most of these right angle and rear to side crashes took place.

Almost 54% of the total intersection crashes took place in T intersection. The two-opposite spectrum of age group 20-24 & 60-64 found more involved in the crashes than the rest of the age group. 44% of the crashes occurred in the intersection without any traffic control devices. By that, it mainly indicates those “T intersections” with Route 2 where thru traffic has the right of way and the local links don’t have any proper traffic control measure. It results in inappropriate left and right turn from local feeders to main road and resulted in all these crashes.

According to this study, 82% of the intersection crashes took place in dry weather and only 16% have impact of rain or snow. This interpretation is true for lighting condition also. Almost 78% of the crashes took place in broad day light. Only 5 % of the crashes are recorded where driver is found drunk and another 4 % under influence of drugs. Restraint use has a positive impact on reducing fatal crashes in the intersection locations. Majority of the drivers are found in shoulder and lap belt which prevent the severity level of the crashes.

The total Number of Crashes recorded in the non-intersection locations are 2385. Of them 15 are fatal crashes. Majority of the crashes are found with minimum loss or in common terms “Fender Bender”. The yearly distribution of crashes is also uniform. The number is highest in 2014 with 528 and minimum 436 in 2016.

Almost 37% of the crashes takes place between 1 PM- 6 PM time period. Weirton has the highest number of non-intersection crashes among the cities of Brooke and Hancock. This city also has the highest percentage of Injury fatality crashes reported in between year 2013-17. Most of the crashes in Weirton is located over Route 105 and Route 2. Most of the injury fatality crashes that are recorded in the non-intersection points are singles vehicle crashes.

There are total 70 crashes recorded in the work zone (66) and School zone (4) among which 17 of them are injury fatality crashes. Most of them are work zone crashes. In almost half of the crashes (27) workers were present at the scene. Most of them occurred at the transition (Merge Area) or the activity area of the work zone. 50% of these crashes took place between 12 PM to 6 PM. So, lighting condition wasn’t the issue. The only probable cause can be reckless driving and speeding for all these restrictive zone crashes.

The surface condition seems to have no significant impact on the number of crashes of this region. 69% of these crashes occurred in a dry surface and 66.2 % of them are in Daylight. Only 11% of the crashes took place in winter weather and majority of them are in Dark not lighted condition due to skidding and black ice. Over that, 17 % of the crashes are also recorded in a wet surface which can be either due to rain or snow. Over 10% of the crashes are recorded where drivers are found guilty of driving under the influence of alcohol and the percentage is 3 when it comes to drug abuse.

Restraint use has a positive impact on reducing fatal crashes in the Non-intersection locations also. According to the crash data, majority of the drivers are found in their shoulder and lap belt which prevent the severity level of the crashes.

JEFFERSON COUNTY LOCAL ROAD SAFETY PLAN SUMMARY

The crash trend of Jefferson County is static. The total number of crashes recorded between 2013-17 is 6202. There is a total of 24 fatalities and 251 incapacitating crashes recorded in this time period. The highest percentage of crashes were recorded in 2015 (20.9%) and the lowest percentage in 2017 (18.7%). From 2016, the fatal and serious injury crashes are showing a rising trend which is a concerning issue. There was a total of 9 non-motorized fatal

and serious injury crashes recorded where 1 (Pedestrian) was fatal. On average, the fatality rate for Jefferson County is almost 5 crashes per year while for serious injury, the number is 40. Unlike urban localities, the majority of crashes recorded in Jefferson County are fixed object crashes (31.7%). Friday evening is found to be the most crash-prone period, while the lowest percentage of crashes are recorded on Sunday. On average, 31% of crashes are recorded in the peak hours from 2 PM- 6 PM. The State (46.1%) and County Roads (31.9%) have more crashes than U.S., Municipality, and Township Roads. Though the majority of crashes are recorded in clear weather, daylight, and dry road surface conditions, this study found 19% of crashes were in inclement weather conditions. More than a quarter (29%) of crashes are recorded where roadway conditions (Wet, Snow, Mud, Slush etc.) seem to have an impact on the crash and 17% of crashes took place in a roadway without any light at night. The majority are recorded as “Not an Intersection” crashes, while in comparison to that, the intersection crashes are minimum. The majority of these intersection crashes took place in The City of Steubenville and on the entrance/exit ramps with U.S. 22 and State Route 7. Most of the non-intersection crashes result from fixed object and sideswipe passing crashes while rear end and left turn collisions are prominent in the T and four-way intersection crashes. The pedestrian (36) and pedal cycle (6) crashes also result inside the city non-intersection points. There is a total of 382 crashes reported where animal, mostly deer, were involved and they took place on the U.S. and Country Roads. Unsafe speed (16%), failure to control (16.4%), improper lane change (12.3%), failure to yield (11.2%) and failure to maintain safe following distance (14.8%) are found to be major contributing factors for crashes. Almost 60% of crashes take place in plain, normal grade and only 11% take place while negotiating curves. Reckless and aggressive driving contributes to the majority of crashes of this locality. Another concerning figure of this study is the 9.7% non-motorist crashes, which include pedestrians, bicycle, and animal-related crashes. A total of 688 crashes are recorded where drivers were found under the influence of Drugs and Alcohol. Substance abuse has a serious impact on the fatal and serious injury crashes of Jefferson County. 75 % of fatal and 33% of serious injury crashes were related to Alcohol and Drug use.

The majority of these crashes are recorded from The City of Steubenville and Island Creek jurisdiction boundary. In comparison to these two locations, the rest of the localities have a negligible amount of traffic count occurrences. The male-female ratio between at fault drivers of Jefferson County is 2:1, respectively. Young adults of the age group 20-24 are involved in more crashes than the rest of the age brackets. In general, teenagers and young adults of the age group 15-24 are more involved in fatal and serious injury crashes. In comparison to that, the elderly generation (people over the age 65) are less crash prone in this county. While the number of people is higher in the age groups 40-54 and 80-89 in this county, the number and percentage of crashes in these age groups are at a minimum. There are 14 crashes recorded in school zones where one (1) of them was an incapacitating injury. The situation is unfortunately much worse in work zones. There was a total of 216 crashes recorded in work zones where the majority of them are in the transition and activity area of the work zone. There was a total of 404 crashes recorded where the driver admits to being distracted by either someone inside their vehicle or some other outside factor. While different communication and electronic devices are found responsible for 20% of these distracted driving crashes, distraction by passengers are responsible for more crashes than that.

From the correlation matrix study, it was found that serious injuries and fatalities have a strong relationship with fixed object crashes. This means the probability of there being a fatality is higher in fixed object crashes rather than other crash types, like rear end or sideswipe collisions. These crashes are mostly caused by speeding and involves unrestrained occupants under the influence of Drugs or Alcohol. For rear-ending collisions, it is mostly lack of expertise in driving and failure to control the vehicle are the cause, but fixed object crashes should be given high priority when dealing with safety countermeasure for this region.

Among the major contributing factors, aggressive speeding has the strongest relationship with fatal and serious injury crashes. Failure to maintain a safe following distance (ACDA) also has a strong relationship with fatal and serious injury crashes. Special attention is needed to tackle speeding and ACDA issues.

Both unrestrained occupants and drug and alcohol use have a strong positive relationship with fatal and serious injury crashes. Drug and alcohol use also trigger aggressive speeding while the behavior of unrestrained occupancy tends to influence failure to maintain safe distance.

For understanding the most crash-prone routes (freeway & non-freeway together) in Jefferson County, this study conducted a 3 Phase High Crash Segment Identification approach. In the first phase, this study conducted a hotspot analysis through a Geographic Information System analysis and identified the hotspot locations in Jefferson County. A total of 1854 crash points were found through this analysis where 20 or more crashes occurred in a same location. In the second phase of the study, the number of crashes per mile over these hotspots are calculated and the most vulnerable segments identified. The segments with 10 or more crashes per mile have been separated. Based on these two approaches, the overlapping segments are selected for the final process. Then the AADT value, total miles, and number of fatal and serious injury crashes for all of those segments are collected. Based on the linear positive relationship with the total number of crashes with each of these factors, in the third phase of this study, a linear regression analysis was developed to understand and identify the most vulnerable road segments of Jefferson County. This study also developed a ranking list of urban, rural, freeway, and intersection locations with high crash occurrences for future project emphasis.

COUNTERMEASURE STRATEGY

To address these issues here are some the suggestions outlined based on different road safety practices around the U.S. and strategies developed in safety documents like NHTSA's Safety Countermeasure Guide. FHWA's proven countermeasure guide have also been incorporated here.

Action items will be itemized in the following way:

#	Description	Action Lead	Output Measure	Timeline
Action strategy number	Description of the strategies	Organizations who will be in charge of implementation	Impact of the strategy	Short: <2 Years Medium: 2-5 years. Long: 5 + Years Ongoing: Actions already exists and need continuation.

The factors which are found to be most crucial in crash and safety for the region are:

- Aggressive Driving and Speeding.
- Fixed Object Crashes.
- Drug and Alcohol Abuse.
- Unrestraint occupant.
- Younger Drivers.
- Absence of appropriate pedestrian and Bike safety measures.
- Lack of skilled, safe and defensive driving practice- Example: Failure to control and ACDA behavior, Improper lane change.
- Lack of curvature delineation and curve grade road safety measures.
- Lack of Lighting in rural high-speed swerving roads.
- Absence of signalized and non-signalized traffic control system in vulnerable intersections.
- Work zone Safety.

STRATEGY 1: CONTROL AGGRESSIVE DRIVING AND INTRODUCE MEASURES TO REDUCE SPEEDING IN ROADS.

#	Description	Action Lead	Output Measure	Timeline
1.1	To ensure safety and security on the roads, it is necessary to review current signage policies and procedures applicable to speeding and aggressive driving, such as speed limit, targeted enforcement and explore for countermeasures like Light and Detection and Ranging (LIDAR), Friendly ticketing warning system and speed trailers etc.	ODOT, County engineer's office, District 11 ODOT, WV Division of Highways Central Office & District 6, Division of Motor Vehicles, West Virginia and Ohio State Police, City and Town Police, BHJ MPC.	Enforcement of Different Technological speed and aggressive driving control measures to roads.	Short, Medium & Long.
1.2	Detailed Study is necessary to identify locations suitable for appropriate road diets and necessary to perform safety studies like Road safety audits, system safety improvements.	ODOT, County engineer's office, District 11 ODOT, WV Division of Highways Central Office & District 6, Division of Motor Vehicles, West Virginia State Police	Identification of locations appropriate for road diet to control speeding and prevent crashes.	Ongoing and Short.

#	Description	Action Lead	Output Measure	Timeline
		City and Town Police, BHI MPC.		
1.3	Enhanced Delineation and Friction for Horizontal Curves, High reflective chevrons, curve warning signages, Advance intersection and street signage should be implemented as much as needed.	ODOT, County engineer's office, District 11 ODOT, WV Division of Highways Central Office & District 6, Division of Motor Vehicles, West Virginia State Police City and Town Police, BHI MPC.	Reduction of crashes in Curve and roadway departure related incidents.	Ongoing, Short, Medium.

STRATEGY 2: PREVENT ALCOHOL IMPAIRED DRIVING AND REDUCE ALCOHOL RELATED CRASHES

#	Description	Action Lead	Output Measure	Timeline
2.1	Utilize phantom checkpoints and low sobriety check points several times throughout a shift to leave the public with the impression that checkpoints are everywhere and will catch impaired drivers.	City and state police and other Law Enforcement Agencies.	Ensure strong presence of law enforcement agencies which may create fear of ticketing and license suspension.	Short.

#	Description	Action Lead	Output Measure	Timeline
2.2	Develop or utilize existing communications materials to target high school and college on underage drinking and/or drug use and impaired driving. Along with that outdoor advertisements in targeted locations and driving simulation stalls in different community events and fairs will have positive impact in creating safety awareness among people.	ODOT, County engineer's office, District 11 ODOT, WVDOH District 6, Local Schools, community colleges, City and state police, BHJ MPC.	Creating awareness to future drivers.	Short, Medium.
2.3	Review and revise license manual and driving test to include questions on impaired driving and prescription drug use, recreational marijuana and alcohol.	Division of Motor Vehicles.	Creating awareness to future drivers.	Medium, Long.
2.4	Administrative License Revocation or Suspension (ALR/ALS) for drunk driving.	Division of Motor Vehicles, City & State troopers, Sheriff's office.	Intensity of Penalties will make people aware of severity of Drunk driving.	Long.

STRATEGY 3: REDUCTION OF CRASHES RELATED WITH ABSENCE OF RESTRAINT USE.

#	Description	Action Lead	Output Measure	Timeline
3.1	Educate Law makers & Decision makers about benefits of increasing penalties (i.e., fines/ points) for seatbelt and helmet violations and encourage them in revising primary seatbelt law to include all passengers in all seating positions and promote short term, high visibility seat belt law.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, Commissioner's offices, BHJ MPC.	Strengthen laws against unrestraint driving practice.	Medium, Long.
3.2	Develop and distribute easily referenced information on appropriate selection and installation of child passenger safety seats for parent and caregiver reference. Different agencies like state police, fire departments, hospitals should be incorporated in this scheme. Free training on restraint and child restraint system and child seat giveaway session can be organized in different locations of the county.	ODOT, WVDOH, County engineer's office, District 11 ODOT, WVDOH District 6, Local Law Enforcement Agencies, BHJ MPC.	Create awareness among mass population on seat belt safety and its benefit.	Short, Medium.

STRATEGY 4: INFRASTRUCTURAL IMPROVEMENT – CONSTRUCT AND REPAIR ROAD DIVIDER, MEDIANS, INTRODUCE SPEED MITIGATION DESIGNS LIKE ROAD DIET, LANE STRIPPING, PUT MARKERS AND REFLECTORS.

#	Description	Action Lead	Output Measure	Timeline
4.1	Case based study is required for identifying specific locations where median installment or road diet is necessary.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Ensure proper utilization of available funds.	Short, Medium.

#	Description	Action Lead	Output Measure	Timeline
4.2	Installation of appropriate and clear road markers, reflective signs and raised reflective pavements for standard safety measures.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Ensure night and inclement weather road safety.	Ongoing, Short.
4.3	Construction of Road diet, Rumble strips, Bottleneck choker alignment, raised median or pedestrian refuge, roundabout, Chicane etc.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Long term safety solution.	Long.

STRATEGY 5: IMPROVING WORK ZONE SAFETY AND CREATE EARLY WARNING SYSTEM FOR DRIVERS ON ROAD.

#	Description	Action Lead	Output Measure	Timeline
5.1	Introduce police-operated photo radar enforcement vans, unmanned parked police vehicle strategy for Work zone safety.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Strong presence of law enforcement agencies for work zone safety.	Medium, long.
5.2	Automated speed feedback display devices, speed trailers or friendly speed warning ticketing system can be put in the work zone for safety.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Create awareness among drivers about work zone safety and punishment for speeding.	Short, Medium.

#	Description	Action Lead	Output Measure	Timeline
5.3	Developing a well-designed and managed advance warning system for rural roads with curves and high speed.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Ensure proper and effective utilization of limited resources.	Short.
5.4	Variable speed limits for freeway and state highway work zone locations.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Ensure more control over traffic in work zones.	Medium.

STRATEGY 6: ENSURE A SAFE AND COMFORTABLE DRIVING EXPERIENCE FOR THE AGING POPULATION.

#	Description	Action Lead	Output Measure	Timeline
6.1	<ul style="list-style-type: none"> Introducing protected left turn in the vulnerable intersections. Offsetting left turn lane where possible and appropriate. Improving nighttime visibility, well-lit street sign, improved roadway lighting, Reflective backplates for traffic signals and raised reflective pavement installation. Introducing Advance street name signs for major arterial roads. Advance warning for signals and stop signs should also be placed based on necessity. Installing Rumble stripes on the centerline of undivided 2 lane roads and rumble strips on the shoulder where necessary. 	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Infrastructural improvement and safety for senior drivers.	Short, Medium, Long.

#	Description	Action Lead	Output Measure	Timeline
6.2	Developing training programs for aging population on defensive driving.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Improve driving skills of Senior drivers to overcome their different psychological and physical driving constraints.	Medium, Long.
6.3	Developing alternative transportation modes with collaboration of local transit agencies and other available transportation agencies.	BHJ MPC.	Take out risky drivers out of streets and ensure their necessary mobility options.	Ongoing, Short, Medium.

STRATEGY 7: ENSURE A SAFE DRIVING ENVIRONMENT FOR YOUNG DRIVERS.

#	Description	Action Lead	Output Measure	Timeline
7.1	Revisit the existing driving education, legal structure and licensure testing system. Introduce more rigorous road test system and include materials related with defensive & Safe driving.	Division of Motor Vehicles.	Robust safety training for younger and newer drivers.	Medium & Long.
7.2	In the early license period, measures like “Short term passenger restrictions” or “Nighttime driving restriction “can be introduced for new drivers.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Ensure safety buffer period for new drivers.	Long.
7.3	Government can subsidize in “behind the wheel practices” and can introduce “free defensive driving lesson programs” for teenagers and new drivers.	Division of Motor Vehicles, ODOT, WVDOH.	Ensure adequate road driving practice for new drivers.	Long.

#	Description	Action Lead	Output Measure	Timeline
7.4	Introduce traffic safety campaign videos in social media.	ODOT, WVDOH, BHI MPC.	Increase awareness.	Short.

STRATEGY 8: ACTIVE TRANSPORTATION AND EMERGING TRENDS (E SCOOTER, SEMI-AUTONOMOUS VEHICLES ETC.)

#	Description	Action Lead	Output Measure	Timeline
8.1	Work with communities to identify need for low stress/connected Bike Lane and sidewalk planning & development.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHI MPC.	Good Starting point towards comprehensive active transportation plan for the county and it's adjacent localities.	Short.
8.2	Developing a comprehensive active transportation plan by connecting all the trails and potential active transport routes and develop a uniform Bi state (Ohio, West Virginia) bike trail system with focus of the state parks and Ohio river.	BHI MPC.	Future improvement of active transportation in this region.	Long.
8.3	Developing new educational literature to inform people on new infrastructures and emerging trends like E scooter, Electric vehicles, autonomous and connected vehicles.	BHI MPC, ODOT, WVDOH.	Understanding newer developments in transportation sectors.	Short.
8.4	Allocate local government funds toward comprehensive maintenance of pedestrian infrastructure including ADA ramps and crossings, snow removal, crosswalk markings, trip hazards, etc.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, Cities, BHI MPC.	Encourage people more into active transportation.	Ongoing, Short, Medium.
8.5	Organize active modes awareness sessions and provide free bike-pedestrian safety equipment's to people.	BHI MPC, ODOT, ODOT District 11 office, WVDOH, WVDOH District 6, local active	Engage people in active transportation planning and encourage them	Short, Medium.

#	Description	Action Lead	Output Measure	Timeline
		transportation user groups.	more into biking and walking.	

STRATEGY 9: IMPROVE CURVE DELINEATION AND CURVE GRADE ROAD SAFETY MEASURES.

#	Description	Action Lead	Output Measure	Timeline
9.1	For enhanced delineation the following treatments can be introduced. <ul style="list-style-type: none"> • Pavement markings with reflective pavement markings. • Post Mounted delineation. • Larger signs, Chevrons with retro reflectivity. • Dynamic advance curve warning signs and sequential curve signs. 	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Improved curve delineation can reduce at grade crashes.	Ongoing, Short.
9.2	For curve at grade safety, high friction surface treatment can be a good option. Along with longitudinal centerline and shoulder rumble strips on vulnerable segments can be an effective option.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Improved road safety in at grade roads.	Short, Medium, Long.
9.3	To reduce roadway departure related crashes in the curves, treatments like increasing clear zone in curve, slope flattening, adding or widening shoulders and putting cable, concrete or beam guardrail can be a low cost but effective option.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Long term solution of traffic safety.	Medium, Long.

STRATEGY 10: IMPROVEMENT OF SIGNALIZED AND NON-SIGNALIZED INTERSECTION CONTROL SYSTEM.

#	Description	Action Lead	Output Measure	Timeline
10.1	Development of studies to identify vulnerable segments and intersection where absence of appropriate traffic signalization system is major reason for crashes and develop suggestions for appropriate signaling systems.	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Installation of traffic control signals on appropriate intersections.	Medium, Long.
10.2	Low cost solutions- On through approach <ul style="list-style-type: none"> Doubled up (Left and Right) installation of oversized advance intersection warning signs with street name sign plaques. Enhanced pavement markings that delineate through lane edge lines. 	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Improve traffic control system.	Ongoing, Short.
10.3	Low cost Solution – stop approach <ul style="list-style-type: none"> Doubled up (Left & Right) oversized advance “Stop Ahead” intersection warning signs. Doubled up (Left & Right) oversized stop signs. Retroreflective backplates with sheets on stop sign and other sign posts. Removal of any vegetation, parking or obstruction that limits sight distance. Oversized, retroreflective Double arrow warning sign at Stem of “T-Intersection” 	ODOT, WVDOH, County engineer's office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Improve traffic control system.	Ongoing, Short.

STRATEGY 11: CREATING AWARENESS ON SAFE DRIVING PRACTICES AMONG MASS POPULATION.

#	Description	Action Lead	Output Measure	Timeline
11.1	Developing a strong, coherent social norm approach movement by social medias, community meetings and other media of mass communications like newspaper, Billboard. Ex- “Most of us wear seatbelt” By Montana Department of Transportation.	ODOT, WVDOH, BHJ MPC.	Encouraging people on safe, defensive driving practice.	Short, Medium.
11.2	Different Traffic Calming measures like speed humps, speed cushions, speed feedback table with unmanned parked police vehicle can be installed in high speed violation prone segments of roads.	ODOT, WVDOH, County engineer’s office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	Low cost safety solution for aggressive driving and speeding.	Short, Medium.
11.3	Long term traffic calming measures like Road diet, Rumble strips, Bottleneck choker alignment, raised median or pedestrian refuge, roundabout, Chicane can be introduced to appropriate locations selected from study.	ODOT, WVDOH, County engineer’s office, District 11 ODOT, District 6 WVDOH, BHJ MPC.	High cost but effective traffic calming measures.	Medium, Long.

**SECTION 4 – PUBLIC OPINION SURVEY
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BACKGROUND

Brooke Hancock Jefferson Metropolitan Planning Commission (BHJ) is currently updating its Long-Range Transportation Plan 2045. As a first step, BHJ conducted a public opinion survey that covered a broad spectrum ranging from transportation safety, sustainability, and economic development, transportation to people's perception of emerging technologies, internet access, and physical environment. The main goal of this survey is to develop a vision of the future metropolitan transportation system and create a list of priorities as perceived by the general populous. For this, the questionnaire used a priority scale and multiple choice-based approach. The survey also encouraged additional comments to get feedback on the topics not covered in the questionnaire to better understand community needs.

POLICY PROCEDURES

Public Participation Plan

The Public Participation Plan outlines strategies and techniques to engage local constituency. The plan not only provides a format to provide information, but also receive comment from the public regarding transportation planning and programming activities.

<u>Activity</u>	<u>Technique</u>
Draft or Revised Document	<ul style="list-style-type: none">• Make available at the BHJ Offices and World Wide Web site at www.bhjmpc.org
Comment Collection Process	BHJ will follow a 3-tier process and the extent will depend on the requirements of the projects. Tier 1 – BHJ technical advisory committee, Executive Committee and Transportation Study Policy Committee. Tier 2- Online Platform through BHJ webpage www.bhjmpc.org , social networking platform @Facebook and Public Notice in the Newspaper. Tier 3 - Public meetings, physical presence in libraries and different public gathering occasions.
Comment Opportunity	<ul style="list-style-type: none">• Written comments accepted by way of e-mail, fax, online @Facebook page, webpage or mail; Transportation Study Policy and Technical Advisory Committee meetings.
Public Meeting	<ul style="list-style-type: none">• Held concurrent with Transportation Study Policy meetings.
Public Notification	<ul style="list-style-type: none">• Publish a Public Notice in no less than the two (2) local newspapers at least one (1) week before the public comment period is scheduled to begin, and then republished approximately every two (2) weeks thereafter.• Post Public Notice at www.bhjmpc.org• Alert constituency by e-mail announcement.• Added techniques may include any of the following: announcement posters/letters, infographics, press release, newsletter

<u>Activity</u>	<u>Technique</u>
	article/announcement, or public service announcement in social network pages.
Public Comment Period	<ul style="list-style-type: none"> • No less than forty-five (45) days before adoption or revision.
Summary of Comments Received	<ul style="list-style-type: none"> • Make available a summary of written comments prior to adoption by the Transportation Study Policy. • All written comments and responses summarized and incorporated into adopted document.
Final, Adopted Document	<ul style="list-style-type: none"> • Accessible in electronic format at www.bhjmpc.org • Upon completion of final document, available at BHJMPc office.
Evaluation Techniques	<ul style="list-style-type: none"> • Update e-mail notification list quarterly. • Survey number and source of comments received. • Review coverage or exposure from various media sources. • Establish a committee comprised of various media representatives.

Long Range Transportation Plan

The LRTP is both a long-range (no less than 20 years) and short-range listing of multimodal strategies, actions, and/or projects that facilitates the efficient movement of people and goods. The SAFETEA-LU requires an MPO to review and update its LRTP every four (4) years to confirm its validity, consistency with current and forecasted transportation and land use conditions and trends and conform to applicable air quality standards. This includes a financial plan that reasonably demonstrates how each project or program is constructed or implemented over the lifetime of the LRTP. Therefore, the LRTP should not contain any “wish list” projects. The MPO may amend its LRTP as a result updated investment strategy in projected federal, state, and local funding sources; completion of pertinent transportation studies; or changes in relevant federal, state or local laws.

The purpose of the LRTP is to guide regional long-range transportation goals and objectives for orderly social and economic growth and identify adequate resources to accomplish the needs. In the past, the LRTP metropolitan planning process required a public involvement period for consultation and cooperation with not only local planners, engineers, and public officials, but also interested citizens and civic organizations. The public involvement period should allow opportunity for all citizens and groups to provide input and subsequent comments into the development of the LRTP. The SAFETEA-LU legislation expanded the consultation and cooperation requirement to include non-metropolitan local officials and Tribal governments, as well as other local and state land-use management, natural resource, and historic planning agencies. In this way, all affected agencies including the MPO can compare the LRTP with available conservation plans and maps including available inventories of historic and natural resources.

<u>Activity</u>	<u>Technique</u>
Draft Document	<ul style="list-style-type: none"> Make available at the BHJ Offices and World Wide Web site at www.bhjmpc.org
Comment Opportunity	<p>BHJ will follow a 3-tier process and the extent will depend on the requirements of the projects. BHJ will also develop a semi structured concise questionnaire with different priority scales and multiple-choice answer-based approach.</p> <p>Tier 1 – BHJ technical advisory committee, Executive Committee and Transportation Study Policy Committee.</p> <p>Tier 2- Online Platform through BHJ webpage www.bhjmpc.org , social networking platform @Facebook and Public Notice in the Newspaper.</p> <p>Tier 3 - Public meetings, physical presence in libraries and different public gathering occasions.</p>
Public Meeting	<ul style="list-style-type: none"> Public meeting for draft and final document as well as amendments are held concurrent with the Transportation Study Policy meeting at the end of the public comment period. Visualization techniques for public meetings may include maps, aerial photography, pictures, or simplified plans depicting a program of projects or a specific project of regional interest.
Public Notification	<ul style="list-style-type: none"> Publish a Public Notice in no less than the two (2) local newspapers at least twice, once at the beginning of the public comment period and then republished approximately one (1) week thereafter. Post Public Notice at www.bhjmpc.org Alert constituency by e-mail announcement. Though BHJ Social Network @Facebook page. Consult with local and state land-use management, natural resource, and historic planning agencies by direct mailing of draft and final documents or by e-mail notification of documents available in electronic format for download or e-mail attachment. Added techniques may include any of the following: announcement posters/letters, infographics, press release, newsletter article/announcement, or public service announcement.
Public Comment Period	<ul style="list-style-type: none"> No less than fifteen (15) days before adoption or revision.
Summary of Comments Received	<ul style="list-style-type: none"> Make available a summary of written comments prior to adoption by the Transportation Study Policy. Acknowledge receipt of written comments (If requested) only by no less than five (5) working days. All written comments and responses summarized and incorporated into adopted document.
Final, Adopted Document	<ul style="list-style-type: none"> Accessible in electronic format at www.bhjmpc.org Upon completion of final document, available upon request at BHJMPc office. Reproduced copies of final document are available at a standard fee no greater than the schedule found at CFR 49 CFR 7.43

<u>Activity</u>	<u>Technique</u>
Document Amendments	<ul style="list-style-type: none"> • Those requesting amendments are encouraged to submit amendments fifteen (15) days before the public comment period begins. • Public comment period begins fifteen days prior to scheduled Transportation Study Policy meetings. • Publish a schedule for revision notifications and submissions at the beginning of the calendar year concurrent with organization of the Transportation Study Policy Committee. • A special meeting to consider revisions may be considered in emergency circumstances.
Evaluation Techniques	<ul style="list-style-type: none"> • Update e-mail notification and planning agency consultation lists quarterly. • Survey number and source of comments received. • Review media coverage, social network notifications or exposure from various media sources. • Establish a committee comprised of various media representatives.

SURVEY

For public outreach, BHJ used a three-tier approach. First, staff collected surveys from the its Technical Advisory, Executive, and Transportation Study Policy. Second, staff collected data through the online platform Facebook, though sponsored advertisements and the official webpage. Third, to reach out to people who do not have direct household internet, BHJ distributed the surveys at seven (7) local libraries (Public Library of Steubenville & Jefferson County Main Library and the Schiappa, Brilliant, Tiltonsville, Toronto branch locations, Weirton Mary H. Weir Library, and Brooke County Public Library in Wellsburg) BHJ also distributed the survey at the October at Steubenville's "First Friday on Fourth", a monthly social gathering in historic downtown Steubenville. Overall, BHJ received 421 surveys, 98 with additional comments. **Appendix A- G** contain all the different initiative BHJ undertook to reach out to people of the community in the survey and comment period of the draft plan. BHJ received no comments after the draft report presentation to the public. As this plan took a extensive data driven, community collaborative strategy from the very beginning, it might be a reason behind that. It also reiterates the effectiveness of Bottom up planning approach in the transportation sector.

PRIORITY ISSUES

The top 5 priorities that this survey identified are –

- More transportation options for people with a focus on work and medical trips, as well as elderly persons and people with disabilities. Citizens desire expanded and improved public transportation service and app-based ride systems like Uber, Lyft. People also want expanded work-related carpool and vanpool services.
- Maintain the existing transportation infrastructures rather than building new.

- A holistic, coordinated approach to make local roads safer.
- Develop a livable, environment-friendly community with adequate recreational facilities.
- Focus more on sustainable, good-paying, environment-friendly community business development.

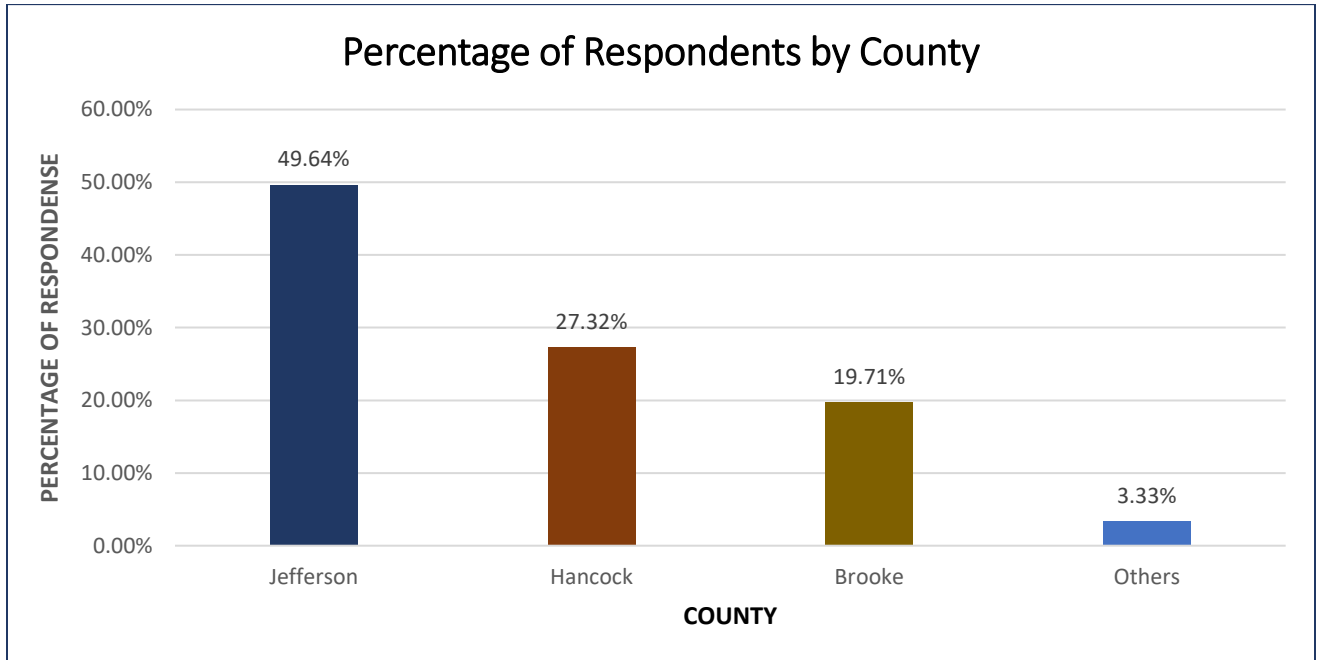
SUMMARY OBSERVATIONS FROM SURVEY

- The 50% response rate between Jefferson County, OH and Brooke-Hancock, WV counties. Age group 51-60 and 61-70 are the two leading respondent age groups. Jefferson respondents were somewhat younger, while the older respondents are uniform across all three counties.
- A total of 95% of respondents consider “Road Safety” a major transportation issue. The importance of safety resonates across all the age groups.
- Around 70% of the respondents consider "more transportation options" as an important priority. Younger respondents from the age group 18-22 and 23-30 are more concerned about this issue than their older counterparts.
- Over 50% of respondents identify “Maintenance of Existing Infrastructure” as an extremely important priority, while a total of 98% of the respondents consider it either extreme, very, or just important. Between building new infrastructures and maintaining the existing, 80% prefer maintenance. Older age groups from 51-70 are more concerned about the maintenance of the infrastructures than their younger counterparts.
- Around 82% of the respondents consider public transportation as a vital transportation priority for this locality. For sustainable regional growth, respondents chose public transportation over privately owned vehicles. They also want more rideshare and work trip-based vanpool and carpool opportunities. Two opposite spectrum of age group 18-22 and 61-70 consider public transportation “extremely important” while the age groups ranging 31- 60 want more rideshare, vanpool, and carpool options.
- Respondents also put importance on sidewalks, bikeways, and other active transportation facilities along with freight transportation improvement. Younger population groups between 18-30 consider active transportation a significant issue, while 51-70 age groups want to focus more on freight transportation.
- Though many of the respondents are not very familiar with brownfield developments, still 60% of the respondents indicate it is essential for the economic growth. Older age groups from 51-70 are more concern about this issue than the younger age groups.
- For regional economic growth, respondents indicate more business development and livable communities as the most important factors. Over 80% of respondents also consider low-cost, high-speed internet a vital factor. Younger respondents focus more on safety and recreation while the older respondents heavily emphasize more business development. The importance of high-speed internet resonates across all the age groups.
- An approximate 90% respondents are concerned about the community’s air and water quality and over 50% believe this region is not prepared for the negative impact of climate change. Younger respondents are more concern with environmental improvement and climate change than their older counterparts. Respondents over the age of 50 years are skeptical on the validity of the climate change phenomenon than the younger age groups.
- Respondents are skeptic of new emerging technologies like self-driving cars and their future to this community. Over 60% of the respondents do not envision a future with self-driving vehicles operating in this region. Younger respondents are more inclined to accept self-driving vehicle in the community than older respondents.

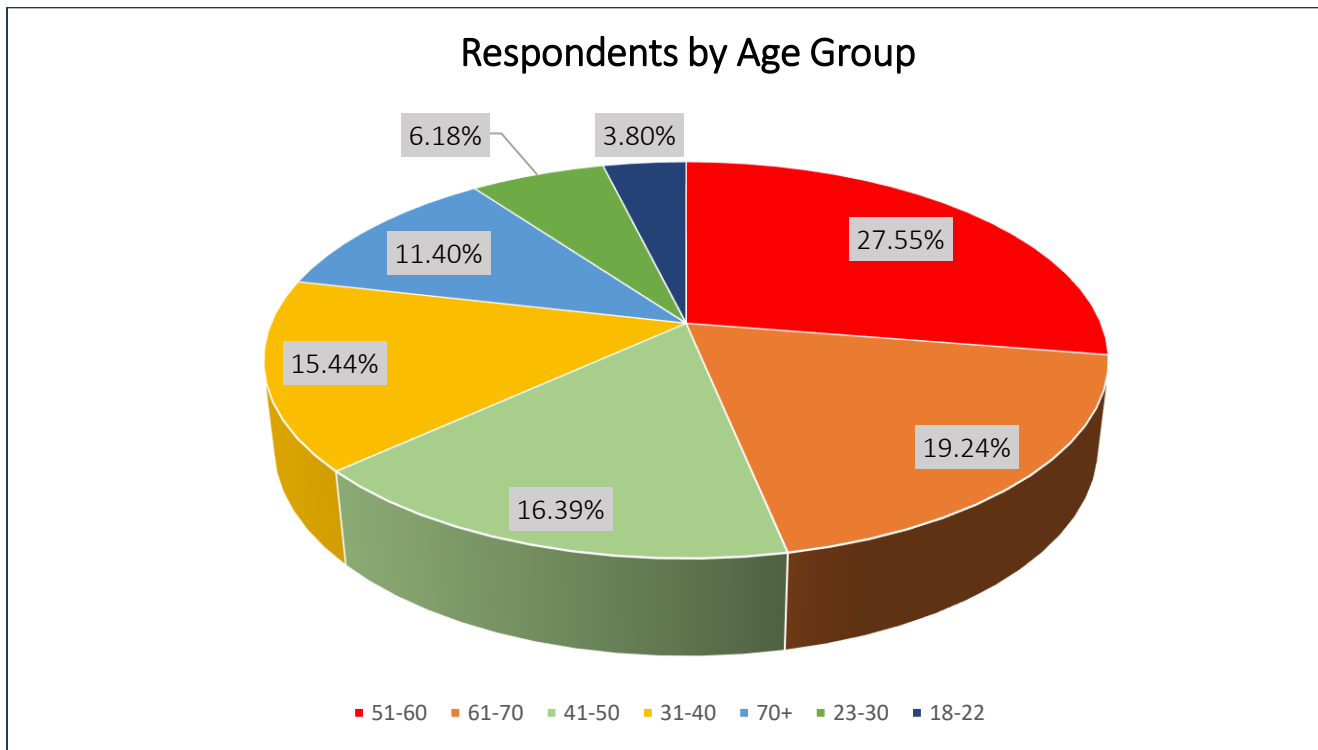
- Respondents have a divided opinion of the area's current economic situation. While 51% of the respondents agreed that the economy is moving in the right direction, the remaining 49% are skeptical of the long-term effectiveness of the current economic and business policies and approaches. Younger age groups of 18-30 are more skeptical than the older age group when it comes to the region's economic direction.

TOTAL SURVEY RESULTS

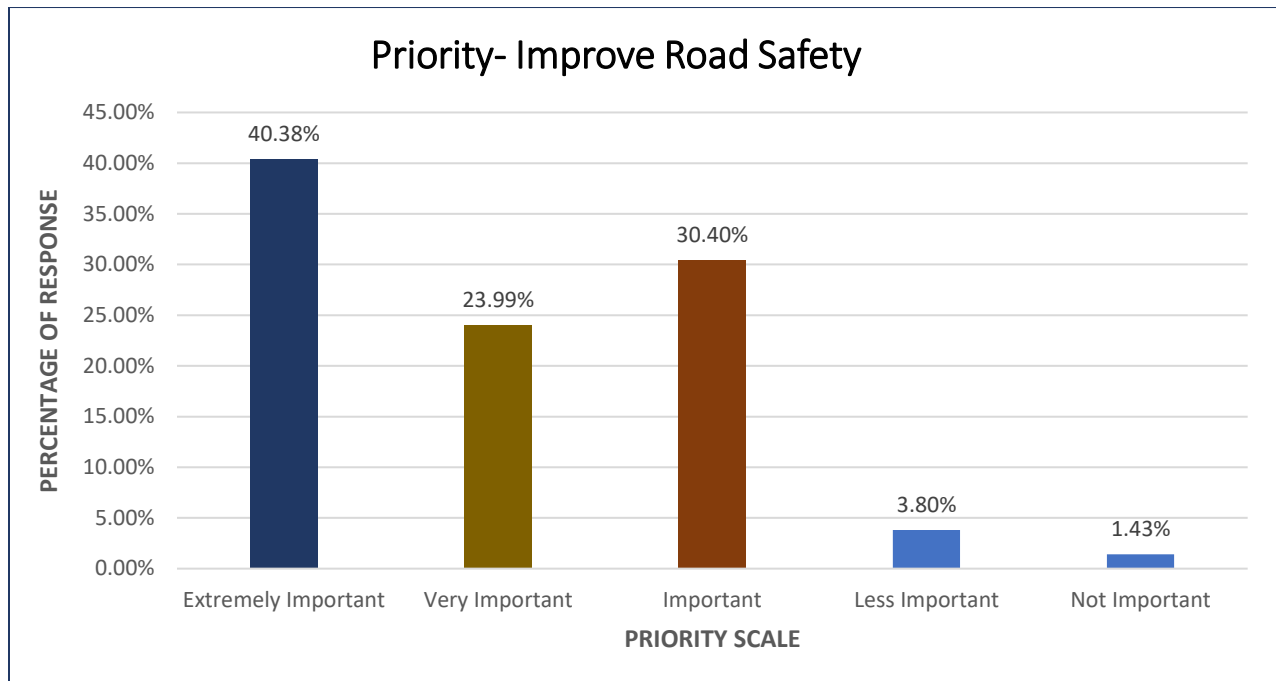
Question.1. In which county you live?



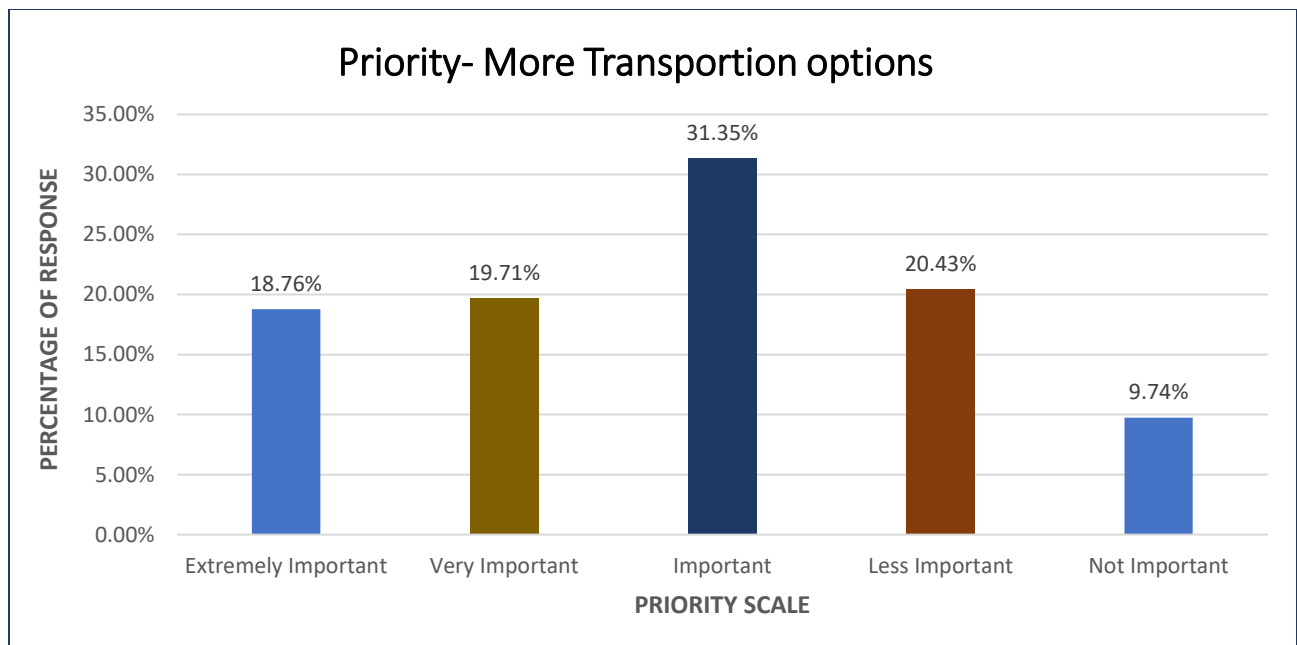
Question.2. What is your age group?



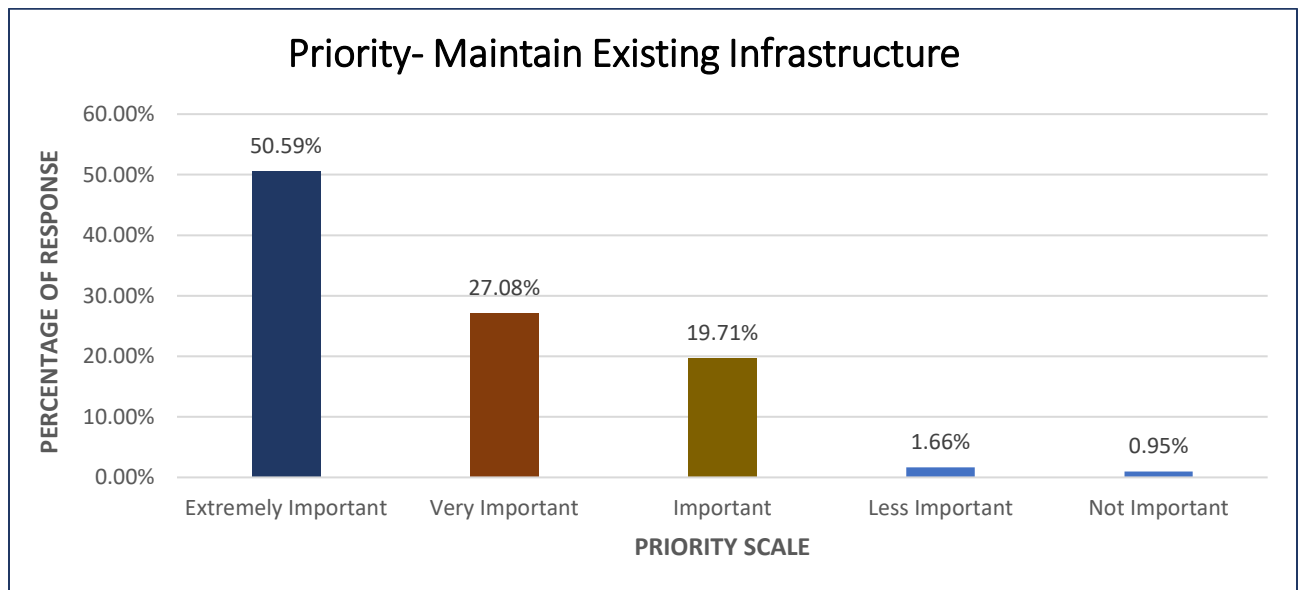
Question 3.1. Rank the following Transportation Priorities [Improve Roadway Safety]



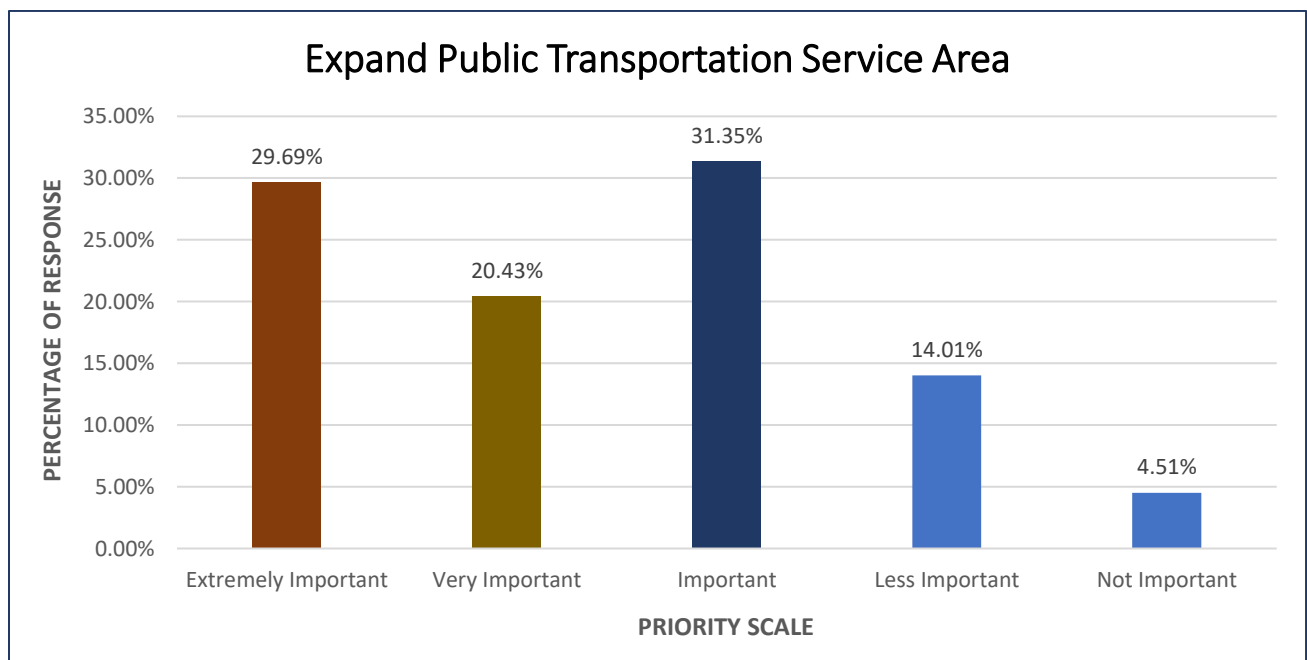
Question 3.2. Rank the following Transportation Priorities [More transportation choices such as Uber, Lyft, car pool, van pool, and taxi services].



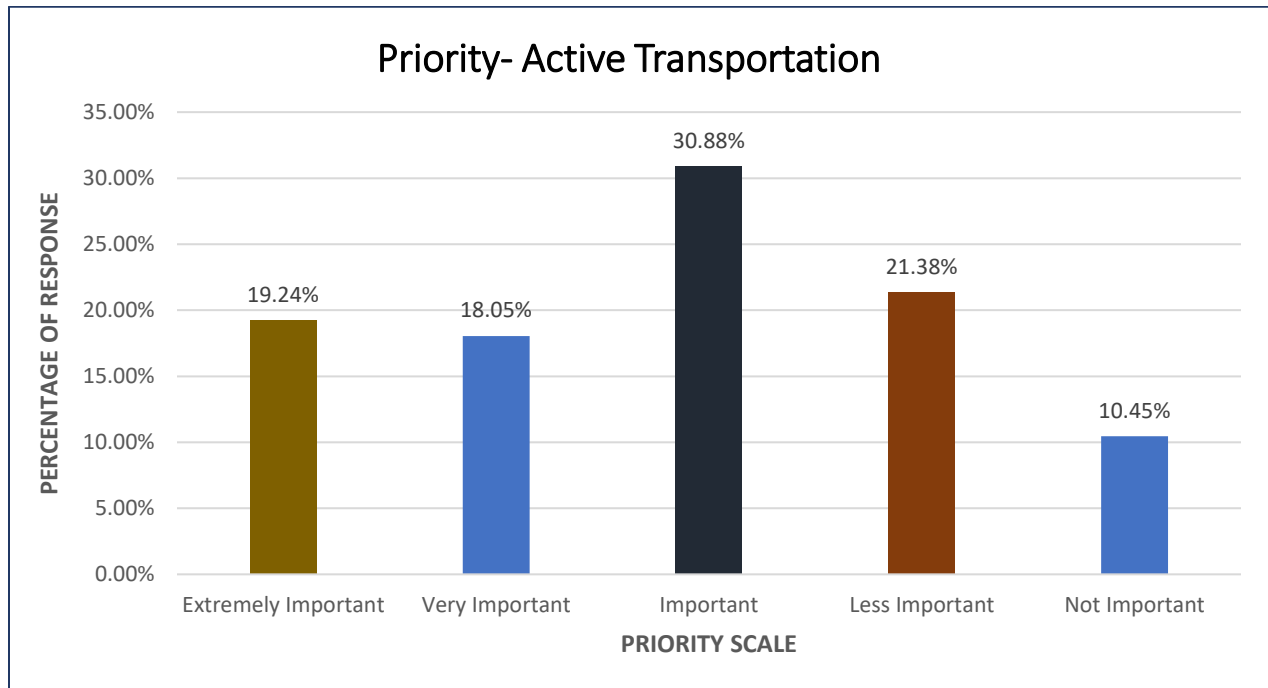
Question 3.3. Rank the following Transportation Priorities [Maintain existing infrastructure (roads, bridges, culverts etc.)]



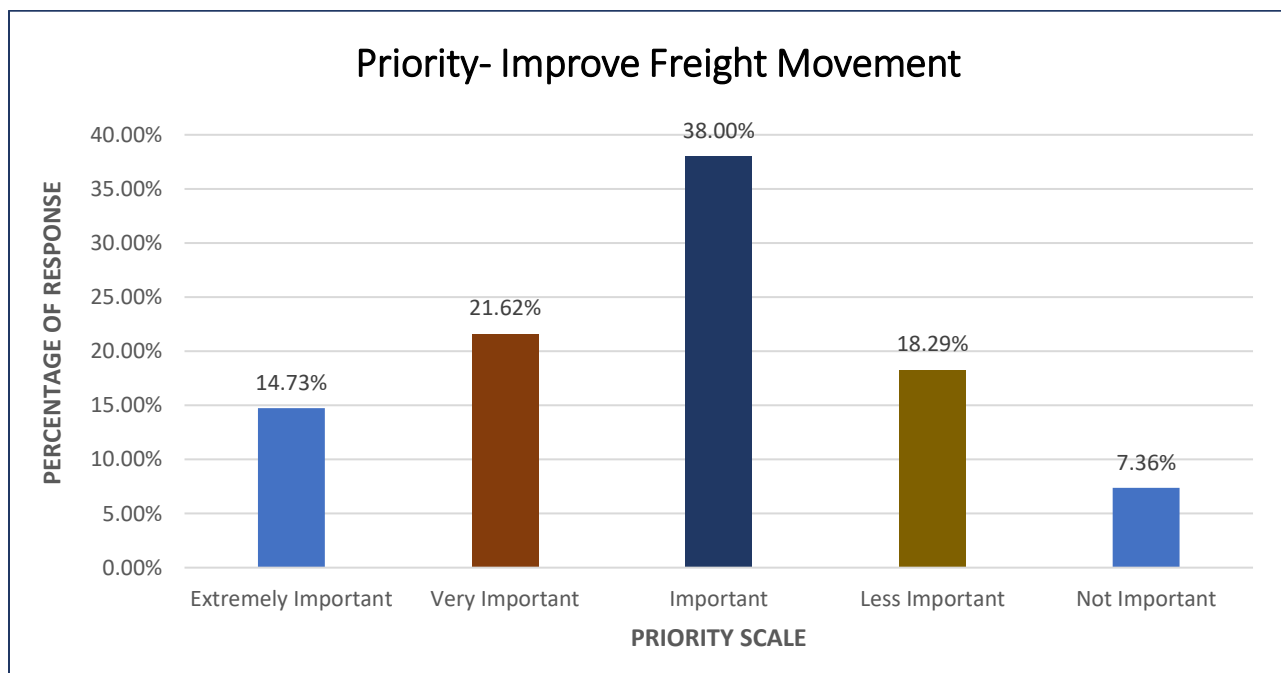
Question 3.4. Rank the following Transportation Priorities [Expand public transportation]



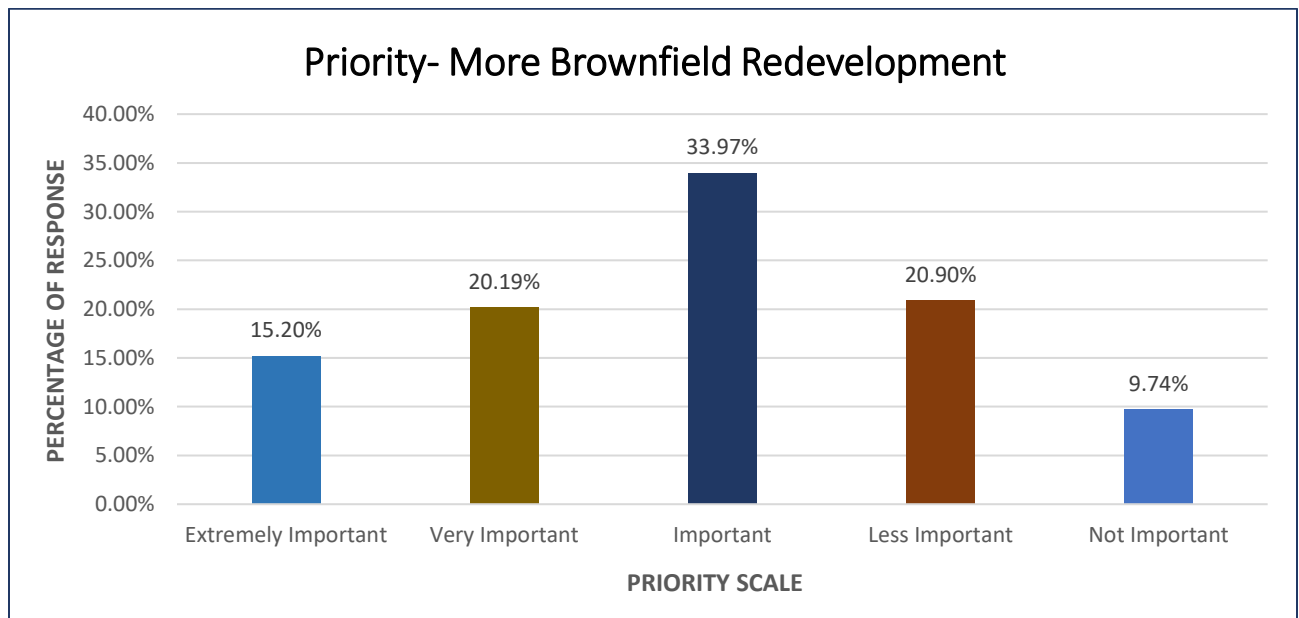
Question 3.5. Rank the following Transportation Priorities [Construct more trails, bike-ways, and pedestrian walkways]



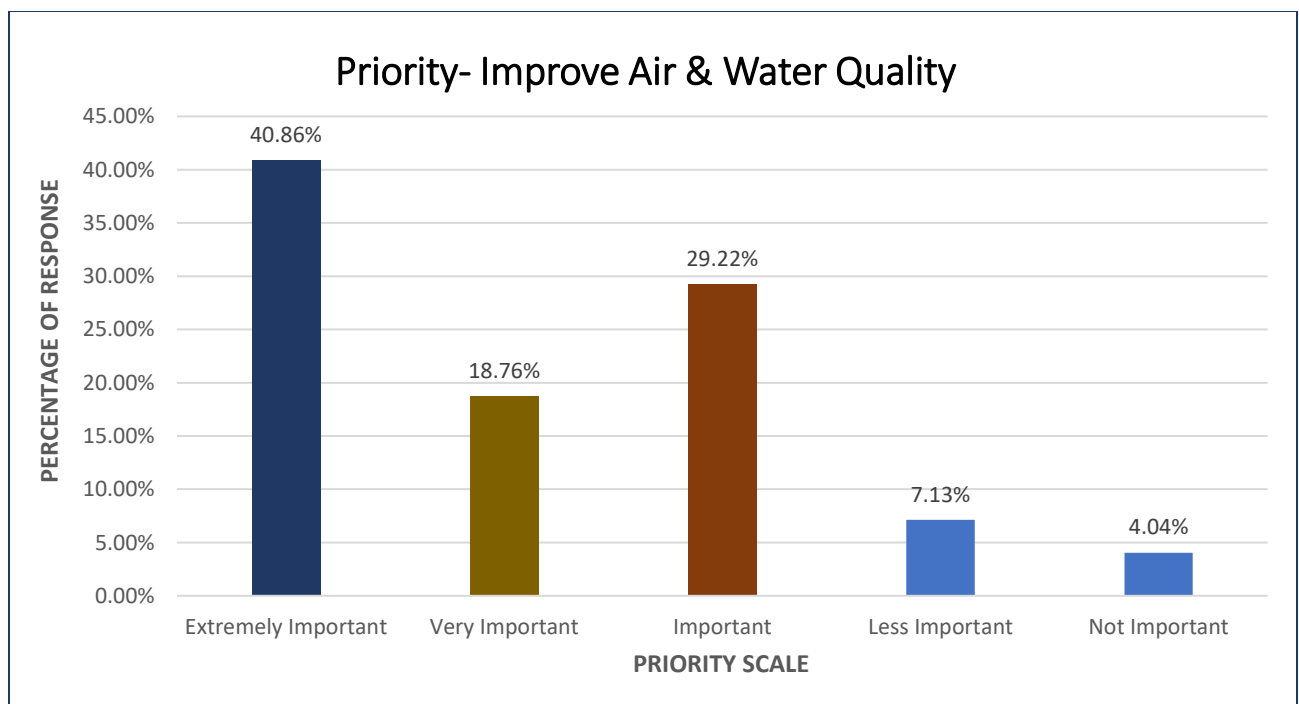
Question 3.6. Rank the following Transportation Priorities [Improved freight movement (railroads & river ports)]



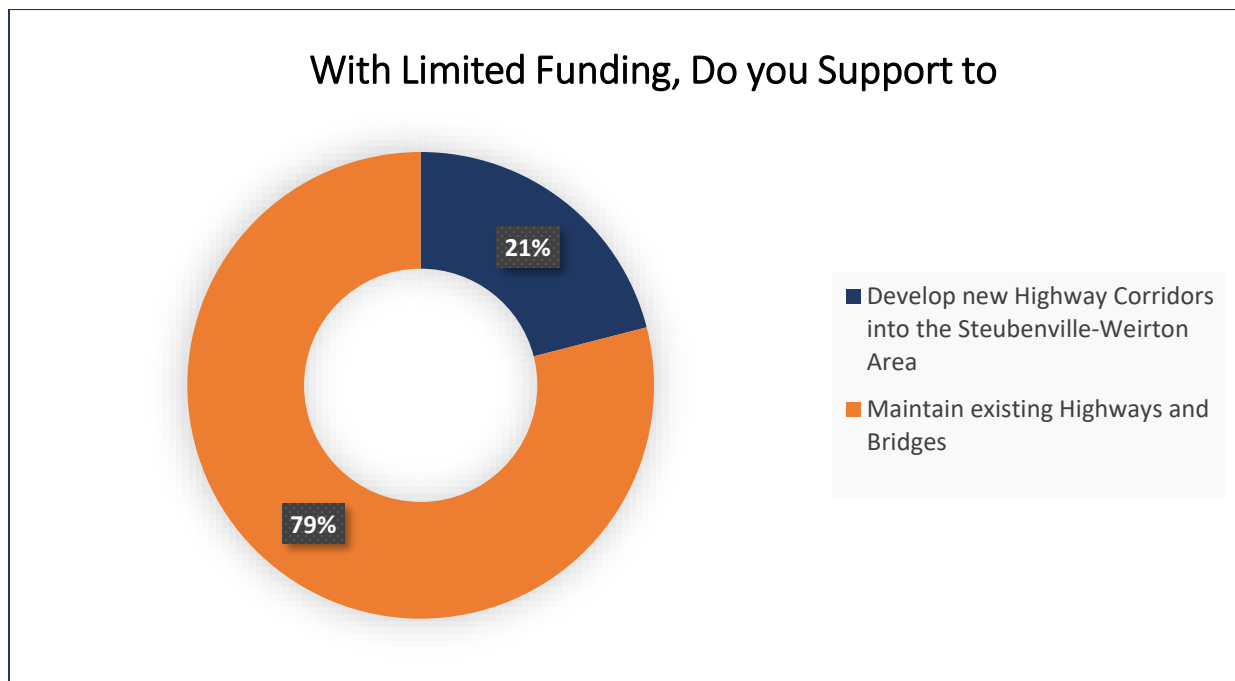
Question 3.7. Rank the following Transportation Priorities [More investment in brownfield re-development]



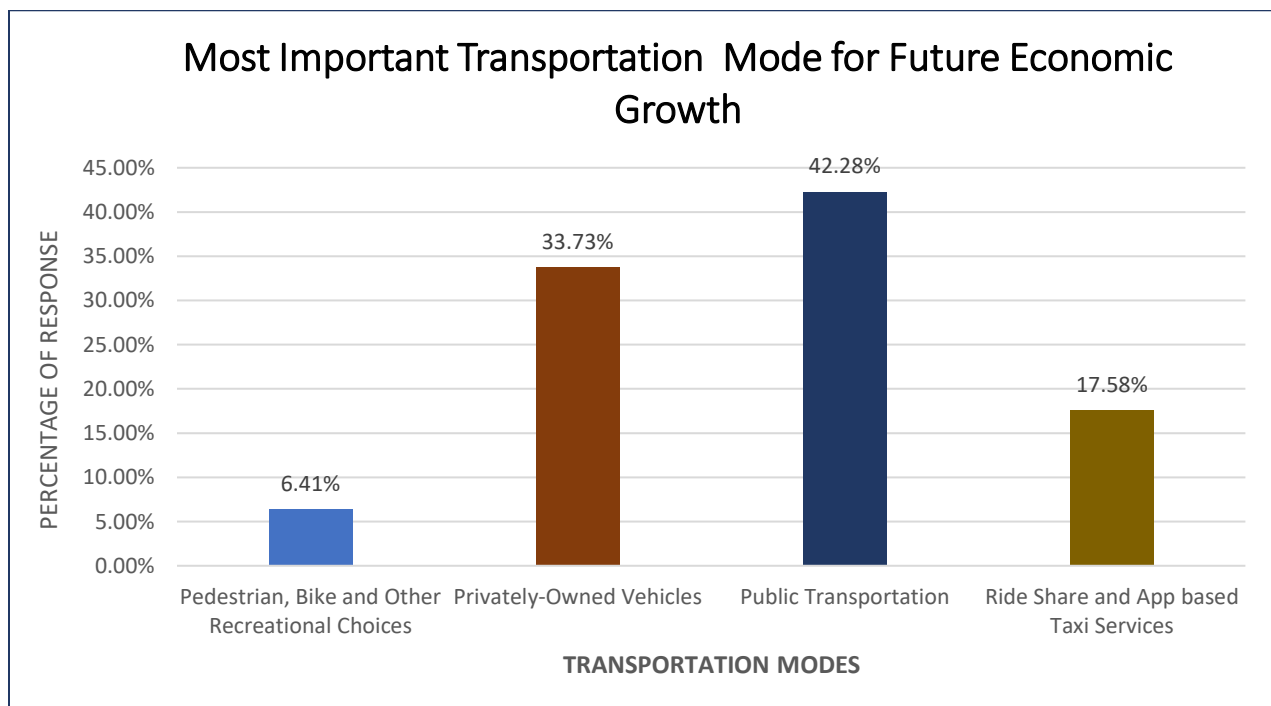
Question 3.8. Rank the following Transportation Priorities [Improve air and water quality]



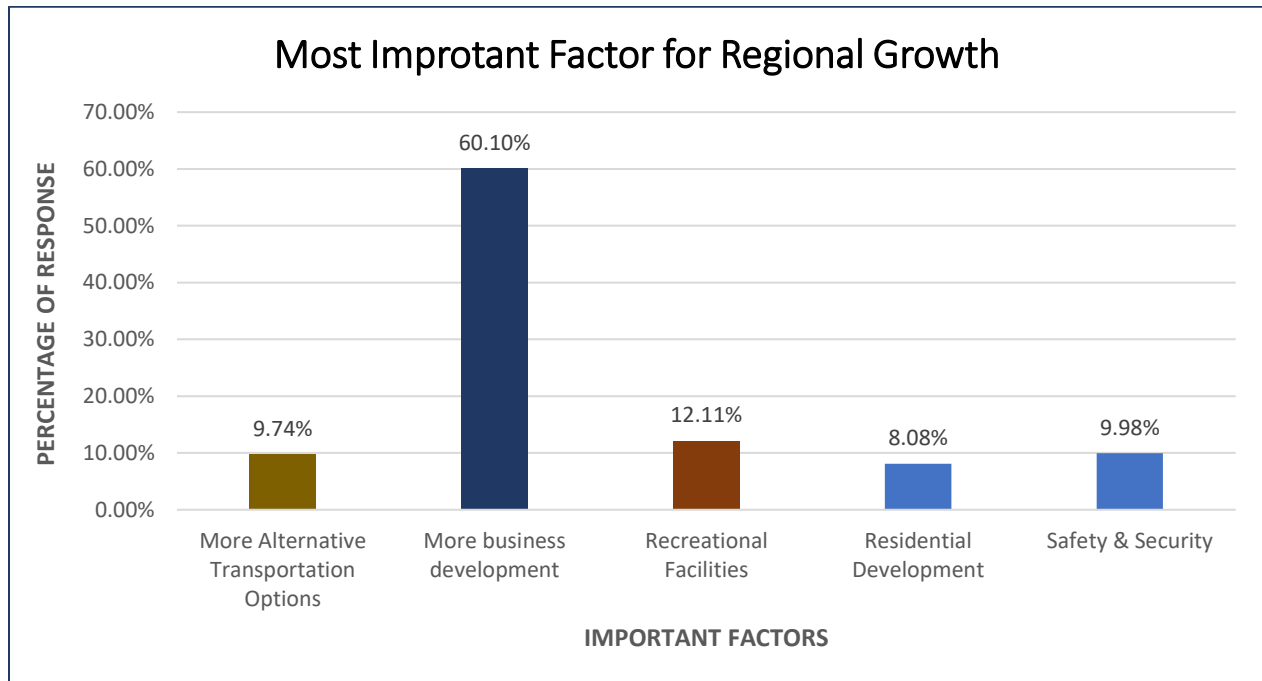
Question. 4. With limited transportation funds available, do you support investing the funding to:



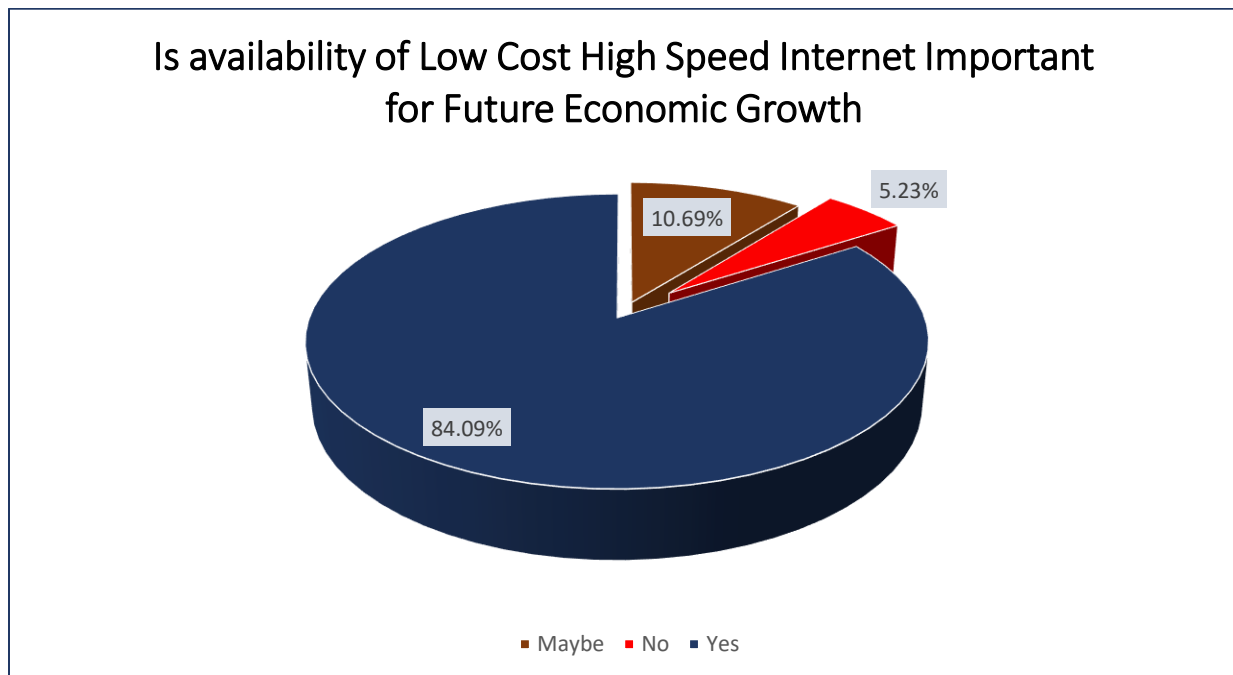
Question.5. Which transportation mode is important for sustainability and economic growth?



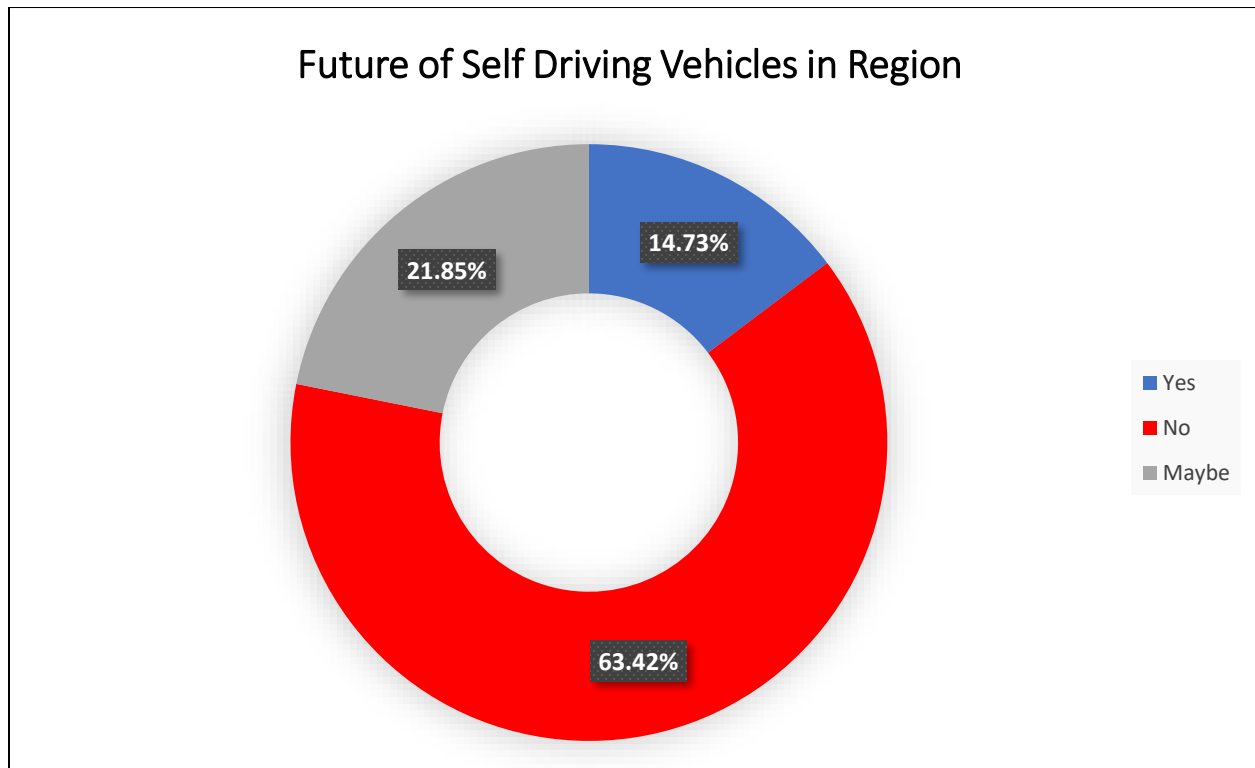
Question .6. In your opinion which factor is most important for our three-county (Brooke, Hancock, and Jefferson) area's future growth?



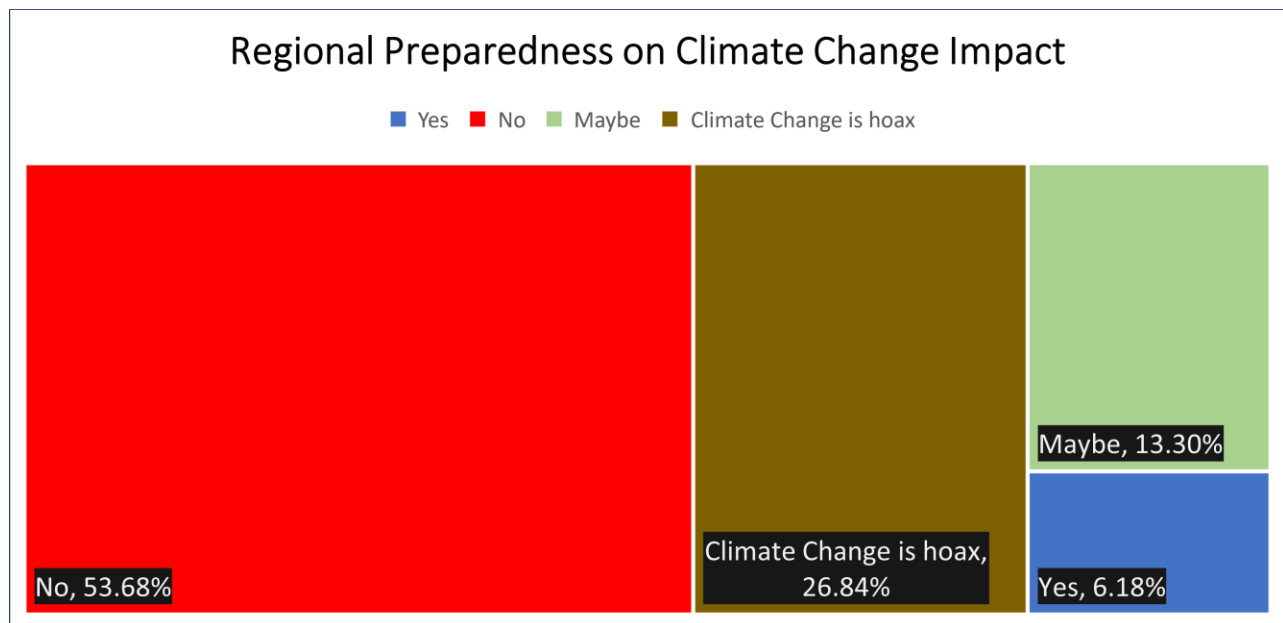
Question.7. In your opinion, "is the availability of low-cost high-speed internet important for our region's future economic growth?"



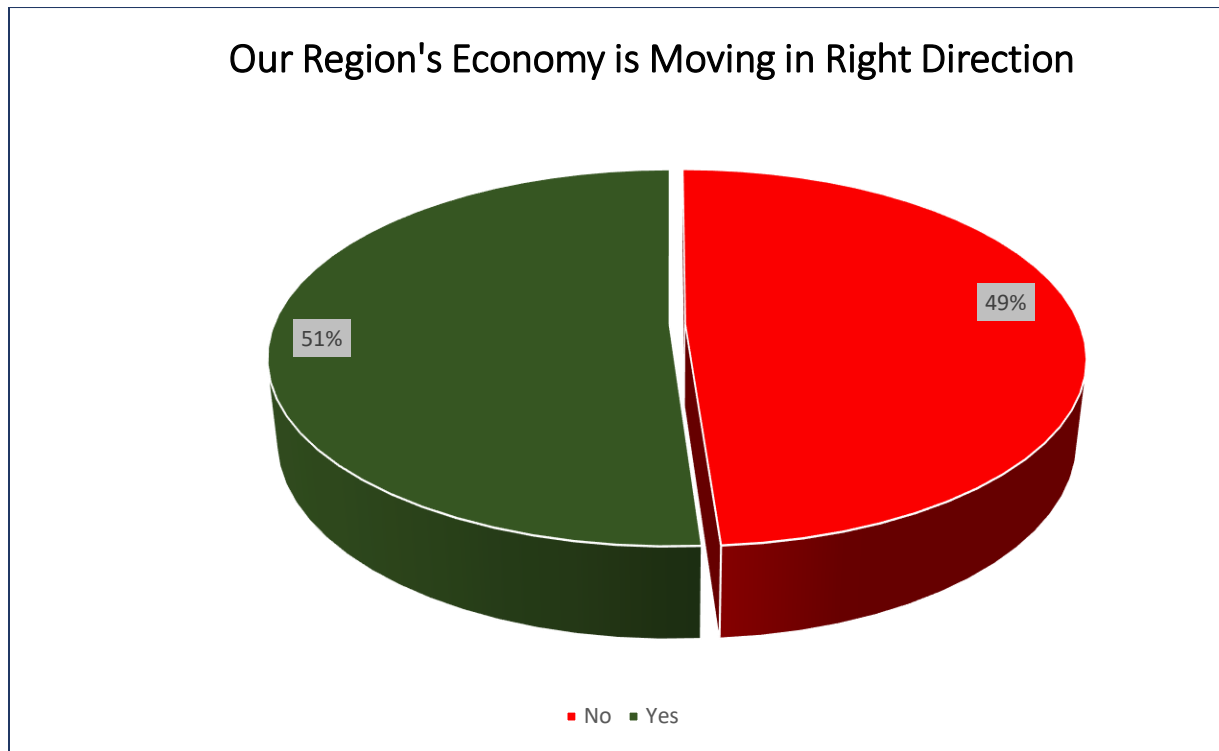
Question.8. Do you believe self-driving vehicles have a future in our three counties?



Question.9. Do you think the region is prepared for the adverse impacts of "Climate Change"?

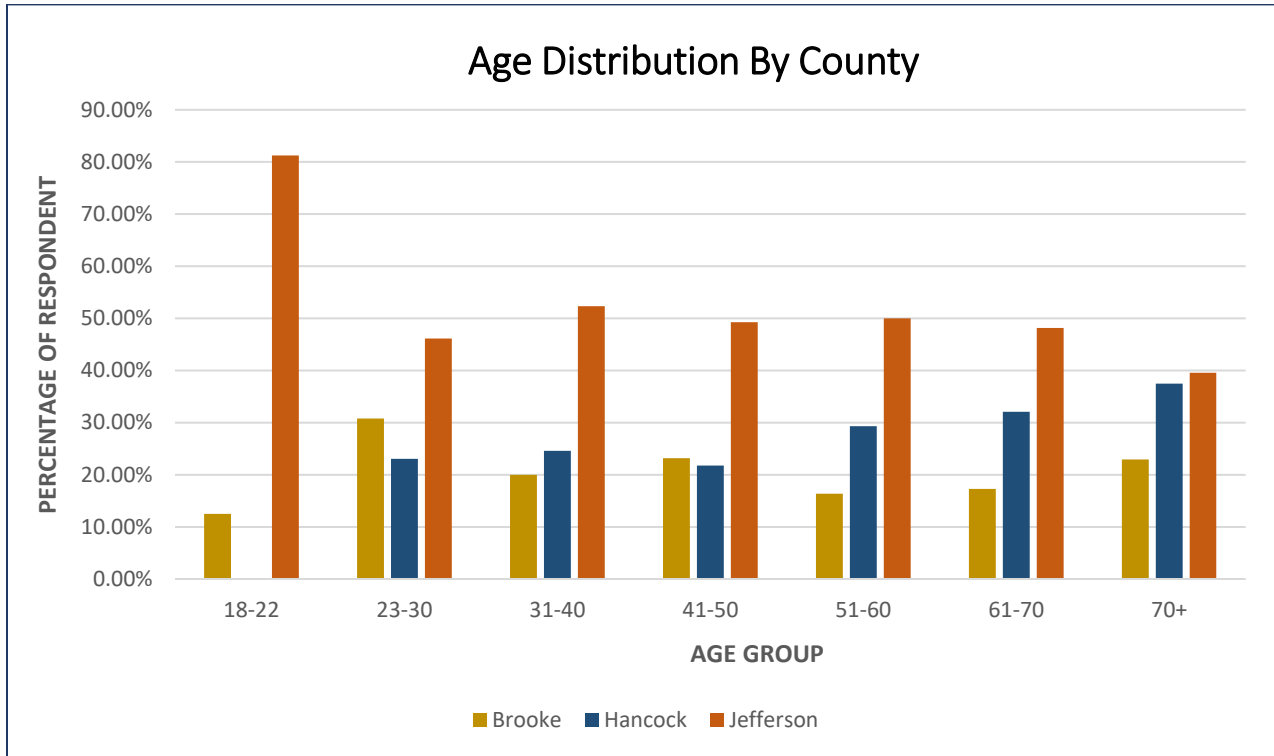


Question.10. Do you agree that "our region's economy is moving in the right direction?"

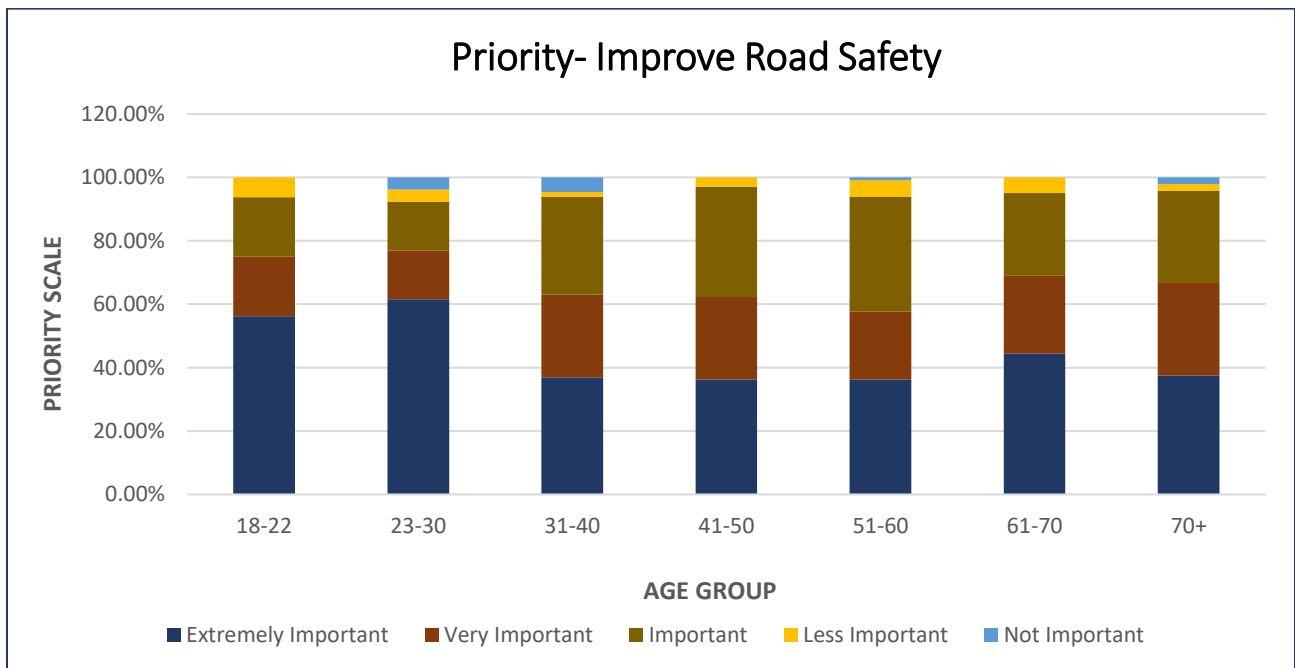


SURVEY FINDINGS BY DIFFERENT AGE GROUPS

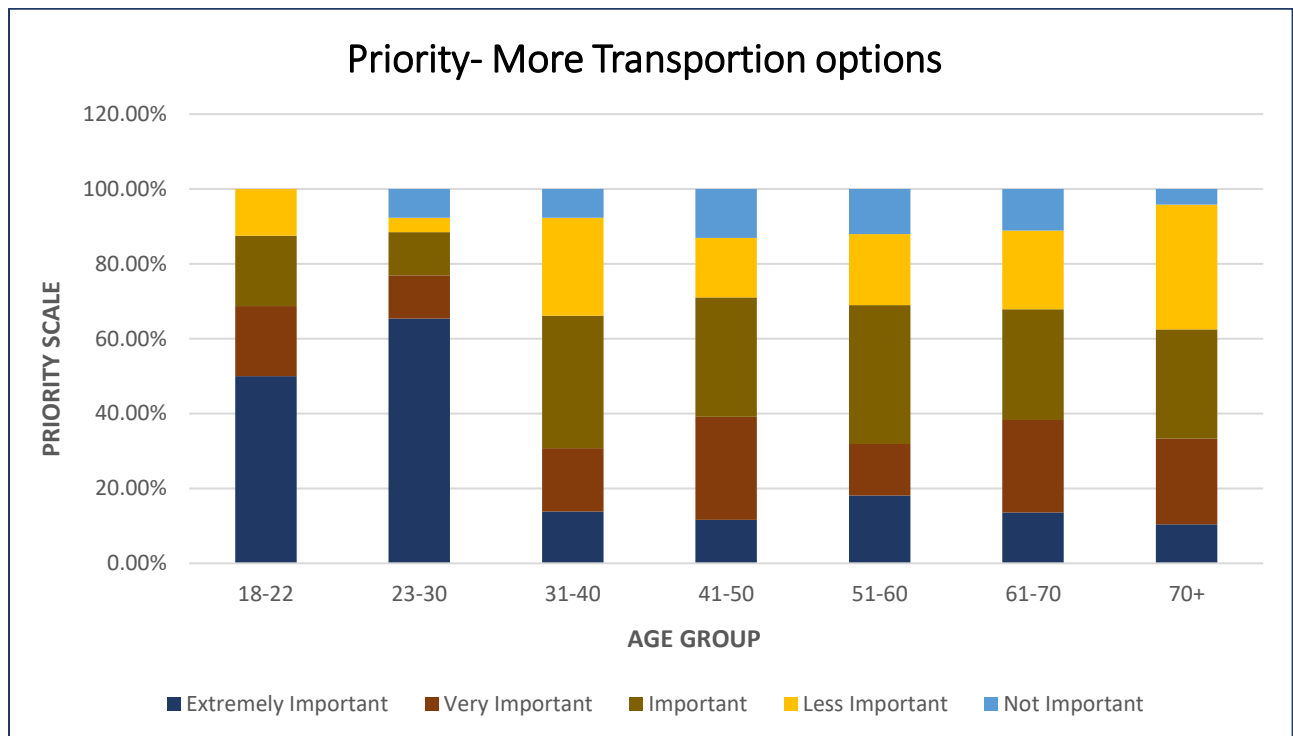
Question.1. In which county you live?



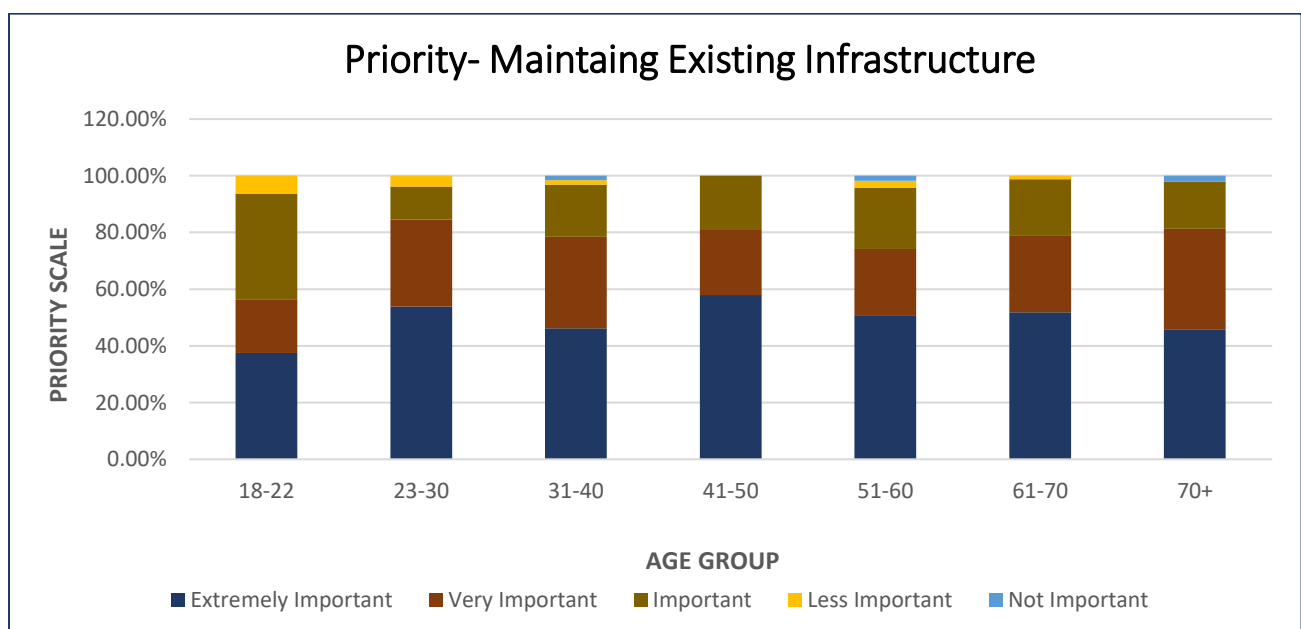
Question 3.1. Rank the following Transportation Priorities [Improve Roadway Safety]



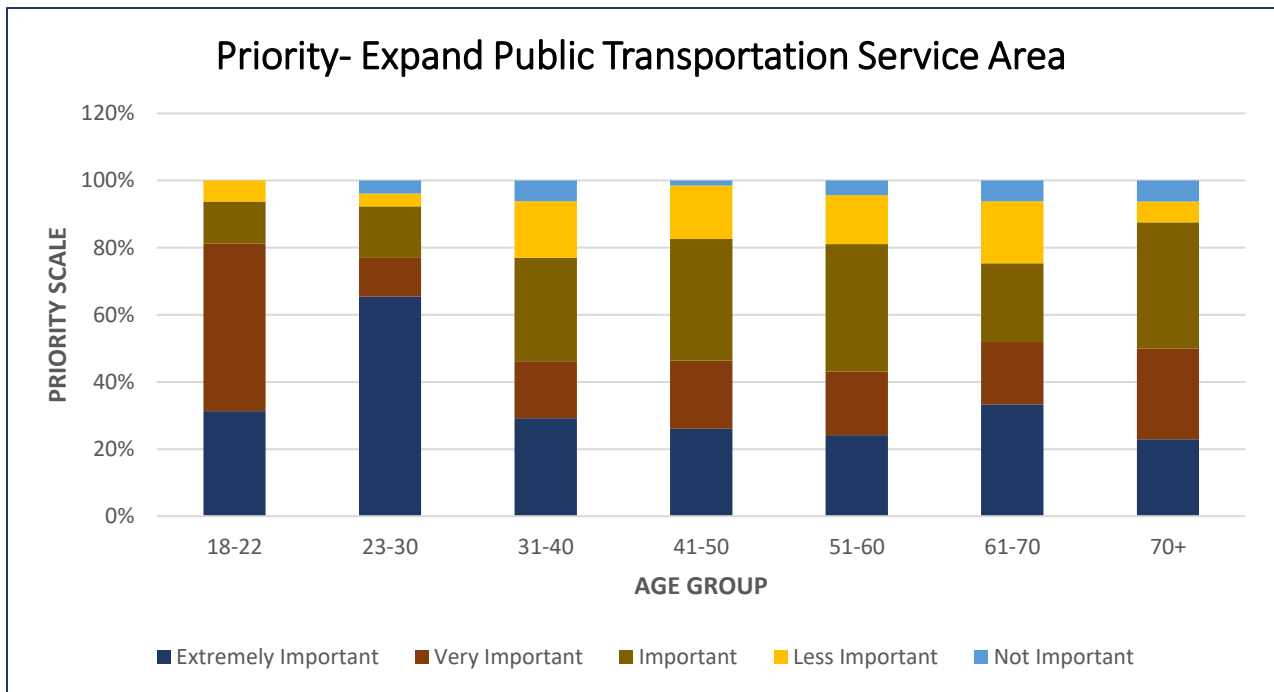
Question 3.2. Rank the following Transportation Priorities [More transportation choices such as Uber, Lyft, car pool, van pool, and taxi services].



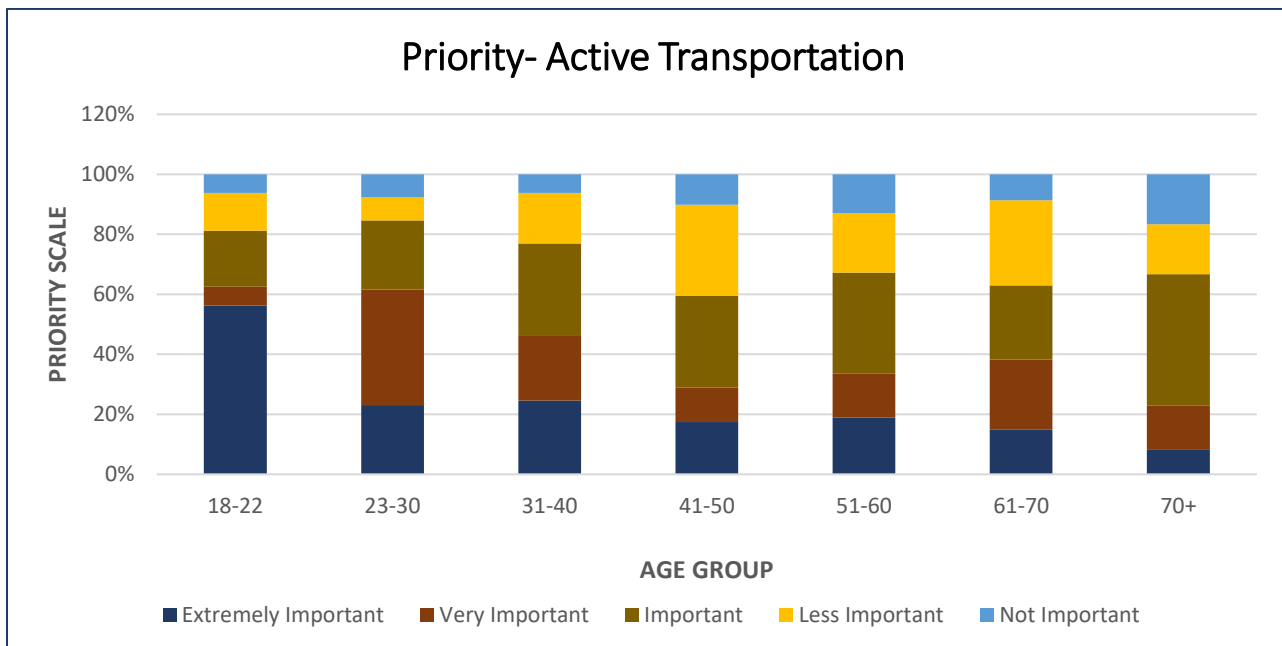
Question 3.3. Rank the following Transportation Priorities [Maintain existing infrastructure (roads, bridges, culverts etc.)]



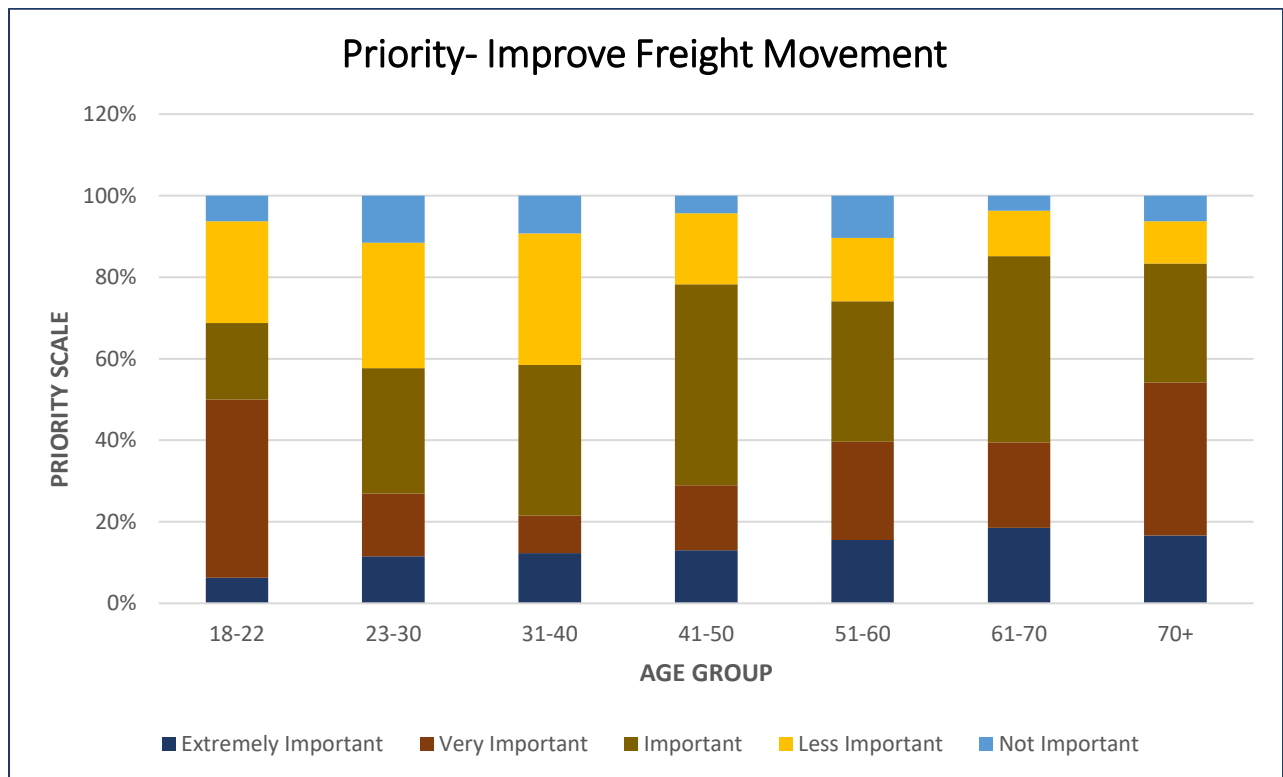
Question 3.4. Rank the following Transportation Priorities [Expand public transportation]



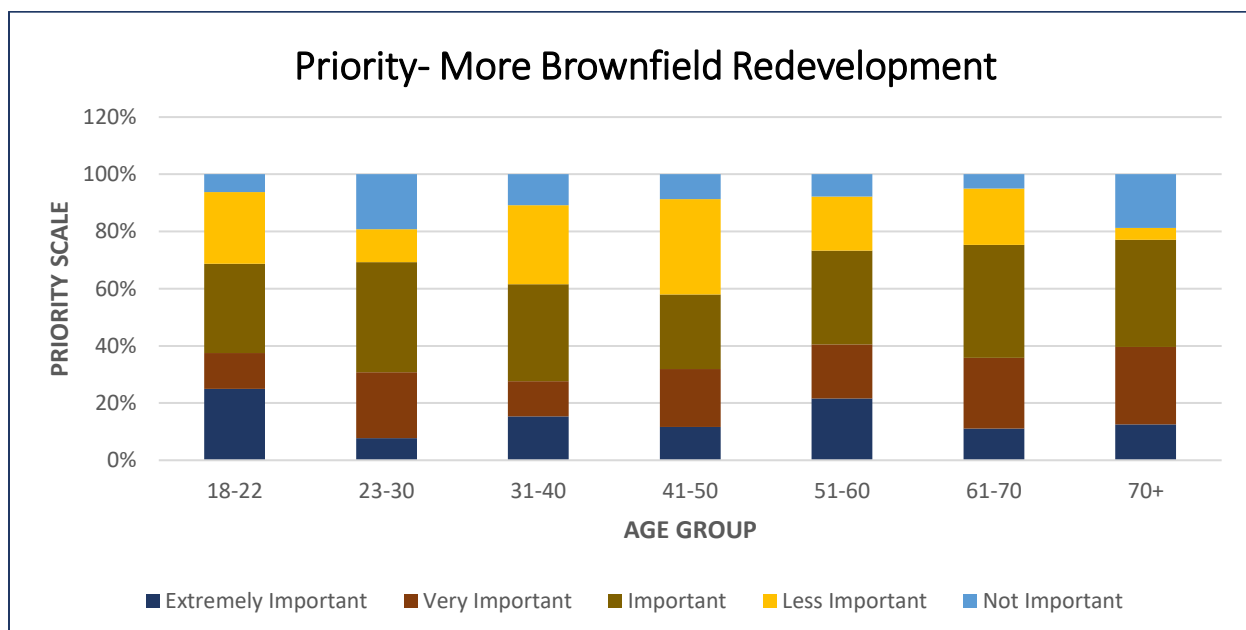
Question 3.5. Rank the following Transportation Priorities [Construct more trails, bike-ways, and pedestrian walkways]



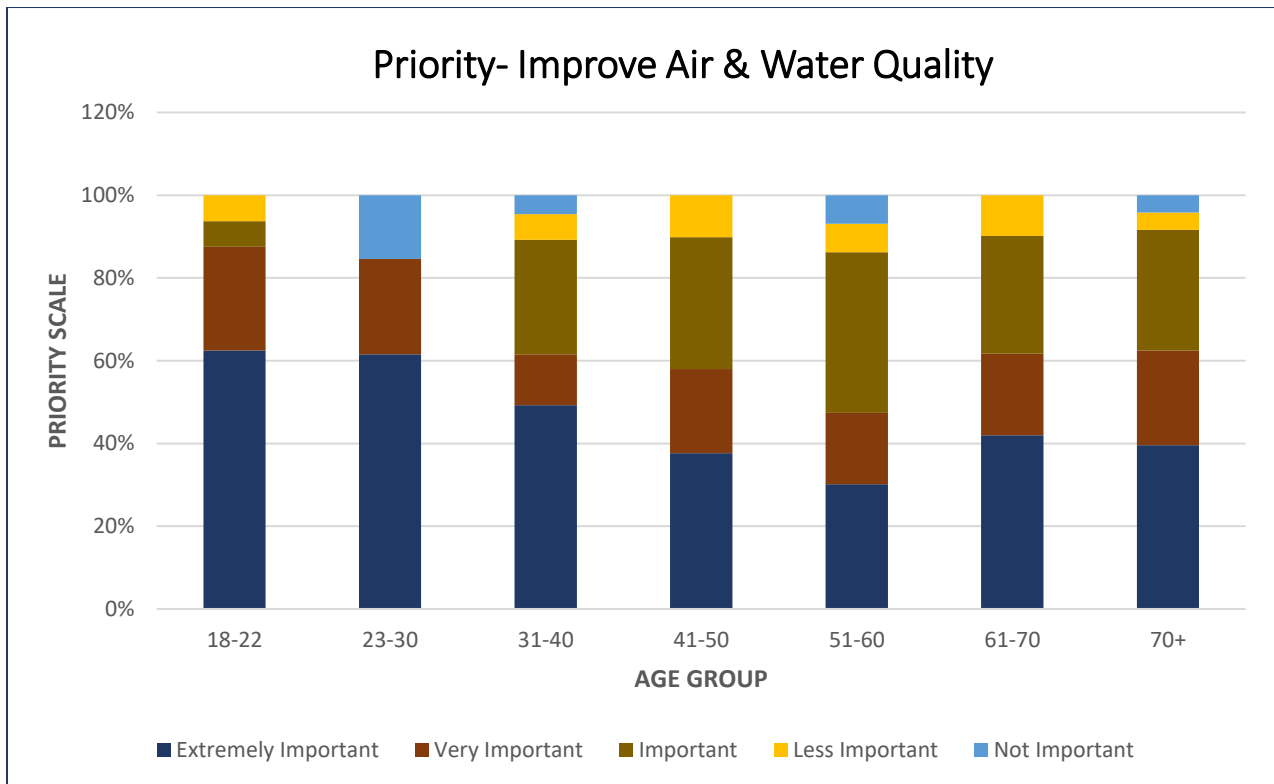
Question 3.6. Rank the following Transportation Priorities [Improved freight movement (railroads & river ports)]



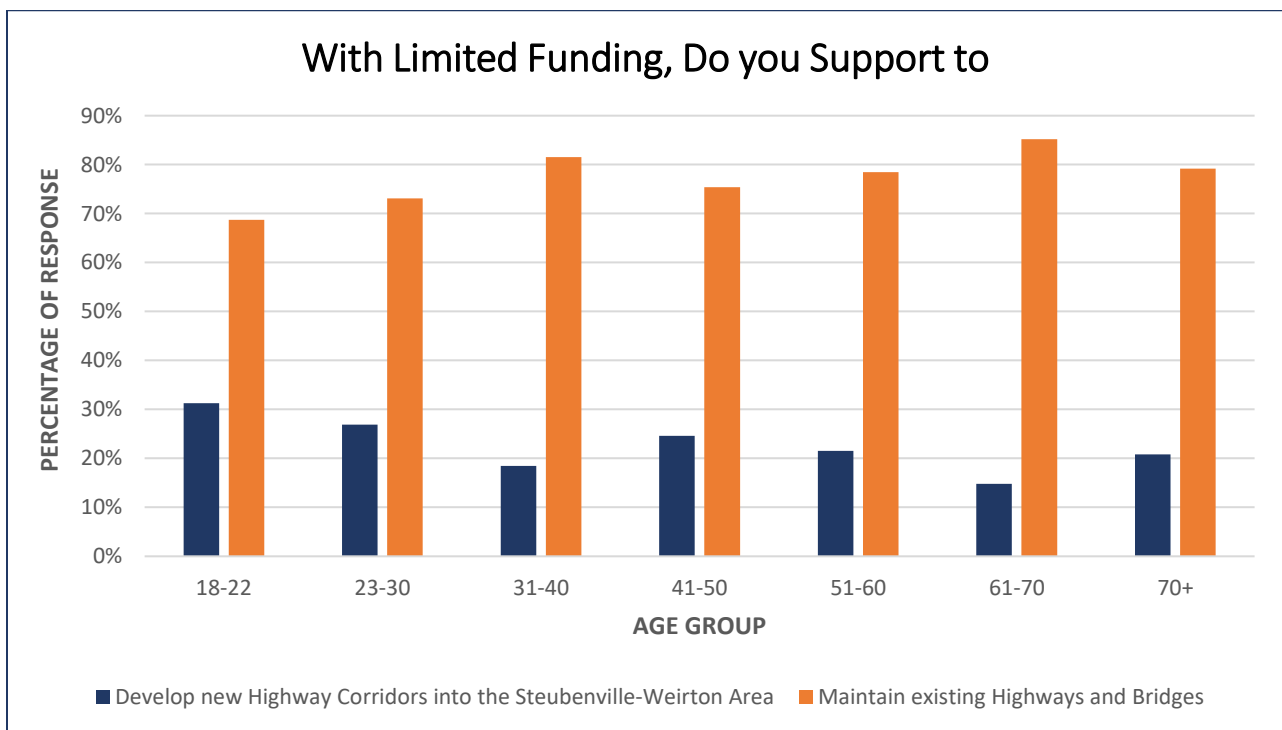
Question 3.7. Rank the following Transportation Priorities [More investment in brownfield re-development]



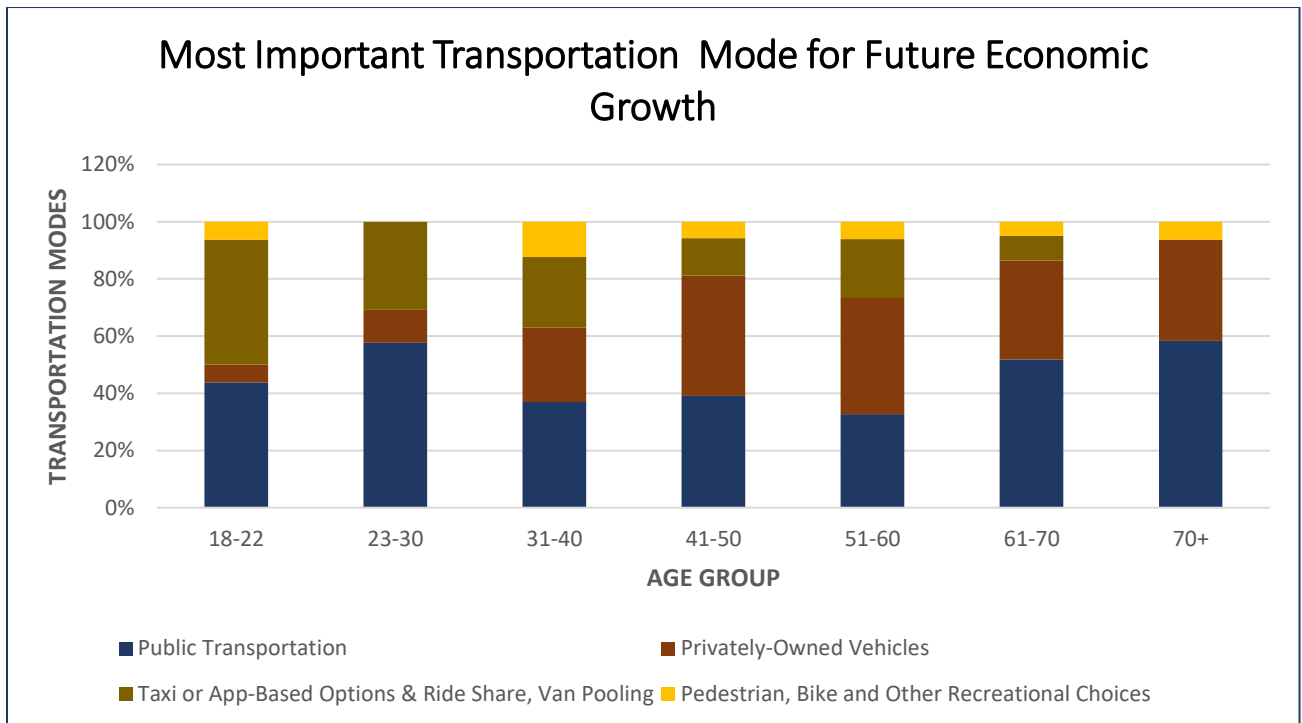
Question 3.8. Rank the following Transportation Priorities [Improve air and water quality]



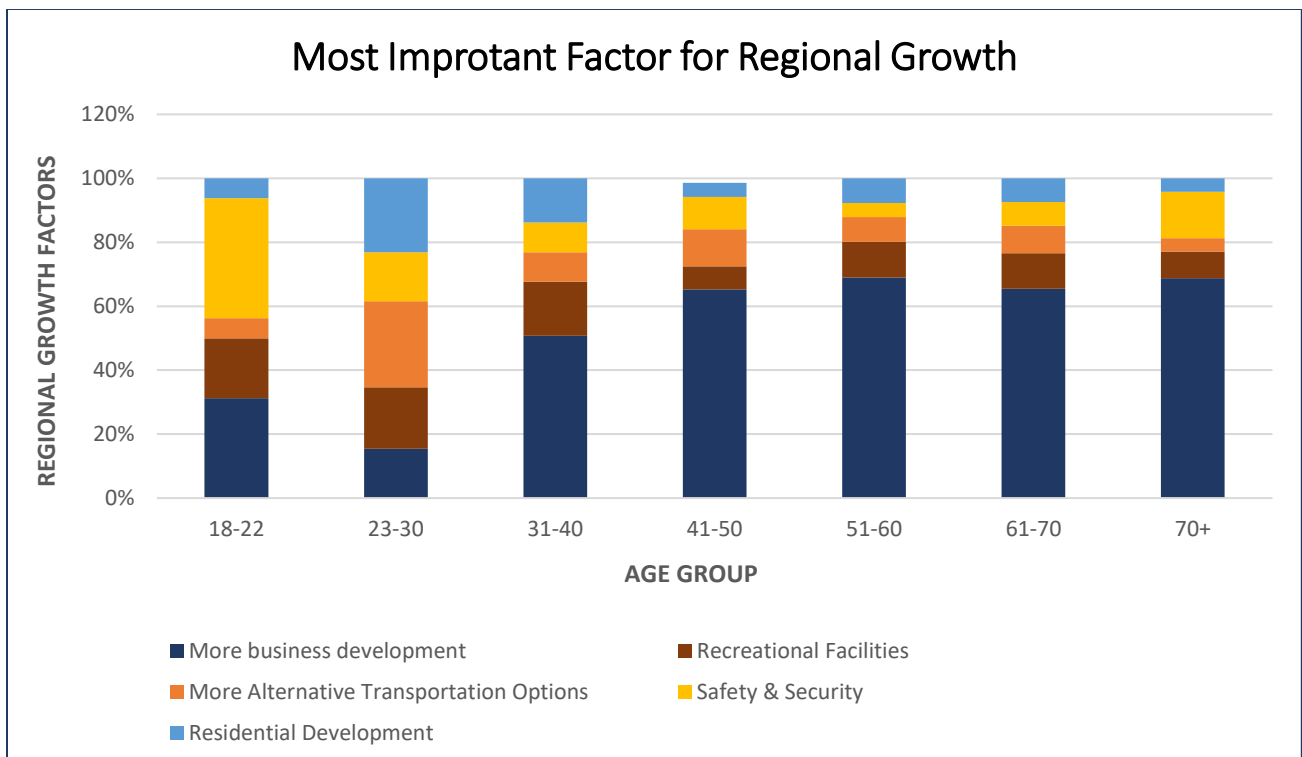
Question. 4. With limited transportation funds available, do you support investing the funding to:



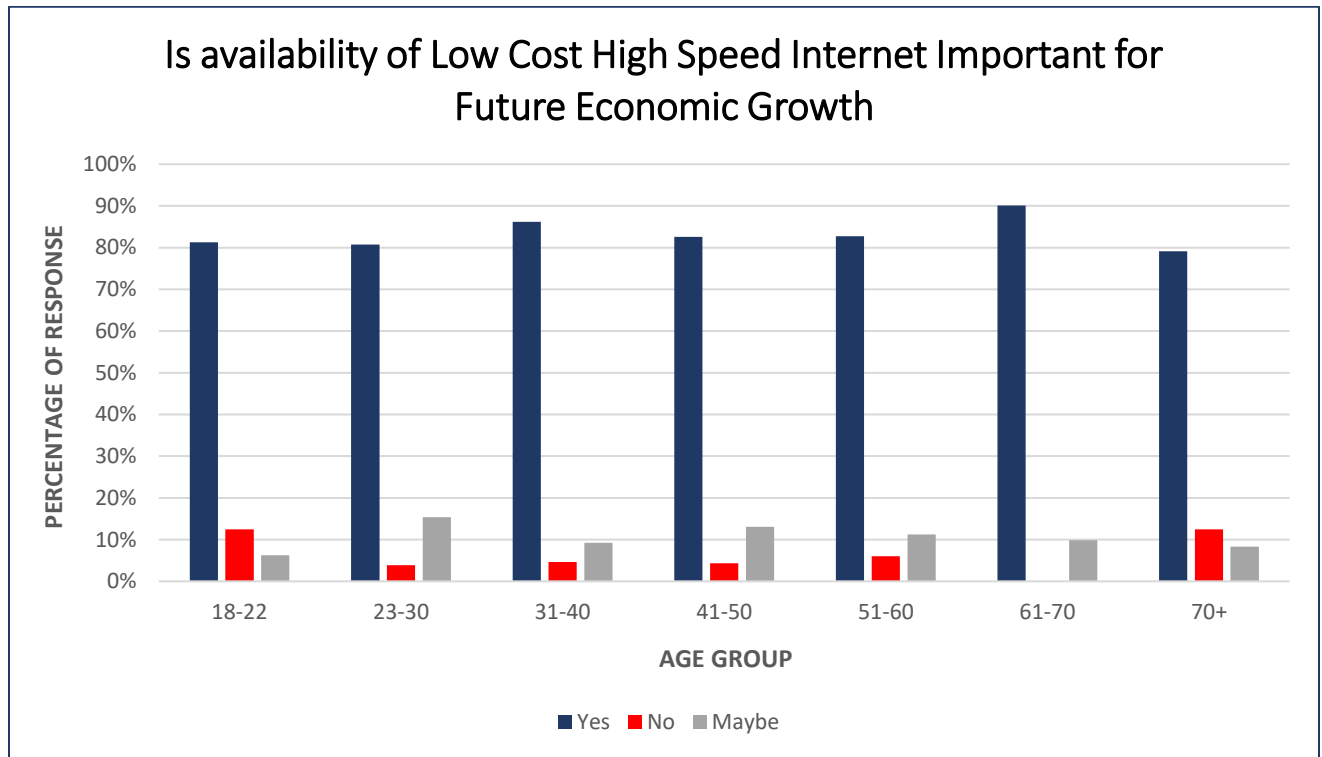
Question.5. Which transportation mode is important for sustainability and economic growth?



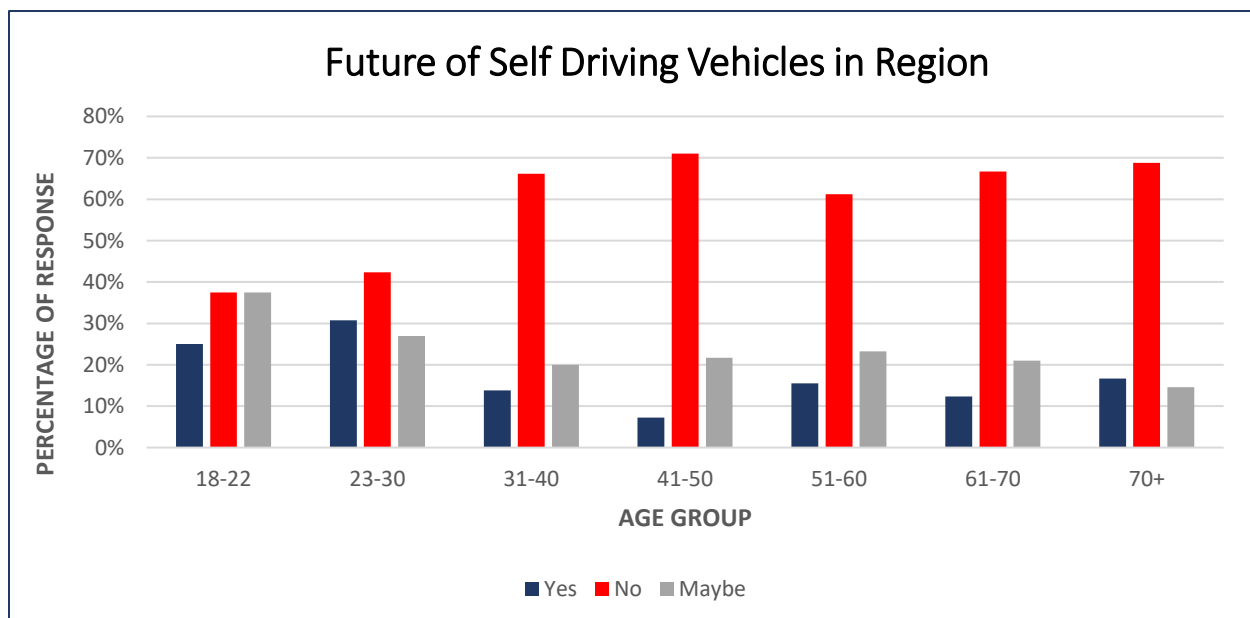
Question .6. In your opinion which factor is most important for our three-county (Brooke, Hancock, and Jefferson) area's future growth?



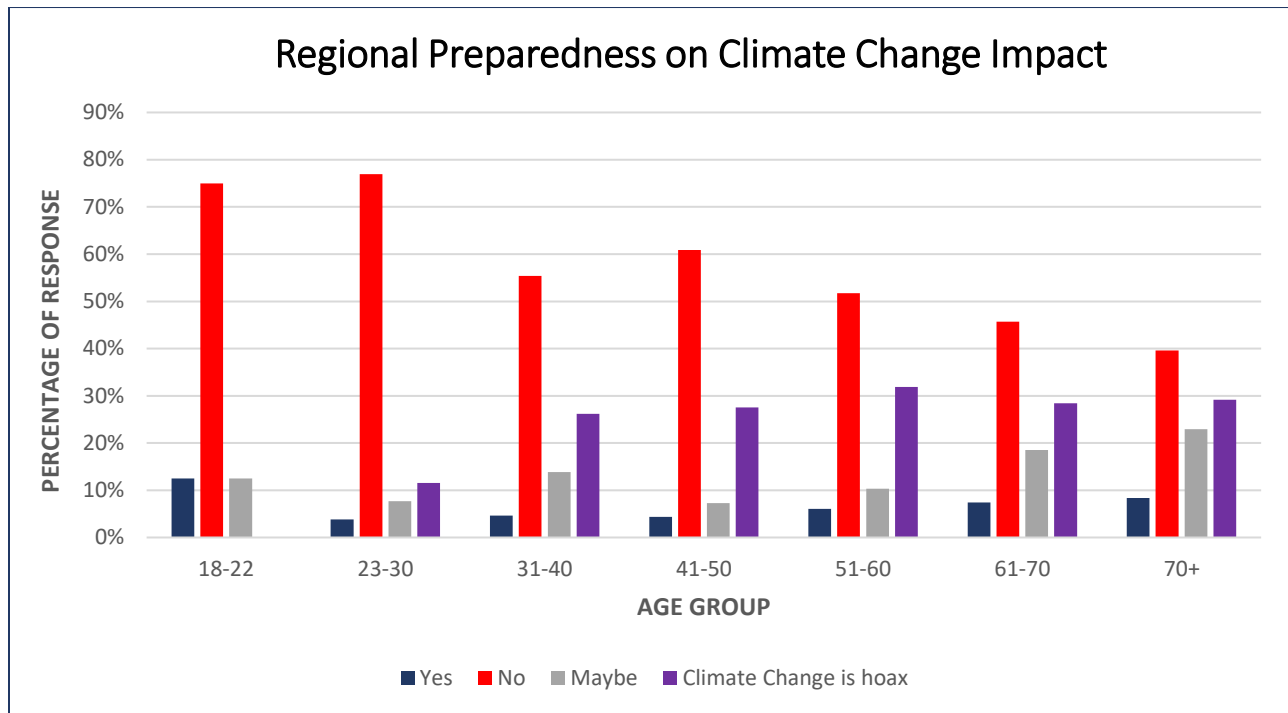
Question.7. In your opinion, "is the availability of low-cost high-speed internet important for our region's future economic growth?"



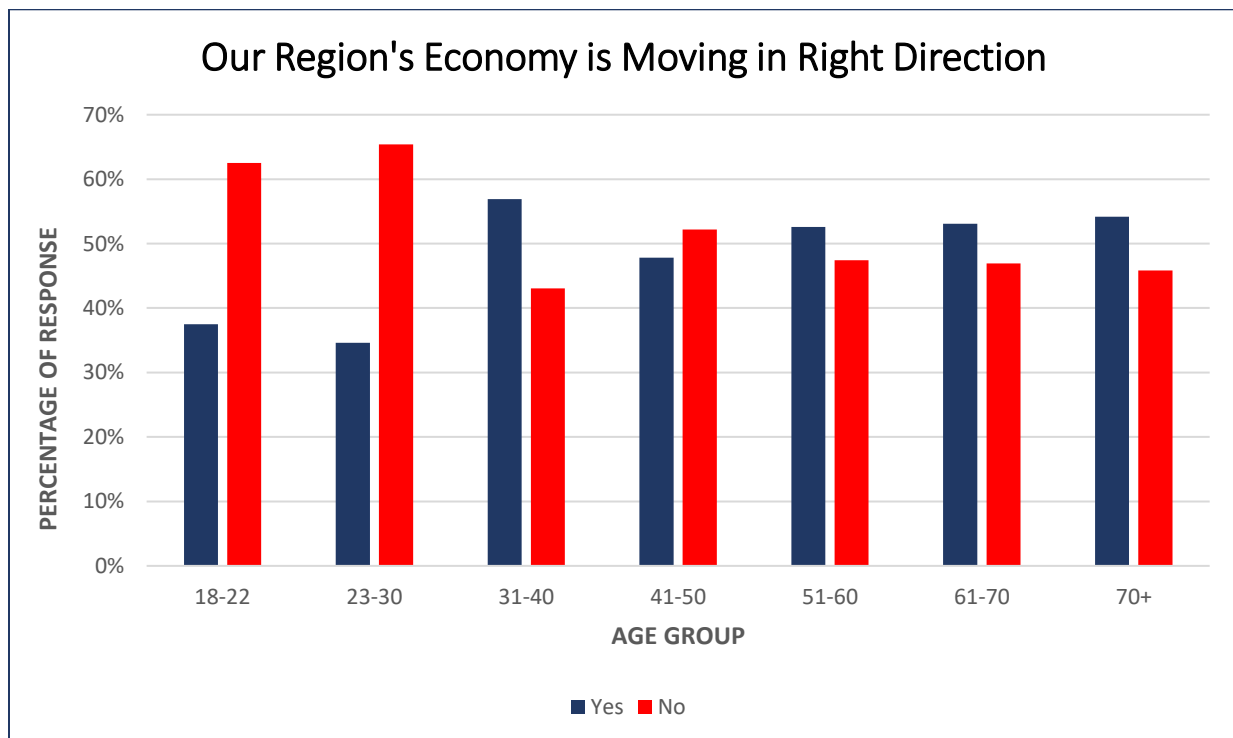
Question.8. Do you believe self-driving vehicles have a future in our three counties?



Question.9. Do you think the region is prepared for the adverse impacts of "Climate Change"?



Question.10. Do you agree that "our region's economy is moving in the right direction?"



SECTION 5: NON-HIGHWAY TRANSPORTATION INFRASTRUCTURE

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PUBLIC TRANSPORTATION

A wide variety of public transit and human service transportation programs serve the BHJ region. First, the Steel Valley Regional Transit Authority (SVRTA) operating in Steubenville and Mingo Junction, and the Weirton Transit Corporation (WTC), providing transit service in Weirton, are both designated recipient of Federal Transit Administration (FTA) §5307 funds in the urban area. Next, CHANGE Inc., a Community Action Agency organized in Weirton, manages a Job Access/Reverse Commute Program formerly titled under the FTA §3037. Other transportation services in the region include a variety of service organizations for seniors, behavioral health, and the mentally disabled throughout Brooke, Hancock, and Jefferson counties. Urban Area Public Transit operators in the BHJ area include:

- Steel Valley Regional Transit Authority – Services Jefferson County, Ohio throughout the urbanized areas of Mingo Junction, Steubenville, and Wintersville
- Weirton Transit Corporation – Services Brooke and Hancock counties, West Virginia throughout the City of Weirton

Human Service Agencies operating in Jefferson County, Ohio include:

- Checker Transportation
- Jefferson Behavior Health Systems
- Jefferson County Board of Developmental Disabilities
- Prime Time Office on Aging.
- TranSMART USA, LLC.
- Jeffco Services, Inc.
- Jefferson County Department of Jobs and Family Services (JCDJFS).

Human Service Agencies operating in Brooke and Hancock counties, West Virginia include:

- Brooke County Senior Center
- CHANGE Inc.
- Hancock County Senior Wellness Center
- Hancock County Sheltered Workshop
- Healthways.

In the last Long-Range Plan update, BHJ proposed a conceptual framework for Coordination of Cooperative services and developed a 3-tier program. In the **first tier**, they established a Mobility Action Council and created a Committee “RAMP – Regional Access Mobility Partnership”. This committee drafted and executed a Memorandum of Understanding to define the partnership’s roles and responsibilities. The group agreed that its first objective was to create a single point of access for transportation, human services information, and referral needs on a regional level. The RAMP further recognized that to improve services, each agency could explore avenues to share cost and operation through regional coordination efforts to improve access to health and human service needs, employment opportunities, and general travel. In the **second tier** they focused more on setting up a coordinated inter and intra county public transportation system that would expand the service area, facilitate opportunities for grants, combining contracts for service provision, maintenance, or administration. The **3rd and the last tier** emphasized a long-term strategy of coordination resources led by this agency.

REGIONAL COORDINATION PLAN FOR PUBLIC TRANSIT/HUMAN SERVICES

In Continuation of the goals and objectives of Tier 2 and 3 now the agency is moving toward a permanent **Mobility Management Program** that is a finding of “*Coordinated Public Transit/Human Services Transportation Plan*” developed for Jefferson, Brooke and Hancock counties. This plan fulfills the requirements of the Federal Transit Administration (FTA) under the Fixing America’s Surface Transportation (FAST) Act, signed into law as a reauthorization of surface transportation programs through Fiscal Year 2020. According to requirements of the FAST Act, locally developed coordinated public transit-human services transportation plans must be updated to reflect the changes established by the FAST Act legislation. The FAST Act applies new programs and rules for all Fiscal Year 2016 funds and authorizes transit programs for five (5) years.

Challenges to Coordinated Transportation

- Very limited options outside the region.
- No connections between cities and towns.
- Few vehicles accommodate elderly & disabled.
- Easier access entering & exiting buses/vans.
- Gap between elderly caregiving organizations & Medicaid Patients.
- Not Sufficient Weekend Service.
- Transportation for Veterans.
- Affordability – Sliding Scale.
- Efficient Medical Transportation.
- On-Time Appointments.
- Number of Vehicles and low frequency of trips of the transit and other transportation provider.

Unmet Transportation Needs

- Expanded geographic coverage area in the county (Amsterdam, Bergholz, Springfield, Richmond, Toronto, Brilliant, etc.).
- Transit service from Toronto to Steubenville – once or twice a week.
- Transportation service provider outreach in areas without internet/wireless coverage and expansion in local communities.
- More transportation service for Veterans.
- Rider assistance (either a volunteer or paid position) for groceries, medical appointments, recreation.
- More transportation options for education and employment for population with disabilities, especially those who are blind or visually impaired.
- Expanded service hours for transportation.
- Transit option to connect younger populations to employment opportunities.
- Shopper shuttle for the county.
- More medical trips outside the county/state.
- Vouchers, sliding scale for payment from population in poverty.
- More services for commercial, recreational purposes.
- More out-of-state trips.
- Consumer education/marketing/senior advocacy & outreach.
- More weekend services.

Plan for Achieving Shared Goals

Five goals were established to guide the Jefferson County Coordinated Transportation Plan and to identify strategies that can be used to achieve the Coordinated Transportation Plan goals. These are the five goals developed by the Planning Committee:

1. Enhance coordination and provide transportation services in a more efficient and cost-effective manner to increase mobility.
2. Build upon existing public/private partnerships for Jefferson County Transportation Service Providers as needed.
3. Improve access and services for veterans, elderly, and persons with disabilities.
4. More available employment transportation for persons with disabilities.
5. Improve and enhance marketing for all transportation services and providers.

THE MOBILITY PARTNERSHIP FOR HUMAN SERVICES” STANDING COMMITTEE

Based on the findings of these two-coordination plan, BHJ decided to initiate a new program through a created “**The Mobility Partnership for Human Services**” standing committee. This Committee’s mission is to eliminate and reduce where possible, obstacles and barriers to transportation services regardless of governmental boundaries (i.e. county, state or service boundaries) and provide opportunity for participation and cooperation among all public transit/human services, and private transportation providers, as well as, other social service agencies. The goal of this committee is to

- Reduce operating cost and improve conservation of available services.
- Develop a form of central management i.e. Mobility Manager.
- Create a form of format or policy for consistent communication.
- Expand “Down the Road” with an eye towards the business community.

The current members of this committee include

- County Commissioners, Jefferson County
- Coleman Professional Group (Mental Health)
- (JVS) Jefferson County Prevention Services & Recovery Board
- Family Recovery Center
- Prime Time
- SVTRA
- Powell’s (formally Jeffco Place)
- EGCC
- Franciscan University
- Job and Family
- Trinity Hospital
- Jefferson County Chamber of Commerce
- The Bergholz Foundation
- Representative from Veterans Organization

- Checker Cab Company
- Trans Smart
- Lyft
- Jefferson County Board of Disabilities.
- Jefferson County Community Action Council (CAC)

Non-Voting

Ohio Mid-Eastern Government's Association (OMEGA).

REGIONAL COORDINATION PLAN FOR EASTERN OHIO

Moreover, BHJ acknowledged the need more Intra county human transit services and now participating in Regional Coordination Plan and an active member of Regional Coordination Council. This is a 10-county initiative taken by Ohio Mid-Eastern Government's Association (OMEGA). Besides Jefferson county of this region, rest of the counties are Belmont, Carroll, Columbiana, Coshocton, Guernsey, Harrison, Holmes, Muskingum and Tuscarawas. The main goal of this coordination plan is to transport more people especially seniors and people with disabilities with quality service at lowest cost in and out of their respective counties. As a byproduct of this plan and council, a pilot project is already on the way to set up a regional call center which will coordinate among different transport agencies for people who want to make out of county trips. This plan also focuses on different scheduling software's for the efficiency and reiterate the necessity of mobility managers for the fruitful implementation of Mobility Partnership for Human Services.

PUBLIC TRANSIT SCENARIO OF BHJ REGION

WTC

Weirton Transit Corporation is the Public transit agency of Weirton, West Virginia. They serve 6:00 AM to 7:30 PM Monday – Friday, 6:00 AM to 5:00 PM Saturday. WTC also has demand response service for passengers with disabilities. They have a total of 10 vehicles with 3 full time and 9 part time drivers. Currently they are serving only the City of Weirton Corporation area. Their overall ridership trend from 2015-19 is depicting a decreasing trend. On average, they carried 50,000 riders per year. First time in the last five years they have an increase in ridership in 2019. The ridership trend depicts highest ridership trend in the first and third quarter of the year.

FIGURE 1 RIDERSHIP TREND WEIRTON TRANSIT CORPORATION

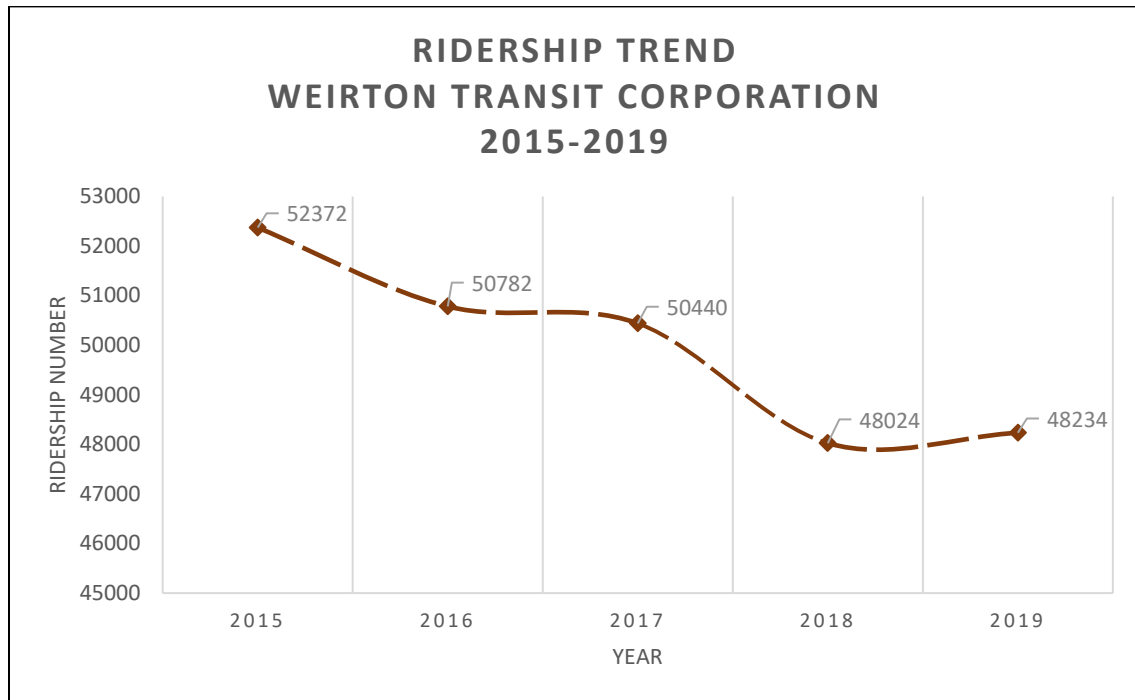


FIGURE 2 RIDERSHIP YEARLY CHANGE IN PERCENTAGE

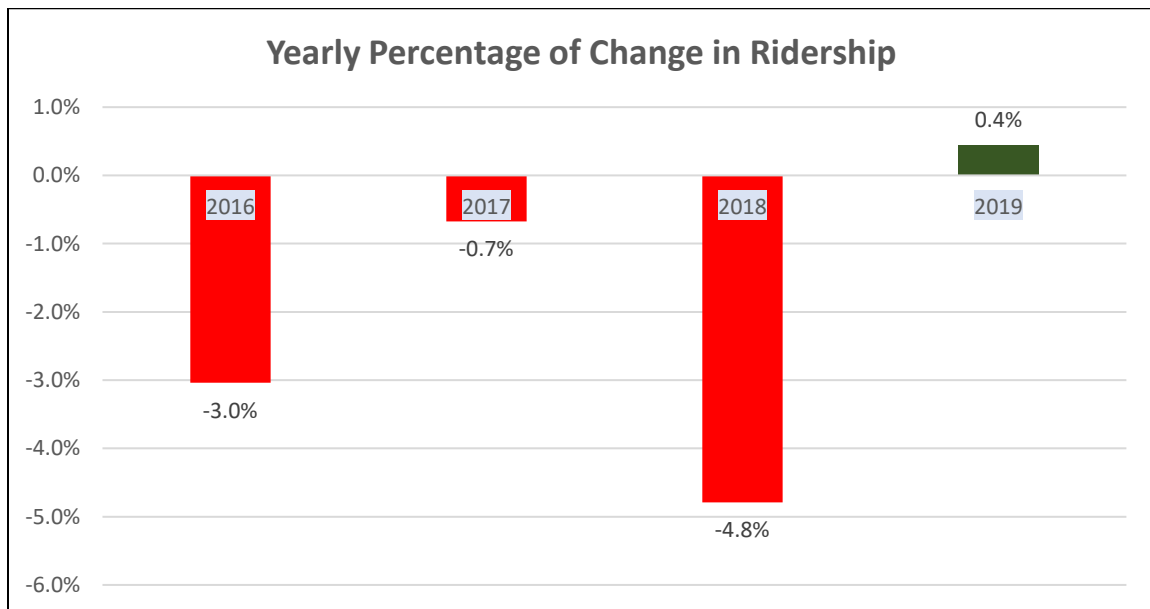
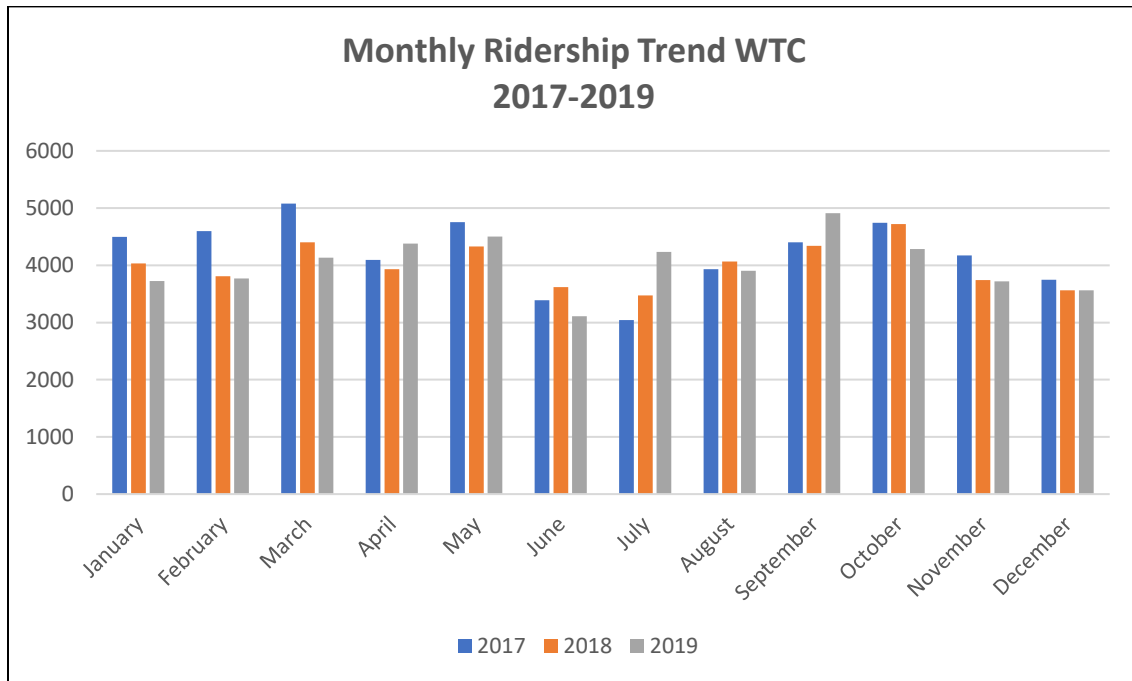


FIGURE 3 MONTHLY RIDERSHIP CHANGE WTC



STEEL VALLEY REGIONAL TRANSIT AUTHORITY (SVRTA)

Steel Valley Regional Transit Authority (SVRTA) is the primary public transportation authority in Jefferson County. They serve the local area of Steubenville, Wintersville, and Mingo Junction only. They operate Monday through Friday from 6:30 am – 6:15 pm and on Saturday from 9 am – 5 pm. As of this year, they had 25 vehicles in their fleet, one being a maintenance vehicle for all their transportation service vehicles. A handful of their vehicles are either being disposed or ready for replacement. Currently, only eight vehicles are in good condition. Of their entire fleet, including the maintenance vehicle, 22 vehicles have the capacity for two wheelchairs, and three vehicles have the capacity for one wheelchair. On average in the last 5 years they carried 0.175 million riders per year. The number is highest in 2018 and lowest in 2016. Overall, they are maintaining a steady ridership numbers despite of the 15% loss of ridership in 2019. The ridership trend depicts highest ridership trend in the first and third quarter of the year.

FIGURE 4 RIDERSHIP TREND STEEL VALLEY REGIONAL TRANSIT AGENCY

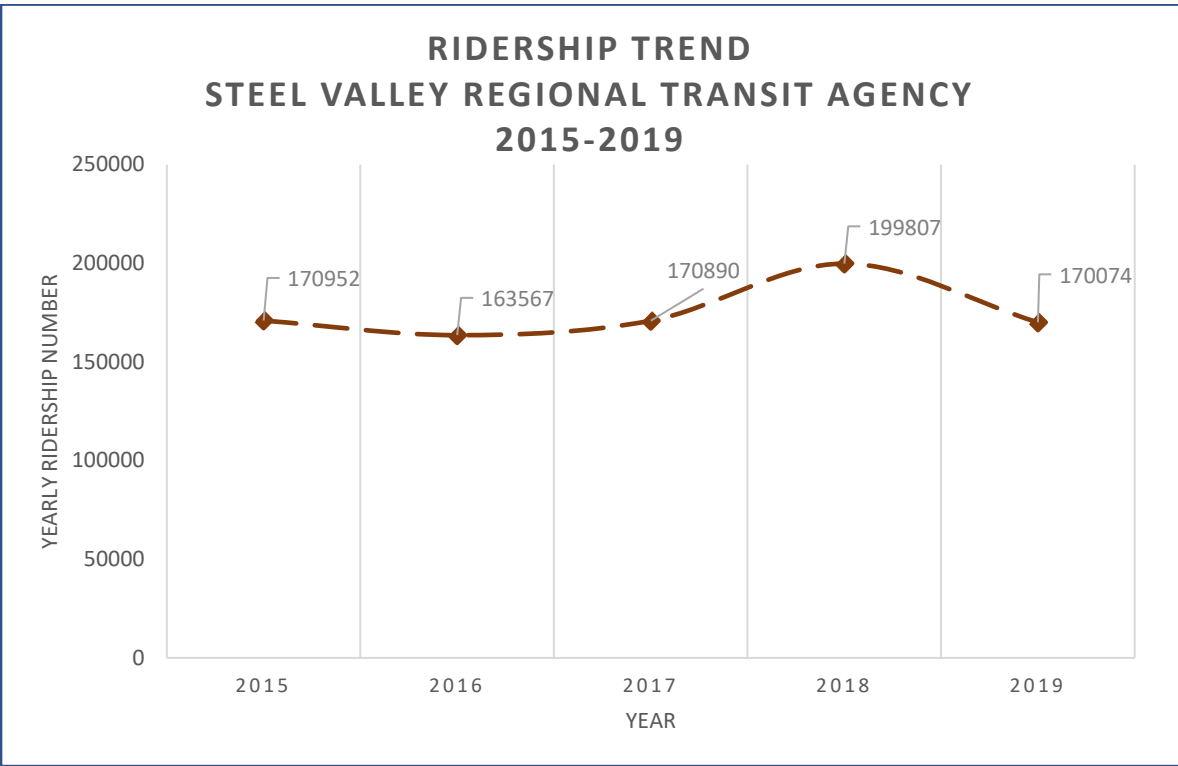


FIGURE 5 RIDERSHIP YEARLY CHANGE IN PERCENTAGE

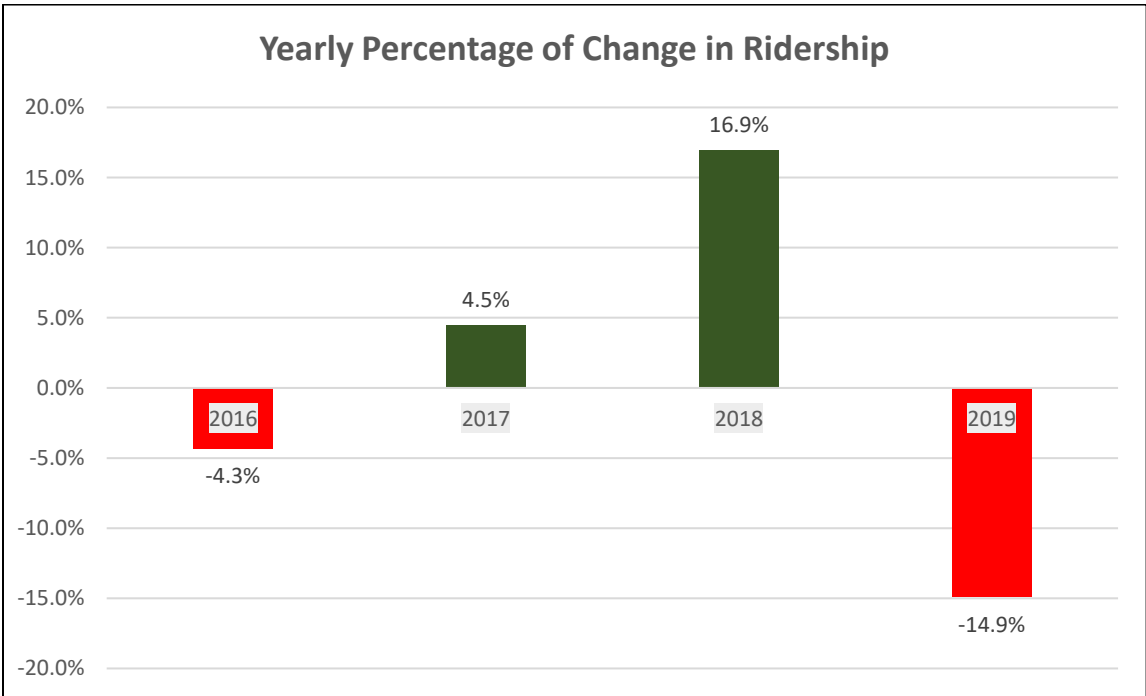
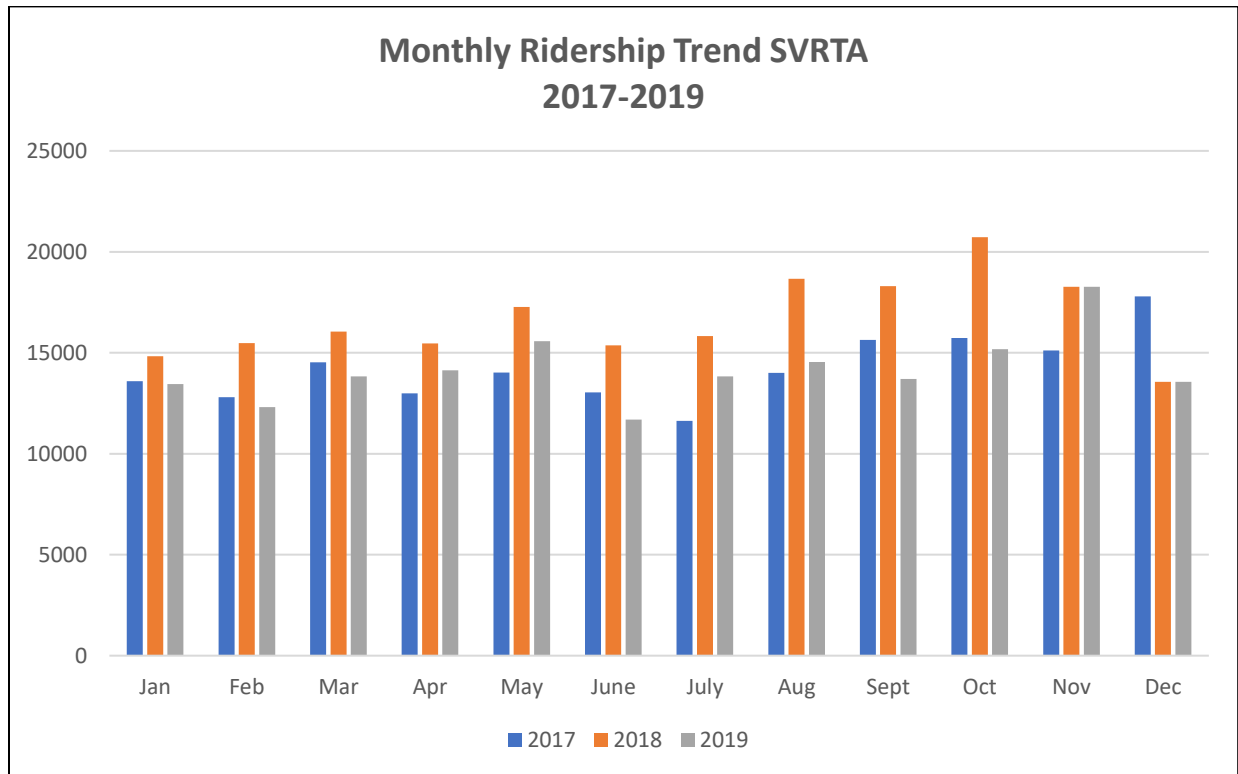


FIGURE 6 MONTHLY RIDERSHIP CHANGE SVRTA



RIDESHARE/VANPOOLING

In previous years, BHJ has strived to operate a stand-alone Rideshare program with little or no success. In early 2003, as the Southwest Planning Commission (the Pittsburgh, PA Metropolitan Planning Organization) reassessed its Rideshare program and developed the *CommuteInfo* program, SPC approached BHJ to join a new partnership. *CommuteInfo* is a coordinated partnership of transportation management agencies, transportation providers, businesses, and non-profit service organizations throughout Southwestern Pennsylvania, Jefferson County, Ohio and the West Virginia Northern Panhandle counties of Brooke and Hancock. *CommuteInfo* provides commuter information and service for persons who desire commuter travel alternatives to driving alone to their jobs and/or school primarily into Allegheny County Pennsylvania. The goal of this program is to choose ridesharing at least twice a week by providing viable options, incentives, and encouragement for commuters living, working, or attending school within the 13-county *CommuteInfo* area.

The Cost of ride for each individual range from \$90-\$120/month. This cost includes vehicle, vehicle maintenance, and vehicle insurance of the Enterprise-owned vehicle. Fuel and toll charges (if any) are not included in this pricing. Monthly cost of vehicle is shared among the group equally. Oftentimes the driver is not required to pay anything as they are absorbing the stress of driving the group. SPC has a ride matching software to pair-up riders with pools. The program asks prospective poolers whether they would consider being a driver and offer up to \$200 in funds for van-driver training for a prospective van driver. Emergency ride homes are limited to 4x/year, or up to a maximum of \$100/yr. – whichever comes first. This operation runs by a Program Manager, Administrative Specialist, and Outreach Specialist. At this moment *Commuteinfo* has 2 Vans that come from BHJ region to Pittsburgh and 1 that travels Pittsburgh region to

BHJ (reverse commute) daily. Most of these riders are traveling to City of Pittsburgh, Oakland (University and Hospital Region) Cranberry, PA (Westinghouse), and Butler County, PA (Secure Government offices). A current trend in the riders' demand suggesting more carpool request than van pool.

The U.S. Census Bureau Journey to Work statistics indicate that the number of workers commuting to Allegheny County, PA from the Brooke-Hancock-Jefferson region has increased 144% from 1,398 workers in 1990 to 3,416 workers in 2000. The BHJMPC desires to continue its partnership with *CommuteInfo* and expand promotion and marketing components of the program. Marketing materials include a variety of media outlets such as television and newspaper advertising, billboards, public service announcement, and other printed materials. Finally, BHJ and SPC continually re-evaluates their joint public outreach efforts every 6 months through a variety of techniques such as tracking new program registrations or completing mail out/mail back surveys.

BICYCLE (ACTIVE TRANSPORTATION) PLANS

In continuing to improve the health of the citizens of the area as well as reduce the amount of traffic, congestion, pollution, and provide alternate means of transportation, more walking and biking facilities are being considered and built in the BHJ metropolitan planning area. These areas will not only benefit those living near these facilities but will also play a role in adding tourism attractions to the area. Part of this is the interest and planning of the Rails-To-Trails Conservancy (RTC) of their Great American Rail Trail that would go from Washington State to Washington D.C., U.S Bike Route 50, and multiple shared use paths.

In Brooke and Hancock Counties in WV, there are already existing trails that could see expansion as part of the Great American Rail Trail. The Panhandle Trail crosses the WV/PA line and continues NW through Brooke County and into Hancock County where it currently ends in Weirton. The RTC has expressed interest in continuing this trail to the OH/WV border where it will cross the Ohio River. RTC's plan is to utilize the Market St. Bridge as a crossing but BHJ is actively working to get more utilization out of the shared use path that is currently being constructed on the new bridge Connecting Wellsburg, WV and Brilliant, OH. Along with a shared use path, the new bridge will have access to the Brooke Pioneer trail. This trail will pass underneath the bridge with a ramp to access the bridge and runs along the river connecting Wheeling and Wellsburg in WV. In Fall of 2019, AASHTO approved a route across West Virginia of the U.S. Bike Route 50 (USBR 50) that connects the already established route through Ohio. This portion goes from the Market Street Bridge in Ohio and connects to the Panhandle Trail in Weirton, WV, and continues on into Pennsylvania.

In Jefferson County there are currently no trails, but the Great American Rail Trail is planned to be constructed through Steubenville and head west to connect to the Cotton Creek Trail in Harrison County. The Jefferson Soil and Water Conservation District has trail development plans for a trail that would pass through the Hellbender Preserve that the RTC would also like to utilize. Through BHJ, it is scheduled that a shared use path will be constructed that connects Historic North 4th Street and run along St. RT 7 down to the Steubenville Marina. Also, USBR 50 extends from the Harrison/Jefferson County Line and travels through the county through Wintersville and Steubenville and crosses the Ohio River at the Market Street Bridge, into West Virginia. There is an interest in future development of a route along 3rd or 4th street in Steubenville for a Pedestrian/Bicycle preferred passage that would connect the shared use path to USBR 50 and the downtown Steubenville area. There is also an interest to have trails along the Ohio River Front, but no plans are available at this time.

SECTION 6: HIGHWAY AND BRIDGE INVENTORY

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SECTION 6 - HIGHWAY & OHIO RIVER BRIDGE INVENTORY

An inventory of transportation facilities is a key element in developing a transportation plan. This section identifies the BHJ Region's highway network eligible for federal-aid, major highway corridors listed on the National Highway System, and highway bridges crossing the Ohio River. The inventory serves as a reference that identifies federal-aid highway facilities and the Ohio River Bridge crossings that interconnect the three-county region and surrounding areas of Ohio, West Virginia, and Pennsylvania.

The metropolitan planning factors listed in the current federal transportation-spending bill titled Fixing America's Surface Transportation Act or the FAST Act emphasize the efficient preservation of the existing transportation system. Considering the high cost of highway maintenance and new construction, this plan highlights the preservation of the existing transportation network. Preservation may not only include resurfacing and rehabilitation of highways and bridges, but also include an increase of roadway and river crossing capacity that may solve congestion and safety problems. Over the years, federal, state, and local governments have invested vast amount of dollars building transportation infrastructure in each of the three counties that must be preserved and maintained in a safe and functional capacity. Although the cost of highway and bridge projects considered in this plan for the next 25 years may exceed anticipated revenues for funding, each investment, either minor or major in monetary expenditure, is justified by meeting the stated goals and objectives of this plan.

FUNCTIONAL CLASSIFICATION

State Highway Agencies conduct functional classification updates every 10 years concurrent with the decennial census. Decennial updates allow local communities, State DOT's and FHWA to modify or redefine the functional classification system to capture changes in travel patterns, network linkages, as well as improvements and modifications to existing roadways and corridors. Movement of traffic is the primary basis for each classification followed by, access to adjacent land use, the physical attributes of the highway type, and the distance traversed by the highway facility. The National Functional Classification (NFC), in acceptance since the early 1960's, classifies highways by three levels of hierarchy. The three levels of classification are: (1) arterial highways, (2) collector streets, and (3) local roads. The classification system further stratified arterials and collector's highway by functional capacity. Historical functional classification guidance segregated roadway categories into urban and rural locations. There were six urban classifications and six rural classifications. In 2013, FHWA issued newer guidance eliminating the urban and rural classifications reducing the total number of classifications from twelve to seven as shown below by order of importance, ranked 1 as the highest importance and 7 as the lowest.

Table 1 Urban and Rural Function Classification Categories of Highways

1.	Principal Arterials	2.	Minor Arterials
	a. Interstate	3.	Collectors
	b. Other Freeways and Expressways		a. Major Collector
	c. Other Principal Arterials		b. Minor Collector
		4.	Local Roads
New category for rural areas; under the previous scheme, a rural non-interstate freeway/expressway was classified as a Rural Principal Arterial. New category for urban areas; Urban Minor Collectors are Federal aid eligible whereas Rural Minor Collectors are not.			

Interstate Highways

Interstates are the highest classification of Arterials and were designed and constructed with mobility and long-distance travel in mind. Since their inception in the 1950's, the Interstate System has provided a superior network of limited access, divided highways offering high levels of mobility while linking the major urban areas of the United States. There are no Interstate Highways in Brooke, Hancock, or Jefferson counties.

Other Freeways & Expressways

Roadways in this functional classification category look very similar to Interstates. While there can be regional differences in the use of the terms 'freeway' and 'expressway', for the purpose of functional classification the roads in this classification have directional travel lanes are usually separated by some type of physical barrier, and their access and egress points are limited to on- and off-ramp locations or a very limited number of at-grade intersections. Like Interstates, engineers design and construct these roadways to maximize their mobility function.

Highways in the region classified as Other Freeways & Expressways are United States Route 22 (US-22), Ohio State Route 7 (OH-7), and a short segment of West Virginia State Route 2 (WV-2) between Follansbee and Weirton. US-22 directs traffic through the region west to east bisecting Jefferson County bypassing the central city of Steubenville, OH, crossing the Ohio River, and then traversing through West Virginia along the approximate border of Brooke and Hancock counties through the central city of Weirton. OH- 7 traverses south to north generally following the Ohio River Valley throughout the entire length of Jefferson County. WV-2 also moves traffic parallel south to north along the Ohio River Valley through Brooke and Hancock counties. A segment of WV-2 listed as Freeways/Expressways connects traffic from just north of Follansbee, WV at the Market Street Bridge to an interchange with US-22.

Other Principal Arterials

These roadways serve major centers of metropolitan areas, provide a high degree of mobility, and can provide mobility through rural areas. Unlike their access-controlled counterparts, Other Principal Arterials can serve abutting land uses. Forms of access for Other Principal Arterial roadways include driveways to specific parcels and at-grade intersections with other roadways. In urban areas, Other Principal Arterials may have little or no access control with traffic signals at major intersections. These facilities may be either two-lane or multiple lane highways that may include median turn lanes or multiple left/right turn lanes at intersections. Other Principal Arterials are spaced within the highway network to provide a direct and continuous route for a high volume of traffic that connects to regionally significant

activity centers or outlying rural population centers.

Other Principal Arterials in the BHJ region are:

- West Virginia State Route 2 (WV-2) through Brooke and Hancock counties,
- US Route 30 in the northeast corner of Hancock County,
- Ohio State Route 43 (OH-43) in Jefferson County signed as Washington Street and Sunset Boulevard through Steubenville and Frank P Layman Boulevard and Canton Road in Wintersville, and
- Jefferson County Route 22A (CR-22A) from US-22 interchange at Reeds Mill to OH-43 in Wintersville

Minor Arterials

Minor Arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterial counterparts are and offer connectivity to the higher Arterial system. In an urban context, they interconnect and augment the higher Arterial system, provide intra-community continuity and may carry local bus routes. In rural settings, Minor Arterials are spaced at intervals consistent with population density, so that all developed areas are within a reasonable distance of a higher-level Arterial. Engineers and planners typically design Minor Arterials in rural areas to provide relatively high overall travel speeds, with minimum interference to through movement.

Urban and rural Minor Arterials in West Virginia are:

- Pennsylvania Avenue and Cove Road in Weirton,
- Eldersville Road (WV-27A) starting in Follansbee to the State Line and Washington Pike (WV-27) originating in Wellsburg to the State Line in Brooke County, and
- WV-8, connecting WV-2 in New Cumberland to US-30 in Hancock County.

Urban and rural Minor Arterials in Ohio are:

- the integrated network of Fourth Street to Lincoln Avenue to John Scott Highway ending at US Route 22 in Steubenville, OH form an integrated urban Minor Arterial network; this urban network also connects Sinclair Avenue starting at the John Scott Highway intersection to Lovers Lane Road then north to Sunset Boulevard (OH-43) ending at US Route 22,
- Brady Avenue from Sunset Boulevard to University Boulevard ending at Seventh Street in Steubenville,
- Lawson Avenue from Sunset Boulevard to Adams Street ending at Third Street in Steubenville,
- The combined network of Wilson Avenue at Lincoln Avenue in Steubenville to McClister Avenue ending at Commercial Avenue in Mingo Junction,
- The street network of Franklin Avenue, Trenton Street and the one-way pair of Third and Fourth Streets in Toronto,
- Commercial Avenue in Mingo Junction starting at OH-151 north to OH-7 at Logan Avenue is another urban Minor Arterial roadway,
- Old State Route 7 through Brilliant in Wells Township, and
- State Route 43 from US-22 in Wintersville north to Amsterdam at the Carroll County line.

Major and Minor Collectors

Collectors serve a critical role in the roadway network by gathering traffic from Local Roads and funneling them to the Arterial network. Within the context of functional classification, Collectors are broken down into two categories: Major Collectors and Minor Collectors. Until recently, planners considered this division only in the rural environment. Currently, planners may sub-stratify all Collectors, regardless of whether they are within a rural area or an urban area, into major and minor categories. The determination of whether a given Collector is a Major or a Minor Collector is frequently one of the biggest challenges in functionally classifying a roadway network.

In the rural environment, Collectors generally serve primarily intra-county travel (rather than statewide) and constitute those routes on which (independent of traffic volume) predominant travel distances are shorter than on Arterial routes. Consequently, posted speed limits may be more moderate.

The distinctions between Major Collectors and Minor Collectors are often subtle. Generally, Major Collector routes are longer in length; have lower connecting driveway densities; have higher speed limits; are spaced at greater intervals; have higher annual average traffic volumes; and may have more travel lanes than their Minor Collector counterparts may. Planners should carefully consider these factors when assigning a Major or Minor Collector designation. In rural areas, AADT and spacing may be the most significant designation factors. Since Major Collectors offer more mobility and Minor Collectors offer more access, it is beneficial to reexamine these two fundamental concepts of functional classification. Overall, the total mileage of Major Collectors is typically lower than the total mileage of Minor Collectors, while the total Collector mileage is typically one-third of the Local roadway network.

Local Roads

Local Roads encompass the remaining street network not listed in any of the higher functional classification groupings already considered. Local Roads primarily serve as direct access to abutting land developments and access to the higher ordered systems of classification. Service to through traffic on Local Streets usually is deliberately discouraged.

FEDERAL-AID HIGHWAY NETWORK

The Functional Classification System defines the Federal-Aid Highway System. Under the standards adopted in the FAST-Act, all classifications other than Local Roads and Minor Collectors in rural areas make up the eligible Federal-Aid Highway System. Overall, regionally, Other Freeways/Expressways and Principal Arterials make up slightly more than 6 percent of the region's total roadway system accounting for roughly 121 centerline miles of highways. Inversely, these highways carry more than 69 percent of the region's Average Annual Daily Traffic (AADT). This statistic defines the importance of Freeways, Expressways, and Principal Arterial highways in the three counties in terms of movement of people, goods, and freight. Furthermore, the Federal-Aid Highway System (defined as Freeways/Expressways, Principal Arterials, Minor Arterials, and Collectors) account for slightly less than 23.5 percent or 460 miles of the nearly 2,000 miles of highways, roads and streets in the Steubenville-Weirton Metropolitan Area. In addition, the federal-aid system carries approximately 97.5 percent of all traffic circulating in the three-county area on an average day. In conclusion, local, state, and federal governments must continue to commit their respective available financial resources to maintain this highway system to highest practical standard.

NATIONAL HIGHWAY SYSTEM

The National Highway System (NHS) is a network of strategic highways within the United States that includes the Interstate Highway System, Other Principal Arterials, the Strategic Highway Network that provide defense access and emergency capabilities for defense purposes, Major Strategic Highway Network Connectors that directs transportation services to major military bases, and Intermodal Connectors that link major intermodal facilities. The NHS serves major population centers, international border crossings, as well as primary Intermodal transportation terminals, provides the means of a secure national defense, and enhances interstate and interregional mobility. The Department of Transportation (DOT) developed the NHS in cooperation with the states, local officials, and metropolitan planning organizations.

The area's National Highway System includes West Virginia State Route 2, Ohio State Route 7, and United States Route 22 in both West Virginia. Although the metropolitan area's National Highway System accounts for less than 6 percent of the total highway miles, it carries nearly 50 percent of the region's average daily traffic.

MAJOR TRANSPORTATION CORRIDORS

Several major highway corridors bisect the Brooke, Hancock, and Jefferson counties region. West Virginia State Route 2 and Ohio State Route 7 comprise two major north-south corridors generally following the Ohio River Valley, and United States Route 22, the major east-west corridor cutting through the center of the three-county geography.

Figure 1 Major Transportation Corridors of BHJ Region

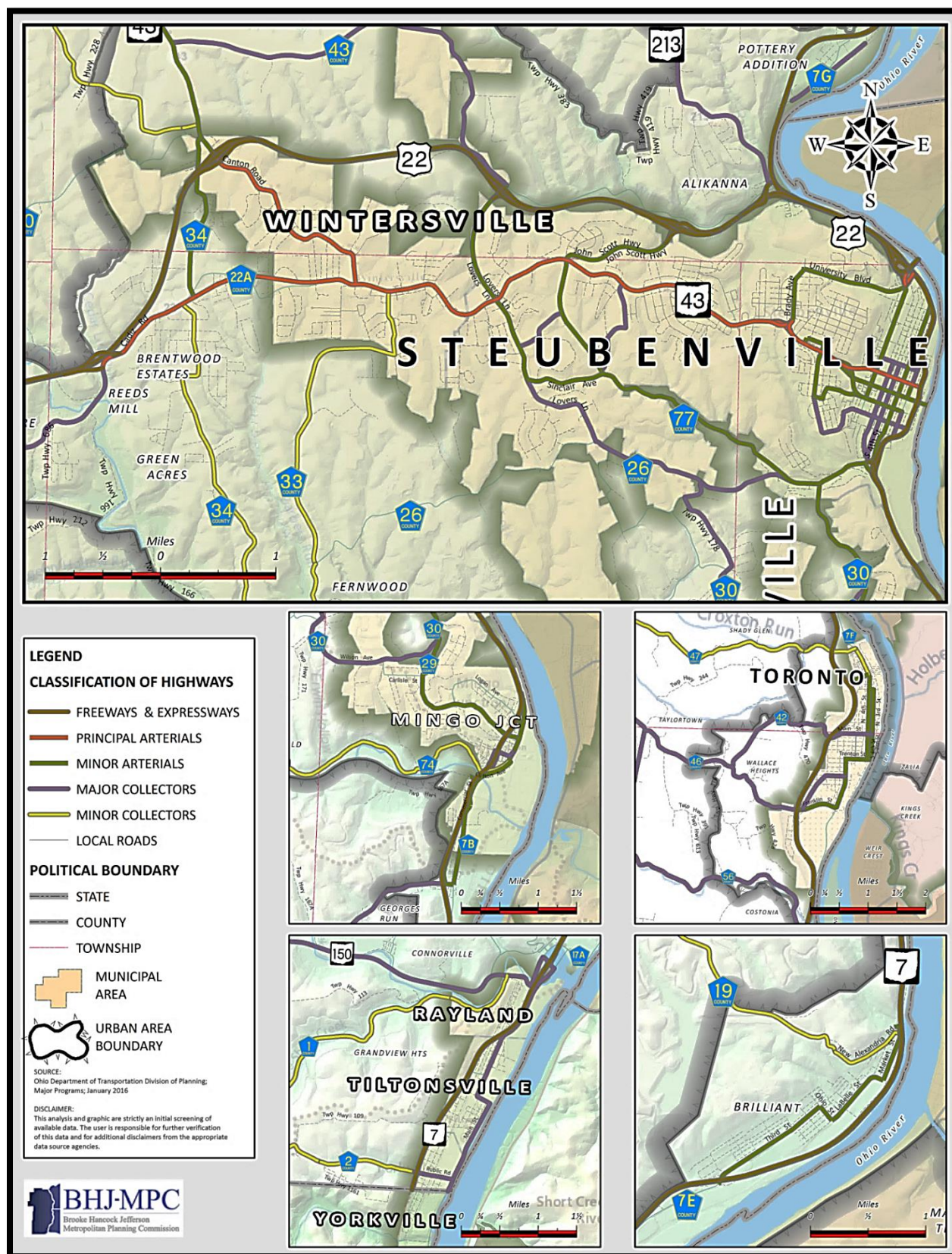


Figure 2 Federal Aid Highways of BHJ Region

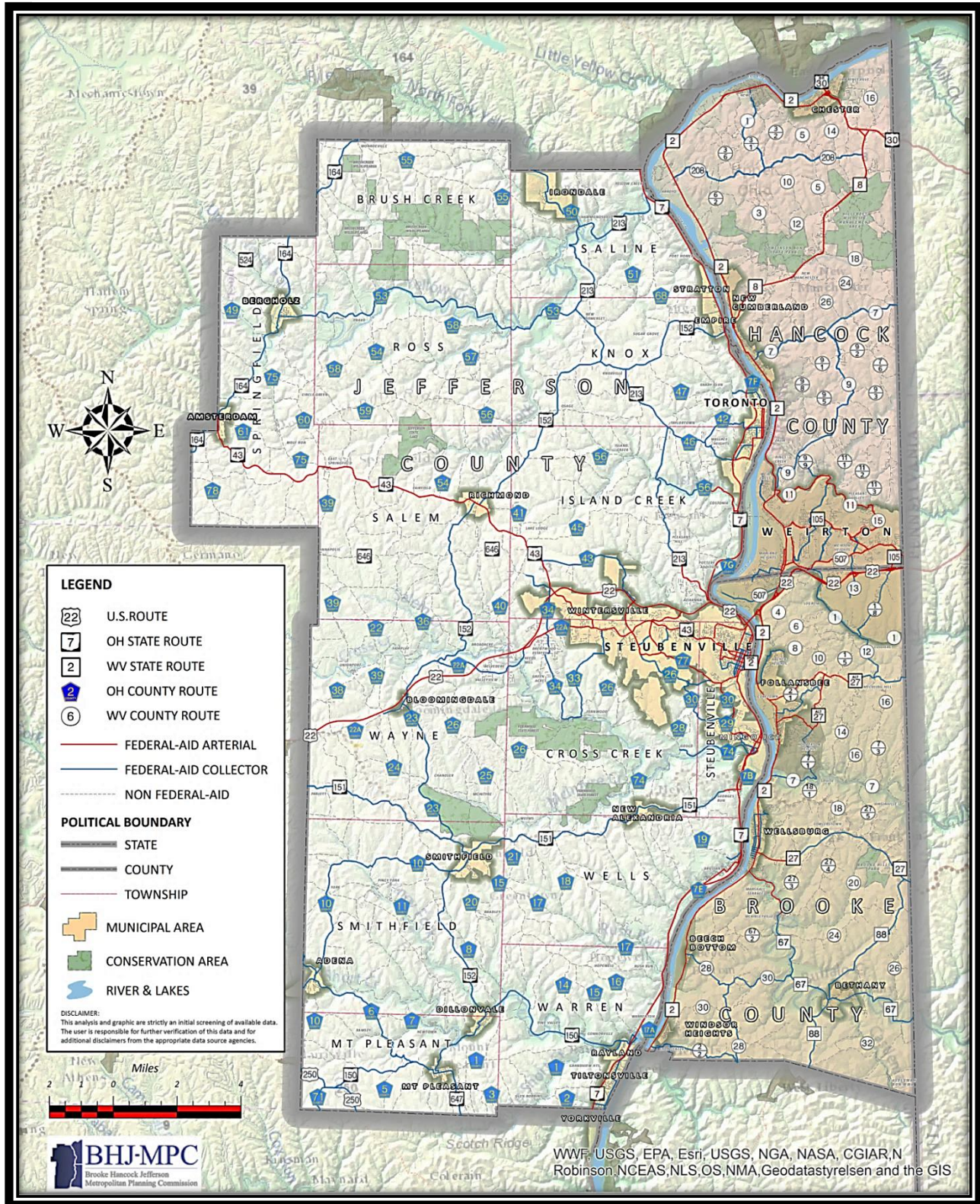
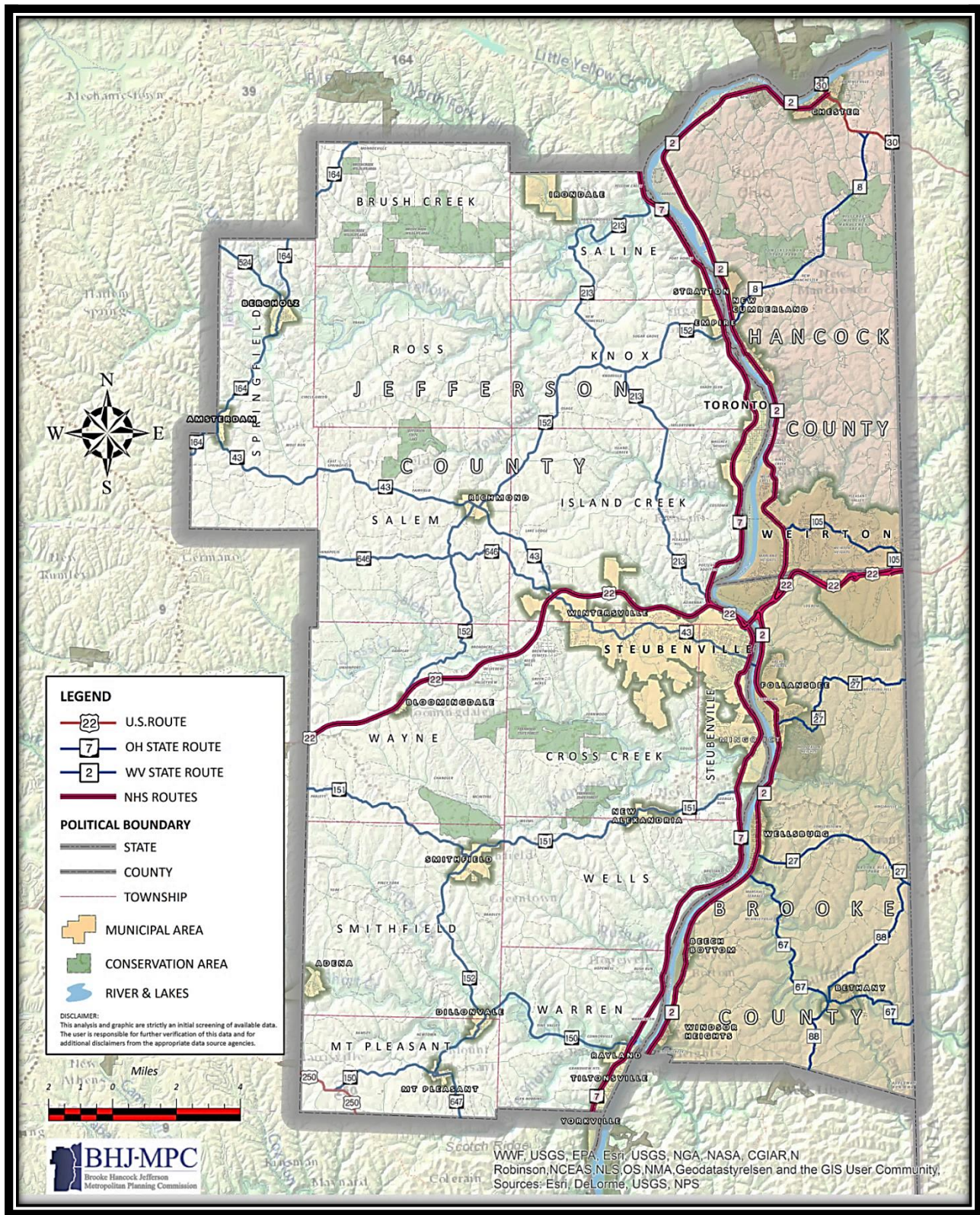


Figure 3 BHJ National Highway System



Ohio State Route 7 services south to north bound traffic traveling through the west perimeter of the Ohio River Valley. Starting in the mid 1950's and ending in the late 1980's, ODOT completely re-constructed OH-7 through Jefferson County as a four-lane limited-access facility from Bridgeport, OH in the south at Interstate 70 to US Route 30 in the north at East Liverpool, OH directly southeast of Chester, WV across the Ohio River. Presently, in Jefferson County, the roadway carries an average daily traffic ranging from 10,600 vehicles in Stratton, OH (near the Columbiana/Jefferson County Line) to more than 18,290 vehicles between Mingo Junction and Steubenville (the urban center of Jefferson County). State Route 7 connects the Jefferson County river-communities (from south to north) Yorkville, Tiltonsville, Rayland, Brilliant, Mingo Junction, Steubenville, Toronto, Empire, and Stratton. Ohio Route 7 through Jefferson County is also a part of the Ohio River National Scenic Byway that stretches 943 miles from Cairo, IL in the south to East Liverpool, OH in the north. State Route 7 in itself follows the Ohio River from Chesapeake to East Liverpool, then following parallel to the Pennsylvania State Line through Youngstown ending at Lake Erie at Conneaut in Ashtabula County.

West Virginia State Route 2 is the principal north/south corridor route, also running parallel to the east shores of the Ohio River Valley, through the northern panhandle of West Virginia directing intra-regional traffic south to Interstate 70 in Wheeling, WV and north to Ohio and Pennsylvania, by way of US Route 30, in Chester, WV. The West Virginia Department of Transportation maintains WV-2 primarily as a two-lane facility throughout Brooke and Hancock counties with the exception of four segments, Commerce Street in Wellsburg, Follansbee-Weirton Road north of Follansbee, Main Street in Weirton, and New Cumberland-Newell Road adjacent to Mountaineer Park in northern Hancock County. Presently, the State Highway carries traffic volumes ranging from 7,900 vehicles daily with 8.5% trucks at the Brooke/Ohio County Line to 21,000 vehicles daily through the north end of the City of Follansbee, WV. State Route 2 enters Brooke County from the south at the Ohio County Line connecting the communities (from south to north) Beech Bottom, Wellsburg, Follansbee, crossing into Hancock County in Weirton, continuing north through New Cumberland, Newell, and Chester. Route 2 terminates at US Route 30 in Chester (Hancock County) at the foot of the Jennings Randolph Bridge, the most northern reach of the State of West Virginia. West Virginia 2 connects the study area to the West Virginia cities of Huntington, Parkersburg, and Wheeling.

Ohio and West Virginia completed construction of United States Route 22 as a four-lane interstate-type highway in 1993. The US route enters Jefferson County from the west at the Harrison County Line east of Hopedale, OH, crossing the Ohio River into West Virginia by way of the Veterans Memorial Bridge at Steubenville, OH. The route then generally follows the Brooke/Hancock County Line through Weirton, WV exiting the region to the east into Pennsylvania. From west to east, US Route 22 connects the incorporated areas of Bloomingdale, Wintersville, and Steubenville in Ohio to Weirton, West Virginia. US-22 connects the Weirton-Steubenville, WV-OH Urban Area to Pittsburgh, PA in the east and to Columbus, OH (via US Routes 250/36 Ohio Route 161) in the west. Overall, US-22 extends from Cincinnati, OH to the New York City area in the east. Daily traffic traveling along US-22 in Brooke and Jefferson counties range from 9,270 vehicles at the Harrison/Jefferson County Line to 24,000 vehicles at the Pennsylvania / WV State Line in Weirton.

Another primary corridor is State Route 43 (OH-43). Beginning at State Route 7 in Steubenville, OH-43 directs traffic east to west through Jefferson County, then upon entering Carroll County, travels northward through the Canton/Akron Metropolitan Area, terminating in Cleveland, Ohio. In Jefferson County, OH-43 serves as a Principal Arterial, built parallel to and formerly designated as US-22 through Steubenville and Wintersville. In Steubenville, OH-43 is addressed as Washington Street from State Route 7 moving west through the city's lower Central Business District (CBD) to the top of Washington Street Hill where the state route changes address to Sunset Boulevard. At Wintersville, OH-43 becomes Frank Layman Boulevard and then Canton Road where it turns in a northwestern direction at the US-22 Interchange toward Carroll County. State Route 43 carries an average daily traffic in Jefferson County ranging from

3,060 vehicles in the western edge of the county in Amsterdam at the Carroll county Line, up to 21,300 vehicles on the Sunset Boulevard section in Steubenville.

OHIO RIVER HIGHWAY BRIDGES IN THE METROPOLITAN AREA

The BHJ geographic area is a two-state metropolitan area (Ohio and West Virginia) divided by the Ohio River. The Ohio River flows 43.7 miles through the metropolitan area starting at the Pennsylvania State Line (Beaver County-Hancock County, PA-WV; Ohio River Mile 40.0) and ending at the Jefferson/Belmont County, OH line (Ohio River Mile 83.7). Therefore, highway bridges over the Ohio River are a critical element of inter-region and interstate highway travel through the three-county region. Presently, the area-wide bridge network is comprised of five (5) highway bridges. The northern most bridge is the Jennings Randolph Bridge at Ohio River Mile 42.7. It connects Chester (in Hancock County, WV) to East Liverpool (in Columbiana County, OH) by way of US Route 30 (known nationally as the Lincoln Highway). Next in line is a privately owned span known as the Newell Toll Bridge. It also links East Liverpool, OH to Hancock County, WV, 1.70 river miles downstream (Ohio River Mile 44.4) of the US-30 Bridge approximately 500-feet east of the unincorporated community of Newell, WV. Situated at Ohio River Mile 66.4, the largest Ohio River Bridge in the region is the Veteran's Memorial. This structure carries US Route 22 from Steubenville, OH to Brooke County adjoining Weirton, WV. The fifth Ohio River crossing is the Market Street Bridge (WV-2 Spur; Ohio River Mile 68.0), 1.5 miles downstream from the US-22 Bridge. The oldest bridge in the region traversing the Ohio River, the Market Street Bridge connects the Steubenville, OH Central Business District (CBD) to Brooke County, WV at WV-2 roughly 3,300-feet north of Follansbee, WV. The next highway bridge over Ohio River is the Fort Henry Bridge in Wheeling, WV outside the BHJ Region. The Fort Henry carries Interstate Route 70 (I-70) crossing at Ohio River Mile 90.2, approximately 22.2 river miles south of the Market Street. Table 2 lists each Ohio River Bridge, their respective connecting route, Ohio River Mile posting, and relative distance from the Veterans Memorial Bridge, the core of the Weirton-Steubenville, WV-OH Urbanized Area.

Table 2 Regional Highway Bridges

Bridge	Connecting/Route	Ohio River Mile Post (miles)	Distance from US22 Veterans Memorial Bridge (miles)	Annual Average Daily Traffic Count (veh. /day - yr.)
Jennings Randolph Bridge	U.S. Route 30 Chester/East Liverpool	42.7	23.8	18,000 - 2019
Newell Toll Bridge	WV-2 to East Liverpool	44.4	22.1	6,450 - 2019
Veterans Memorial Bridge	US-22 Weirton/Steubenville	66.5	0.0	36,728-2019
Market Street Bridge	WV-2 SPUR/Market St Steubenville/WV-2	68.0	1.5	7,490 - 2019
Fort Henry Bridge Ohio County, WV/Belmont County, OH	Interstate 70 Wheeling/Bridgeport	90.2	23.7	23,800 - 2019

Jennings Randolph Bridge

The Jennings Randolph Bridge replaced the former Chester Bridge first constructed in 1896 for the Steubenville, East Liverpool, and Beaver Valley Traffic Company. A suspension-type structure with a center span of 705 feet, the bridge had a roadway width of 20 feet with a 6-foot 3-inch sidewalk on the downstream side. Rebuilt in 1937, the State Bridge Commission of Ohio purchased the Chester Bridge in September 1938 operating the bridge as a toll facility until September 1951 when the bridge commission removed the tolls. Following the “Silver Bridge” disaster in 1967, Ohio placed a load limit of two tons on the Chester Bridge, limiting the bridge’s capacity to all but passenger cars thereby excluding truck traffic over the Ohio River. This forced all heavy commercial traffic to use the Fort Steuben Bridge to travel south in Steubenville-Weirton, travel north to the next bridge in Shipping port, Pennsylvania, or avoid the area all together. After further deterioration, engineers closed the bridge in May 1970 followed by demolition a year later leaving an even more serious impendence to travel across the Ohio River in northern Hancock County.

Finally, in 1977, the West Virginia Department of Transportation completed construction of the Jennings Randolph Bridge. The bridge once again continued the connection of US Route 30 over the Ohio River from East Liverpool, OH to State Route 2 in Chester, WV (in Hancock County) that was gone for more than seven years. The Jennings Randolph is a symmetric single-span steel through Pratt Truss. Measuring 750 feet in length between the centerline of the piers and a vertical clearance of 30 feet at the end portals, this bridge is the second longest simple-truss span in the world. The east approach (from the West Virginia shore) to the truss span is comprised of two steel girders and eight stringer spans of various lengths amounting to approximately 1300 feet. The bridge decking is 64 feet 8 inches wide with a curb-to-curb width of 62 feet allowing for four traffic lanes separated by a concrete barrier. The surface is a composite decking 7.5 inches thick with a 1.5-inch concrete overlay.

The West Virginia Department of Transportation is responsible for all maintenance capital improvements on the bridge’s main structure over the Ohio River, while the Ohio Department of Transportation maintains the ramping to the bridge on the Ohio shoreline. An ODOT Average Daily Traffic survey

indicated 15,830 vehicles, including 1,170 heavy trucks (7.39%), traveled across the Jennings Randolph Bridge in 2006.

Newell Toll Bridge

The Newell Bridge, constructed in 1905 at a cost of \$250,000, has always served as a privately owned and operated toll bridge. Continuously operated by the Newell Bridge and Railway Company, the bridge first operated as a street railway line until the late 1930's. Today, according to a 2015 traffic count study conducted by BHJ, this two-lane steel suspension bridge carries an average daily traffic of 6,000 vehicles per day over the Ohio River between Newell, WV and East Liverpool, OH. A suspension-type bridge, the structure has a center span of 750 feet with an end span of 232 feet 9 inches on the West Virginia side and an end span of 387 feet 9 inches on the Ohio side. An additional through-truss approach span totaling 128 feet connects the Ohio end span to the Ohio abutment. The bridge roadway width is 20 feet 10 inches with a 6-foot walkway on the downstream side. In September 1954, a 5-inch deep steel-grid floor replaced the timber planking. Vertical clearance on the bridge is 13 feet 6 inches and the structure's capacity is 10 tons gross weight. Engineered and built by the Dravo Company, the Newell Bridge acted as a detour route for US Route 30 for more than seven years from 1970 after the State Commission of Ohio demolished the first Chester Bridge until 1977 when West Virginia completed construction of the Jennings Randolph Bridge.

Veterans Memorial Bridge

The Veterans Memorial Bridge (US-22), the newest bridge structure within the Metropolitan Area, crosses the Ohio River between Steubenville, Ohio and Weirton, West Virginia. Constructed as a US Route 22 replacement of the Fort Steuben Bridge, the Veterans Memorial opened to traffic on May 1, 1990. In development for more than 30 years, the bridge construction costs exceeded slightly more than \$70 million. Engineered by the Michael Baker Corporation, many considered the Veterans Bridge design unlike any other in the world. While the Veterans Bridge was under construction, only three cable-stayed steel girder trusses existed outside of Europe or Japan: Sitka, Alaska; Luling Louisiana; and Quincy, Illinois.

Named by a December 1988 Highway Commissioner Order, the Veterans Memorial is a cable-stayed suspension bridge consisting of a segmented deck of steel girders with cast-in-place concrete. From above the deck at the main pier rises a single 360-foot inverted Y-shaped tower from which 26-paired cables radiate (the longest measuring 800 feet) to connect the tower to the deck for vertical support. The entire bridge is 1,964 feet long with six 12-foot lanes, four through-traffic lanes, and two acceleration/deceleration lanes. In all, amounts of material used to erect the span include nine million pounds of structural steel, 3.4 million pounds of reinforcing steel (rebar) and 15,000 cubic yards of concrete. The National Steel Bridge Alliance lists the Veterans Memorial Bridge ranks as the 65th longest Cable-Stayed Steel Girder Bridge in the world.

Presently, over 34,000 vehicles cross the Veteran's Memorial Bridge daily. The West Virginia Department of Transportation owns and maintains the Veteran's Memorial Bridge with limited cost sharing for routine maintenance from the Ohio Department of Transportation.

Market Street Bridge

The Market Street Bridge (WV-2 Spur) is a steel suspension bridge that extends from the west at the foot of Market Street in the Steubenville, OH CBD to the east at West Virginia State Route 2. The West Virginia Department of Transportation is the sole owner of the bridge and is responsible for all upkeep and capital improvement costs to maintain the superstructure. The Steubenville Bridge Company was the

first owner of the bridge, who in turn contracted with the Ohio Steel Erection Company to complete construction in 1904. Built originally to carry light trolley traffic, the Market Street Bridge consists of twelve (12) spans stretching to an overall length of 1,794 feet. The bridge has a total suspended length of roughly 1,200 feet with the main suspension measuring a little more than 700 feet. The roadway width is slightly less than 21 feet, and there is a 6-foot sidewalk on the downstream side of the bridge. The State West Virginia purchased the Market Street Bridge 1941 and continued toll collections until 1953.

Historic documents indicate that Hermann Laub, a Swiss native who migrated to the United States in 1880, is the original architect of the Market Street Bridge. In his lifetime, Laub built several bridges over the Ohio including the Newell Bridge. During his bridge building career, he established his own consulting office in Pittsburgh, PA. Until his death in 1918, Hermann Laub was the bridge engineer for the Commonwealth of Pennsylvania. In 1922, David Steinman (later the engineer for the Mackinac Bridge in Michigan) designed repairs to increase the bridge's load-bearing capacity.

Over the years, the bridge has undergone several reconstructions beginning in 1922 when the top chord broke in two places under the weight of freight streetcars, then in 1941 when the State of West Virginia purchased the bridge, and in 1953 when the state removed tolls. The 1941 renovation included rehabilitation of the towers and reconstruction of the deck flooring. Between 1979 and 1981, the West Virginia Department of Transportation spent more than \$5 million to install new decking (a lightweight open-grid steel bridge flooring system), replace the majority of the floor stringers, strengthen the floor beams, install new roadway lighting, and repaint the entire bridge structure. The cross bracing in the suspension span towers was also modified, and three of the piers were repaired. During the 1979 to 1981 reconstruction, work plans required closing the Market Street Bridge intermittently thereby forcing nearly 50 percent more traffic onto the Fort Steuben Bridge. Prior to the 1981 rehabilitation, WVDOT bridge engineers downgraded the posted weight limits from 13 tons to 3 tons. When contractors finished work in 1981, the Division of Highways raised posted limits to 13 tons until June 1993 when bridge inspection results submitted by Burgess & Nipple Ltd. of Parkersburg, WV recommended the present 5-ton weight limit. Shortly thereafter, the highway department installed 11-foot vertical restriction portals at each end of the bridge as a means to enforce the current weight limitations.

The West Virginia DOT closed the Market Street Bridge for major renovations from January 11 to November 12, 2010 and from March 14 to December 7, 2011. The approximately \$15 million dollar renovation project included repairs to the bridge towers, Ohio approach spans and trusses, cleaning and painting as well as installation of decorative lighting. The DOT also lowered the bridge clearance by a foot to prevent overweight vehicles from violating the bridge's 5-ton weight limit. The project contractor was Ahern & Associates of South Charleston, WV along with Panthera Painting of Canonsburg, PA (cleaning & painting) and Bayliss & Ramey of Dunbar, WV (bridge lighting).

Currently, the average traffic across the Market Street Bridge was 7,300 vehicles per day and restricted for truck traffic and any other vehicle over 5-ton limit. The recent inspection report placed this bridge on the Critical Deficiency List. Along with the normal wear and tear in lighting, color, the 2018 inspection report put the approach suspension spans, anchorages, approach truss, guardrail, suspended span sidewalks, railings all are in either poor or in critical condition. The bridge waterway adequacy is good with no excessive or restricted flows. Some minor amounts of drift are located along the channel edges.

Wellsburg Bridge (New Ohio River Bridge)

The West Virginia Division of Highways (WV DOH) and the Ohio Transportation Review and Advisory (TRAC) have committed funding for the Wellsburg Bridge over the Ohio River connecting WV-2 south of Wellsburg, Brooke County, WV and OH-7 in the south end of Brilliant, Wells Township, Jefferson County, OH. On September 23, 2015, the BHI Transportation Study Policy Committee (BHI) adopted Resolution 2015-9 adding the funding schedule to the BHI 2016-2019 Transportation Improvement Program (TIP). Titled as State Project Number X305 2/23, the estimated West Virginia share for

construction of the Wellsburg Bridge obligated to the amount of \$79,920,000. The WV DOH revised the construction estimate in January 2016 to \$98,941,000. On January 27, 2016, BHJ adopted Resolution 2016-2 adding the TRAC commitment of \$36,770,000. The Ohio TRAC has agreed to reimburse the WVDOH its share of the construction in ten equal annual payments of \$3,700,000 starting in State Fiscal Year 2017. Each state highway agency, West Virginia and Ohio, are responsible for building the connections on their respective shores up to the West Virginia and Ohio State line. The construction started in April 2018. A Design-Build Project, West Virginia will manage the qualification selection process and project construction. The estimated conclusion date is 04/01/2021 and currently ODOT-WVDOH both agencies are in middle of their construction phase. As part of alternative delivery method, the contractor Flatiron proposed building a tied-arch bridge that will be constructed offsite and delivered by barge to the project site for installation — a method that will accelerate project timetables. When completed, the bridge will connect Route 2 in West Virginia, near Wellsburg, to Route 7 in Brilliant, Ohio, providing a key and reliable artery for northern West Virginia and eastern Ohio communities. Project financing was made possible through a public-private partnership (PPP), involving Flatiron, WVDOT, the Ohio Department of Transportation, as well as federal highway funds.

LEGEND

- U.S. ROUTE
- OH STATE ROUTE
- WV STATE ROUTE
- POLITICAL BOUNDARY**
 - STATE
 - COUNTY
 - TOWNSHIP
- MUNICIPAL AREA
- CONSERVATION AREA
- RIVER & LAKES

DISCLAIMER:
This analysis and graphic are strictly an initial screening of available data. The user is responsible for further verification of this data and for additional disclaimers from the appropriate data source agencies.

BRIDGE CALLOUTS:

- NEWELL TOLL BRIDGE, NEWELL, WV**
WV-2 TO EAST LIVERPOOL, OH
OHIO RIVER MILE POST 44.4
- JENNINGS RANDOLPH BRIDGE (US-30)**
CHESTER, WV; WV-2 TO EAST LIVERPOOL, OH
OHIO RIVER MILE POST 42.7
- VETERANS MEMORIAL BRIDGE (US-22)**
WEIRTON, WV TO STEUBENVILLE, OH
OHIO RIVER MILE POST 66.5
- MARKET STREET BRIDGE (WV-2 SPUR)**
FOLLANSBEE, WV TO STEUBENVILLE, OH
OHIO RIVER MILE POST 68.0
- NEW OHIO RIVER BRIDGE (WELLSBURG BRIDGE)**
BROOKE CO, WV TO WELLS TWP JEFFERSON CO, OH
OHIO RIVER MILE POST 76

SOURCES: WWF, USGS, EPA, Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodast, yrelsen and the GIS User Community, Sources: Esri, DeLorme, USGS, NPS

PERFORMANCE MEASURES

Moving Ahead for Progress in the 21st Century (MAP-21), the national transportation program prior to the FAST-Act, established a series of national performance goals. MAP-21 transformed the Federal-aid highway program by establishing new requirements for performance management to ensure the most efficient investment of Federal transportation funds. Performance management increases the accountability and transparency of the Federal-aid highway program and provides for a framework to support improved investment decision making through a focus on performance outcomes for key national transportation goals, National Highway Performance, Highway Safety Improvement, Congestion Management, and Freight Movement. MAP-21 established national performance goals for the Federal-Aid Highway Program in seven areas:

- Safety - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads,
- Infrastructure Condition - To maintain the highway infrastructure asset system in a state of good repair,
- Congestion Reduction - To achieve a significant reduction in congestion on the National Highway System,
- System Reliability - To improve the efficiency of the surface transportation system,
- Freight Movement and Economic Vitality - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development,
- Environmental Sustainability - To enhance the performance of the transportation system while protecting and enhancing the natural environment, and
- Reduced Project Delivery Delays - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The FAST Act carries forward the performance goals established in MAP-21. In addition, it places an emphasis on the inclusion of the following items as part of the metropolitan planning process.

- Travel and tourism
- Resiliency and natural disaster risk reduction, and
- Intercity transit and transportation demand management

MEASURING SAFETY

All states are required to develop a Strategic Highway Safety Plan (SHSP) that uses crash data to identify the greatest causes of traffic crashes, serious injuries, and fatalities on public roads. A variety of state and federal safety agencies and private sector organizations developed Ohio's SHSP, which focuses on safety for all road users, including cars, trucks, trains, motorcycles, pedestrians, and bicycles. The Ohio Department of Transportation uses a GIS Crash Analysis Tool (GCAT) to produce spatially located data for MPOs such as BHJ for engineering and analysis reports. BHJ obtained the data shown in Figure 5 through GCAT and WVDOH organized the files to display Crashes per Mile on selected state highway segments in this region for Calendar year 2018.

MEASURING INFRASTRUCTURE CONDITIONS

Figure 6 will display Pavement Condition Ratings (PCR) of the federal-aid highway system in Jefferson County, OH with the active and future well pad locations. A user can easily download the through Ohio's Transportation Information Management System (TIMS) in a spatial format for display and analysis through a Geographic Information System (GIS). Having pavement condition data that accurately represents the condition of the pavement network will improve a public agency's ability to provide reasonable, timely, and reliable preservation and rehabilitation recommendations to best spend financial resources. BHJ also has GIS inventory files for bridges, culverts, traffic control devices, and guardrails in Jefferson County, OH. This map will indicate how the heavy truck traffic of the Gas and Well pad locations are affecting the pavement condition of the surrounding roads and significantly reducing their longevity.

CONGESTION, SYSTEM RELIABILITY, AND FREIGHT MOVEMENT

Figure 7 shows Average Daily Truck Traffic (AADT) on the designated Freight Network in BHJ Region. BHJ maintains an extensive database of traffic count data for Brooke and Hancock counties in West Virginia as well as Jefferson County, OH. This map is developed from the Big data database of @Streetlight and verified by the locally collected traffic data.

Figure 5 Traffic Crash Scenario 2018

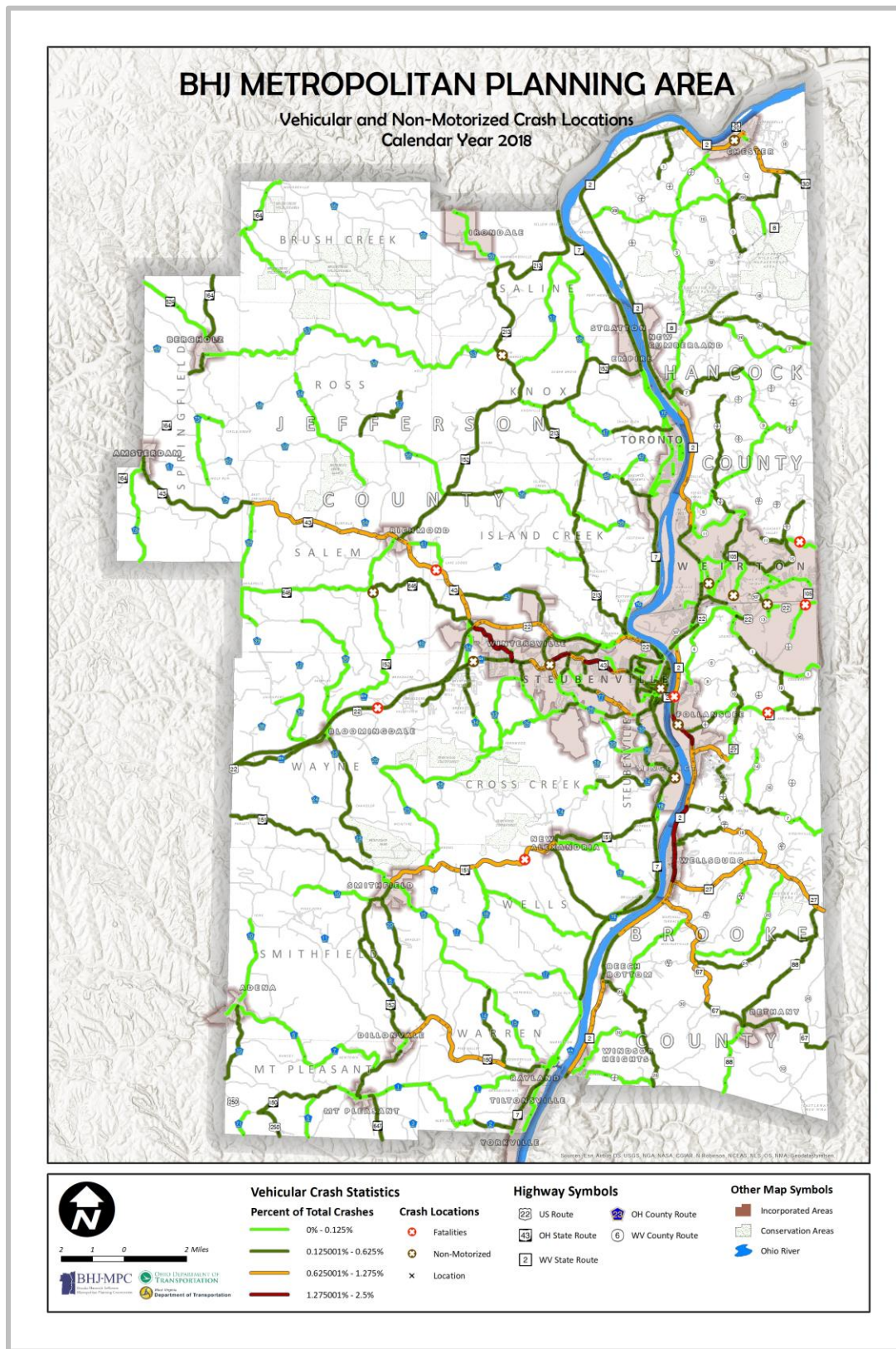


Figure 6 PCR Condition and Well Pad Location Jefferson County, Ohio

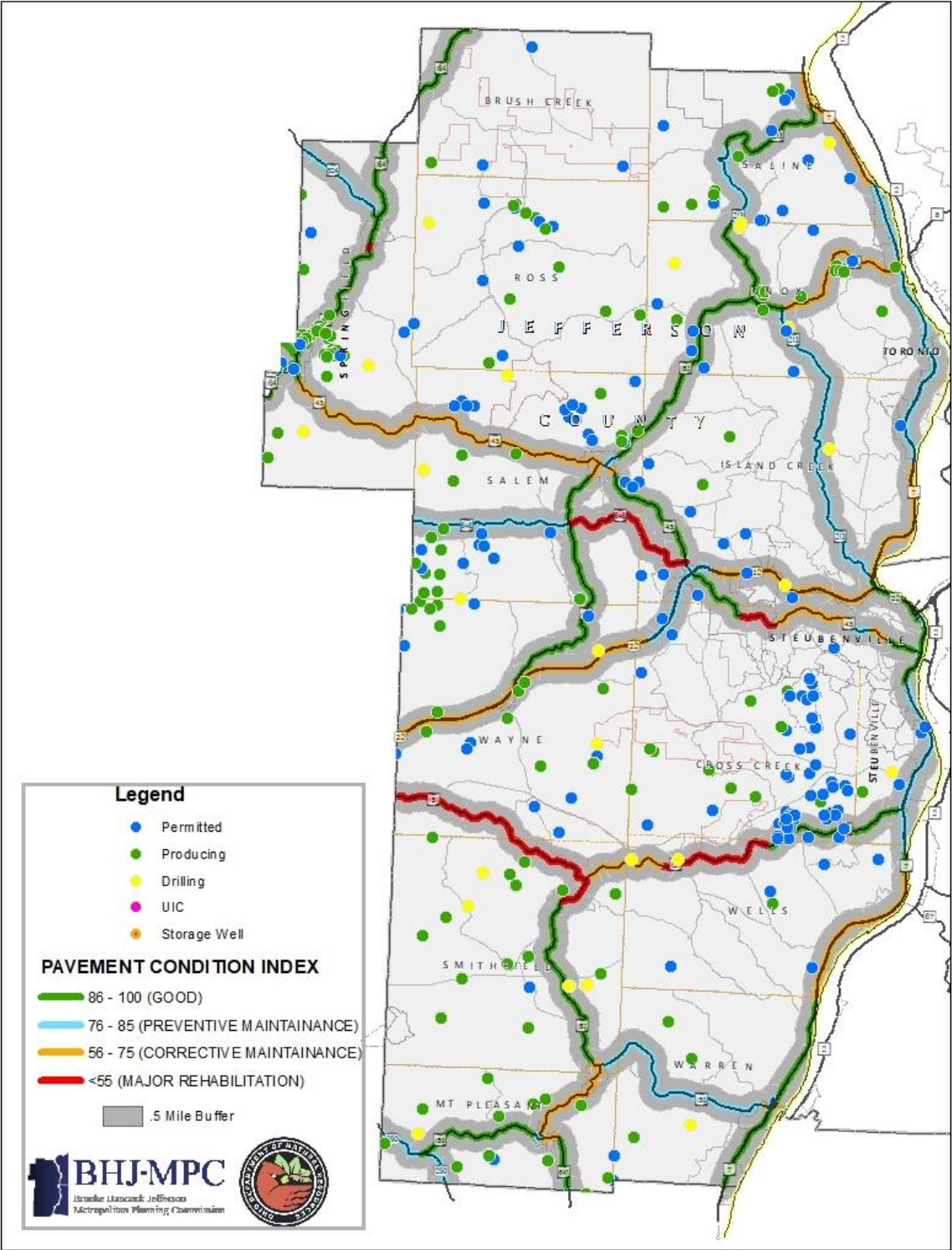
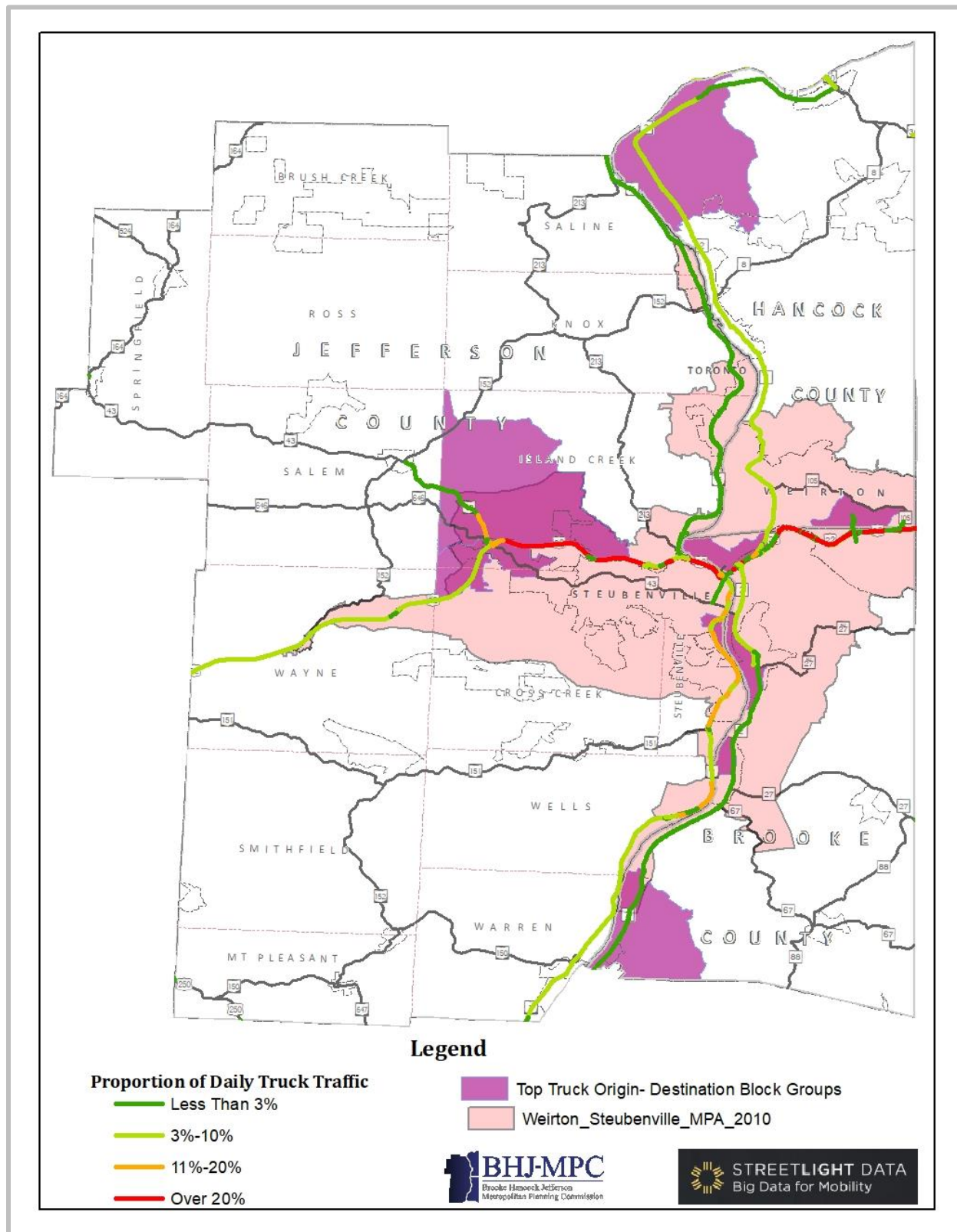


Figure 7 Major Freight Route and O-D Locations in BHJ Region



SECTION 7: PROJECT CONSIDERATIONS

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This section outlines the BHJ Metropolitan Region's 20-Year Transportation needs. The BHJ Metropolitan Planning Organization (MPO) developed these projects and programs through data collection, technical analysis, and input from public meetings for projects.

BHJ MPO is comprised of the Transportation Study Policy Committee, the Technical Advisory Committee, and professional staff. The following goals and objectives guided project selection process:

1. Design an efficient **Mobility Management Program** with cooperation with the local public transportation providers and other human service transportation providers that are involved in elderly, people with disability, and employment related transportation. Encourage expanded and improved public transportation services, and app-based ride systems such as Uber and Lyft in the community. Increase **Ride Share Programs** such as work-related carpool and vanpool services.
2. Prepare a **Financially Responsible Plan** that represents the region's fair share of federal and state economic resources and political importance. The plan should maintain existing infrastructure rather than build new corridors of travel into and out of the region.
3. Develop **Local Road Safety Plans** that identifies the most vulnerable locations of traffic crashes, makes roads safer for the community, and ensures the effective use of available financial resources.
4. Develop livable, environment-friendly communities with adequate **Active Transportation and Recreational Facilities**. This involves creating a sustainable **Bicycle and Pedestrian Network** that promotes a healthy quality of life, discourages automobile dependence, and supports a growing tourism economy. The Bicycle and Pedestrian Network should enhance the quality of community and family life, stimulate alternative commuter routes, a growing workforce, and promote opportunities for economic development.
5. Focus on sustainable, good-paying, environment-friendly business development promoting **Brownfield Redevelopment, Intermodal Transportation Linkages** (i.e. air, highway, rail, and water), and enhance **Regional Freight Movement**. Using the already available highway, rail, and water ways that the local area has access to, bringing in new business to take over existing past industrial locations will not only create jobs but clean up the soil, water, and local environment by reusing and revitalizing areas that have been abandoned and left in poor condition.

PROJECTS ACCOMPLISHED IN YEARS 2016 THROUGH 2019

The initial step in the plan evaluation process is identifying projects or programs completed since the previously adopted Long Range Transportation Plan Update (LRTP) in 2016. The Tables below are a summary of those transportation projects accomplished in State Fiscal Years 2016 through 2019. Once identified, the next step is to either remove these projects or programs from the plan or update the project phase.

TABLE 1 JEFFERSON COUNTY PROJECTS COMPLETED 2016-2019		
LRTP ID #	PID #	Veterans Memorial Bridge Access Improvements
OBR-01	81314	Bridge System Study Priority #1 - Improve access to Veterans Memorial Bridge by capacity additions at SR07 & University Blvd intersection, redesign of SR07/US022 Interchange ramping, and relocation of marina access road.
LRTP ID #	PID #	Lawson Ave Bridge over SR43 (Washington St) Steubenville
OBR-06	94161	Rehabilitate bridge by removing existing deck and replacing on existing beams over State Route 43 and replacement of concrete roadway approaches.
LRTP ID #	PID #	Titanium Way Bridge - Toronto - Municipal Bridge Replacement
OBR-08	86047	Remove and replace Titanium Way bridge over Jeddo Run and Jeddo Run Rd. Work includes construction of 400-ft walkway adjacent to curb on west side of road and bridge, begin at Titanium Metals parking and ending at Valley View Place and improve Titanium Way/Franklin Ave intersection to increase radii for truck traffic.
LRTP ID #	PID #	Replace Bridge SPR-C75A-0.15 over Yellow Creek - Springfield Township
OBR-12	86475	Replace Bridge over Yellow Creek east of OH-164 South of Bergholz in Springfield Township.
LRTP ID #	PID #	Replace Bridge WAR-C1-5.68 over Little Short Creek - Warren Township
OBR-13	89469	Replace Bridge over Little Short Creek on existing line and grade 2.00 miles south of OH-150 in Warren Township.
LRTP ID #	PID #	Lovers Lane and Fort Steuben Drive Intersection Improvement - Steubenville
OH-12	90234	Improve intersection capacity at Lovers Land Rd and Fort Steuben Dr in the vicinity of the Ft. Steuben Mall. Work includes widening for left turn lane or construct a roundabout intersection, full-depth pavement replacement on Lovers Lane, improve Fort Steuben Drive approach, new curbs, sidewalks, curb ramps and pavement markings.
LRTP ID #	PID #	BEL-7-7.80 Interchange Highway Lighting Replacement (Various Locations)
OH-43	101884	Interchange highway lighting replacement project at SR 7 at SR 872 interchange, SR 7 at the south Brilliant interchange and at SR 7 at the north Brilliant southbound off ramp.
LRTP ID #	PID #	JEF-213-0.00 Traffic Signal Renovation/Intersection Improvement
OH-44	99960	Replace the traffic signal hardware at SR 7 & SR 213 and at the US 22 ramps & SR 213 in Jefferson County. Install a left turn lane on the US 22 Ramp E approach at the SR 213 & US 22 Ramp E/F intersection.

TABLE 2 BROOKE/HANCOCK COUNTY PROJECTS COMPLETED 2016-2019

LRTP ID #	PID #	Hancock Co - CO208 from Log 0.92 to 6.35
WVH-23	S315 208 00543 00	Resurface CO-208 (Allison Rd) in Hancock Co from CO-5 (Locust Hill Rd) to CO14 (Middle Run Rd)
LRTP ID #	PID #	Hancock Co - CO11 from Log 1.45 to 1.71
WVH-24	S315 11 00145 00	Install guardrail on CR11 (Kings Creek Rd) at Patricia Ave
LRTP ID #	PID #	Hancock Co - CO7 from Log 1.00 to 3.23
WVH-25	S315 007 00100 00	Resurface with thin overlay asphalt CO7 (Hardin Run Rd) from West of CO7/1 (Mayhew Rd) to west of CO26 (Florence Rd)
LRTP ID #	PID #	Hancock Co - CO3 from Log 0.65 to 1.43
WVH-26	S315 3 00065 00	Resurface CR-3 (Washington School Rd) in Hancock Co from Jct of CR3/5 (Six Rd) to Jct CR-12 (Shepherd Valley Rd)
LRTP ID #	PID #	Brooke Co - SR-27 from Log 0.12 to 1.30
WVH-27	S305 027 00012 00	Resurface with thin overlay asphalt from Wellsburg Corp Line to CO 27/1 (Tar Run Rd)
LRTP ID #	PID #	Brooke Co - SR-27A from Log 0.40 to 1.40
WVH-29	S305A0 2700040	Resurface Eldersville Rd from Follansbee Corp Line to CR 7/1 (Rockdale Rd)
LRTP ID #	PID #	Brooke Co - US0022 from Log 2.78 to 2.82
WVH-30	S305 22 27800	Slide repair on US-22 eastbound adjacent to Harmon Creek Exit Ramp in Weirton
LRTP ID #	PID #	Brooke Co - SR0002 from Log 0.00 to 6.83
WVH-31	S305 002 00000 00	Resurface WV-2 from Brooke/Ohio County Line to WV-67 (Bethany Pk)
LRTP ID #	PID #	Brooke Co - CR0001 from Log 2.13 to 4.13
WVH-32	S305 1 0021300	Resurface CR1 (Harmon Creek Rd) 0.50 miles west of CR-1/2 (Sandag Rd) to Jct CR-1/7 (Halls Rd)
LRTP ID #	PID #	Hancock Co - US30 from Log 0.52 to 1.14
WVH-34	S315 030 00052 00	Unbonded Concrete, Joint Repair and Concrete Overlay from Chester Corp Line to CO 30/6 (Old Route 30)
LRTP ID #	PID #	Hancock Co - US30 from Log 1.21 to 2.53
WVH-35	S315 030 00121 00	Resurface US 30 from CO 30/6 (Old Route 30) to WV 8
LRTP ID #	PID #	Hancock Co - WV2 from Log 10.90 to 13.20
WVH-36	S315 002 01090 00	Resurface with thin overlay asphalt WV2 1.80 miles north of New Cumberland 0.75 miles south of CR 208 (Race Track Rd)

LRTP ID #	PID #	Brooke Co - CO-32/3 from Log 1.64 to 1.77
WVH-37	S305 323 00164 00	Replace Long Run Bridge over Buffalo Creek south of WV67 East of Bethany
LRTP ID #	PID #	Brooke Co - Panhandle Trail
WVTA-08	U386 PANHA 1 00	Construct Trail Extension and Resurface Existing Trail

**PROJECTS LISTED IN THE TRANSPORTATION PLAN UPDATE PROGRAMMED IN THE
FY 2020-2023 TRANSPORTATION IMPROVEMENT PROGRAM**

The next step is identifying projects or programs program in the current Transportation Improvement Program (TIP) for Fiscal Years 2020-2023. The following table is a summary of those transportation projects.

TABLE 3 JEFFERSON COUNTY PROJECTS PROGRAMMED 2020-2023		
LRTP ID #	PID #	Wellsburg Ohio River Bridge Jefferson County, OH to Brooke County, WV
OBR-01	79353	Bridge System Study Priority #2-Construct a new Ohio River Bridge connecting Ohio State Route 7 to West Virginia State Route 2 between Jefferson County, OH and Brooke County, WV. Ohio's share of project costs.
LRTP ID #	PID #	ODOT Bridge System Preservation
OBR-04		Projected funding available to ODOT to adequately maintain, resurface, and major reconstruction projects in Jefferson County not identified in this Plan.
LRTP ID #	PID #	Replace Bridge CRO-C74-1.91 over Cross Creek - Cross Creek Township
OBR-11	89323	Replace Goulds Road Bridge over Cross Creek 0.24 Mile south of CH-28 West of Mingo Jct in Cross Creek Township.
LRTP ID #	PID #	Replace Bridge ROS-C53-1.46 over Brush Creek - Ross Township
OBR-17		Replace Truss Bridge in Ross Township.
LRTP ID #	PID #	SR43 (Sunset Blvd) & Lovers Lane Intersection Improvement
OH-19	90235	Capacity and safety improvements at Sunset Blvd and Lovers Lane Road intersection by lengthening left turn lanes and constructing right turn lanes. ODOT Highway Safety Program.
LRTP ID #	PID #	SR 43 Curve Improvement - JEF-43-21.15
OH-32	100049	Realignment of sharp reverse curve on SR43 in the Village of Amsterdam
LRTP ID #	PID #	Lovers Ln from Fort Steuben Dr to SR43 (Sunset Blvd) - Steubenville
OH-36	109308	Lovers Lane Rd from Fort Steuben Dr to OH-43 (Sunset Blvd). Widen to 12' Lanes. Full depth pavement replacement, new curb, sidewalks, curb ramps, and increase turn radii on intersecting streets. Rebuild curbs, sidewalks and ADA ramps.
LRTP ID #	PID #	ODOT State Highway and Bridge System Preservation

OH-40		Projected funding available to ODOT to adequately maintain State Highways and Bridges including Major Reconstruction Projects in Jefferson County not line item identified in this Plan.
L RTP ID #	PID #	BHJ Annual Rideshare Program
ORS-03	99673	Congestion Management Air Quality Project
L RTP ID #	PID #	Expand Regional Park & Ride Facilities in Jefferson County
ORS-04	102055	This project is the establishment of a Park and Ride Parking Lot off of SR150A and SR7 in Rayland. Includes lighting and fencing.
L RTP ID #	PID #	Expand Regional Park & Ride Facilities in Jefferson County
ORS-07	109503	Construct new park and ride facility at the location of the new Wellsburg Bridge in Brilliant along SR7.
L RTP ID #	PID #	Public Transportation - Steel Valley Transit Authority (SVRTA)
OT-01	99159	Annual Operating Assistance
L RTP ID #	PID #	Jefferson County Bike/Ped Guidelines
OTA-11	99937	Development of Bike/Ped Route Implementation Guidelines
L RTP ID #	PID #	Shared Use Path - Marina to 4th St - Along SR 7 - Steubenville
OTA-14	105885	Construct a Bike/Ped shared use path along SR 7 from North 4th St to Labelle Ave to connect to the Steubenville Marina.
L RTP ID #	PID #	Replace Bridge SR 164 5.630, .8 miles South of SR 524
	96440	Replace existing bridge with new single span steel beams structure.
L RTP ID #	PID #	Replace Bridge SR 213 18.440, 0.11 miles South of SR 7
	96599	Replace existing box beam superstructure with new composite box beam superstructure. Some profile adjustment will be required to maintain the Vertical Clearance above the Railroad.
L RTP ID #	PID #	Resurface SR 150, Dillonvale to SR 7
	100675	General System Minor Rehab.; Resurfacing SR 150 from Dillonvale to SR 7
L RTP ID #	PID #	Resurface SR 213, SR 7 to SR 152
	100677	General System Minor Rehab.; Resurfacing SR 213 from SR 7 to SR 152, including fine graded polymer asphalt overlay, pavement repairs and pavement markings
L RTP ID #	PID #	Resurface SR 646 4.310, SR 152 to SR 43
	100680	General System Minor Rehabilitation; Resurfacing of JEF-646 including asphalt overlay, pavement repairs and pavement markings
L RTP ID #	PID #	Culvert Replacement, SR 151 15.24
	101053	Culvert Replacement on SR 151, 0.1 miles west of Moody Drive.
L RTP ID #	PID #	Bridge Preservation, JEF SR 164 4.220
	101769	Repair structure JEF-164-0422 (SFN 4103009) by removing the existing wearing surface and placing a new rigid overlay. The project will also replace the slab edges and upgrade the bridge railing.
L RTP ID #	PID #	D11 Federally Mandated Sign Upgrade for Rural Curves
	102599	This project is for the federally mandated sign upgrade for rural curves on two lane roads throughout in Holmes, Harrison, and Tuscarawas counties.
L RTP ID #	PID #	Resurface JEF SR 43 12.190, Richmond to Amsterdam

	105278	General System Minor Rehabilitation; Resurfacing SR 43 from Richmond to Amsterdam, including asphalt overlay, pavement repairs and pavement markings
LRTP ID #	PID #	Landslide Repair SR 7 10.38 Ramp B
	106995	Landslide repair by drilled shaft retaining wall. On Northbound Ramp B in Brilliant, 0.2 miles south of merge point
LRTP ID #	PID #	Pavement Rehab, Mine Subsidence, SR 164 9.400
	106996	Mine subsidence pavement repair. 1 mile south of Columbiana County Line.
LRTP ID #	PID #	Bridge Preservation JEF SR 7 (20.59)(20.84)
	107648	Rehabilitate two structures. Replace continuous concrete slab superstructure on bridge JEF-7-2059. Replace deck on existing steel beams made continuous with new deck and convert abutments to semi-integral on bridge JEF-7-2084. 1.75 miles North of SR 213.
LRTP ID #	PID #	Bridge Preservation JEF SR 7 (33.46)(33.80)
	108510	Repair structures JEF-7-3346 (SFN 4101626) and JEF-7-3380 (SFN 4101650) by removing the existing wearing surfaces and placing new rigid overlays. The project will also replace approach slabs, expansion joints and backwalls. 0.75 miles South of Columbiana County Line.
LRTP ID #	PID #	Signal Upgrade JEF CR 2 2.67, Yorkville
	108798	Signal upgrade in Yorkville at the intersection of JEF CR 2 (Public Rd) and Market St/William St.
LRTP ID #	PID #	Bridge Preservation, JEF SR 7 13.690
	109309	Rehabilitate Structure JEF-7-1369 (SFN 4100751) by replacing the superstructure and repairing the piers and abutments. The abutments will be converted to semi-integral type and the bearings will be replaced. 1.70 miles North of SR 151.

TABLE 4 BROOKE/HANCOCK COUNTY PROJECTS PROGRAMMED 2020-2023

LRTP ID #	PID #	Brooke Co - CR-2/23 from Log 0.00 to 0.20 (Wellsburg Bridge)
WVBR-02A	X305 2/23 00000 00	Construct Wellsburg Bridge over Ohio River between Well Twp, Jefferson County, OH and Brooke County, WV (Advance Construction Payback)
LRTP ID #	PID #	Brooke Co - Weirton Panhandle Trail
WVTA-01	U305 WEIRT 500	Design Trail for US Bike Route 50
LRTP ID #	PID #	Brooke Co - Beech Bottom Sidewalk Improvement
WVTA-09	U305 BEECH 200	Construct Sidewalks in Beech Bottom
LRTP ID #	PID #	Brooke Co - Long Run Bridge
WVBR-12	U305 323 16 400	Replace Bridge
LRTP ID #	PID #	Brooke Co - Roadway Striping

WVH-33	S386 STRIP 2000	Roadway Striping District 6; Install Pavement Marking Paint - NA 999
LRTP ID #	PID #	Brooke Co - D-6 Recall Striping
	S386 RECAL 2000	District 6 - District wide pavement markings
LRTP ID #	PID #	Brooke Co - US0022 from Harmon Creek to Pa State Line
WVH-28	S305 22 31700	Full Depth Concrete Joint Repair from Log 3.17 (Harmon Creek) to Log 5.89 (PA State Line), guardrail repair, and drainage
LRTP ID #	PID #	Brooke Co - US 22 Signing
	U305 22 00100	Renovate Signing along US 22 in Brooke County
LRTP ID #	PID #	Brooke Co - Weirton Park Dr Enhancement
WVTA-14	U305 WEIRT 400	Construct Sidewalks
LRTP ID #	PID #	Hancock Co - New Cumberland-WV2 Improvement (Design/Build)(Go Bond 2)
WVH-05	U315 262 000	Relocate West Virginia State Route 2 by constructing a multi-lane partial-access highway on a new alignment through New Cumberland, WV.
LRTP ID #	PID #	Hancock Co - Lincoln Heights HFST +1
WVH-40	S315 3011 900	Resurface Roadway

The following pages generally describe each transportation project considered in this plan classified by the following project categories:

- Ohio River Bridge
- Major/New Highway
- Highway System Preservation
- Congestion Management/Safety
- Bridge Preservation
- Regional Rideshare Opportunities
- Regional Bike & Pedestrian Development
- Regional Public Transportation Development

OHIO RIVER BRIDGE PROJECTS

The current bridge system in the Steubenville-Weirton Metropolitan Area has sufficient capacity to handle present traffic volumes; however, it has a number of significant deficiencies. Efforts to address these deficiencies require construction of a new bridge across the Ohio River south of Wellsburg, WV connecting to Brilliant, Wells Township in Jefferson County, OH.

OBR-2 / WVBR-02 Wellsburg Bridge over the Ohio River Connecting WV-2 South of Wellsburg, Brooke County, WV to OH-7 Brilliant, Wells Township, Jefferson County, OH

The second priority of the Phase 2 Report of the *BHJ Regional Bridge System Study* was to construct a new Ohio River Bridge south of Wellsburg, West Virginia. The report further recommended that the project proceed forward by initiating a Phase 3 Report to identify alternative bridge locations, initiate a design report, and begin environmental studies for a preferred alternative scenario.

WVDOT initiated a Phase 3 Report in 2008 and contracted with HDR Engineering, Weirton, WV. In June 2009, HDR submitted a Design Report for an Ohio River Bridge to provide a connection between WV-2 south of Wellsburg, Brooke County, WV, and OH-7 at Brilliant, Wells Township, and Jefferson County, OH. Figure 1, taken from the June 2009 report, defines the Project Study Area.

The Design Report reviewed seven conceptual crossing locations narrowing the list to three alternative crossing locations. The report then discussed advantages and disadvantages of the three alternatives including probable cost, navigation issues and environmental and geotechnical overviews for each alternative. Through a series of Public Meetings and discussions between Ohio and West Virginia DOT officials, WVDOT with ODOT concurrence selected a preferred alignment for further review. Figure 2 taken from a revised July 2011 submission by HDR, displays the preferred alignment for an Ohio River Bridge south of Wellsburg, WV.

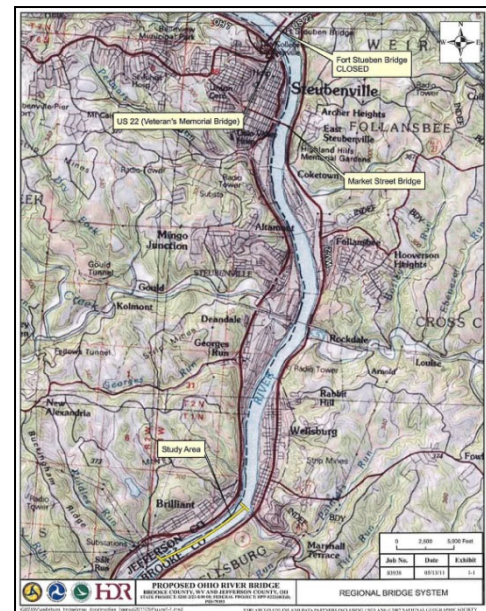


Figure 1 Project Study Area for Wellsburg Bridge

BHJ submitted an Ohio Transportation Review Advisory Council (TRAC) Application in June 2015 requesting funding for the Ohio share of the bridge project construction. The WVDOT provided an estimate of probable cost to construct the Wellsburg Bridge at \$125,445,000. The TRAC application listed the funding share split for construction as \$88.6 million by WVDOT and \$36.8 million by ODOT. In October 2015, the Ohio TRAC announced approval of the funding for Ohio portion of the bridge construction. ODOT will make yearly payments of \$3.7 million to WVDOT over 10 years per a mutual agreement. WVDOT will be the lead agency for construction and plans to solicit design-build proposals in late spring of 2016 with award of construction work anticipated to occur in the summer of 2016. WVDOT anticipates construction will take approximately four years. WVDOT plans to fund their portion of construction over a period of four years using a combination of Federal and State funds. To date, Ohio and West Virginia have both contributed \$600,000 each for the Preliminary Engineering Reports and have committed \$2.0

million and \$6.40 million respectively for detailed design. Ohio committed \$573,000 for right of way and utilities while West Virginia committed \$10.6 million for this project phase.

Currently the bridge project is under construction as of December 2019. Piers are being constructed in the Ohio River, the main span is being assembled off location to be barged in and raised in place once completed, excavation is mainly completed on the Ohio side and continues on the WV side. Estimated completion is mid-2021.

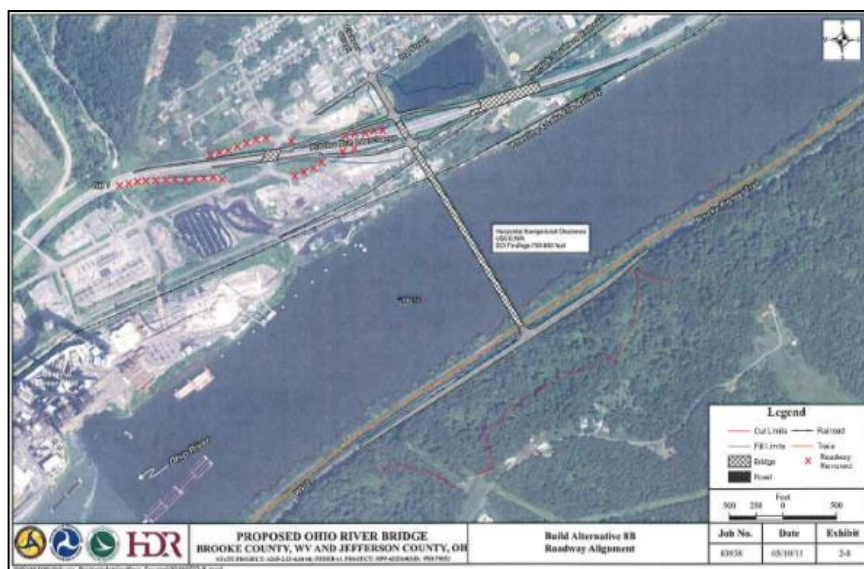


Figure 2 Preferred Build Alternative 8 B

OBR-3 / WVBR-03 New Ohio River Bridge from OH-43 (Washington Street) in Steubenville, OH to WV-2 in Brooke County, WV

The third priority listed in the Edwards and Kelcey Phase 2 Report of the *BHJ Regional Bridge System Study* was to construct a new Ohio River Bridge to connect West Virginia Route 2 with Steubenville at Washington Street. Currently, there is no funding available for this project. However, the region considers this location for a river crossing to be crucial its economic vitality. With the new bridge being constructed, the priority now shifts to whether the deteriorating Market Street Bridge just south of Washington Street would be rebuilt in its current location, negating need for a Washington Street Bridge, moved to Washington Street once it is shut down or torn down, or to repurpose the Market Street Bridge for Pedestrian and Bicycle use.

WVBR-04 New Ohio River Bridge from OH-7 Jefferson/Columbiana County to WV-2 Hancock County South of Chester, WV

In September 2002, HDR Engineering submitted to the West Virginia DOT a *Traffic Impact and Toll Study Proposed Ohio River Crossing* between Hancock County, WV and Columbiana/Jefferson County, OH. The study's purpose was to determine the amount of traffic that would use a new bridge spanning the Ohio River and "touching down" near the Mountaineer Race Track and Gaming Resort, located near Chester, WV. In addition to identifying a possible location for a new bridge, the study produced a conceptual cost estimate for the bridge, traffic analyses for the bridge connections, optimum toll rate, and toll rate potential for a 20-year planning horizon.

Figure 3 shows four conceptual bridge locations developed in the report. The study results determined Alternative D as the best potential for a bridge location with a conceptual cost estimate of \$66 million. The study determined an optimum toll rate of \$1.00 based on 20-year traffic trends. Further, based on anticipated costs, bond and interest rates, revenue, and operating costs over the 20-year horizon, the report concluded a shortfall of approximately \$29.1 million. In conclusion, tolls alone would not generate sufficient revenue to pay the \$66 million needed for construction. Currently, no funding is available for this project.

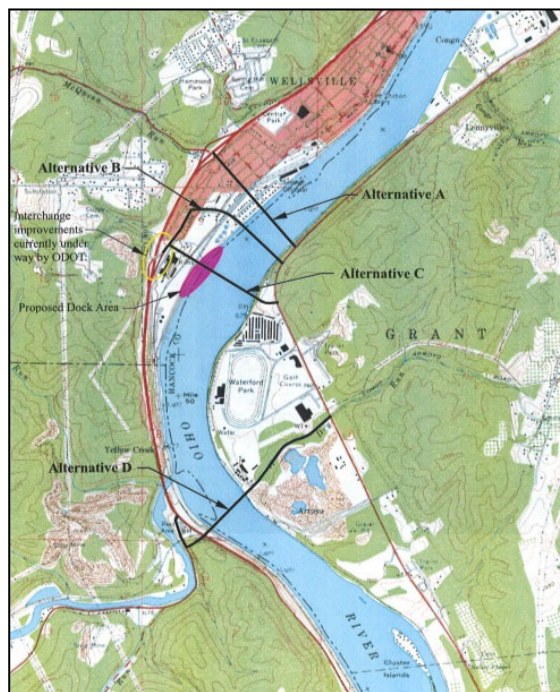


Figure 3 Conceptual Bridge Locations

OTA-10 / WVT A-07 Veterans Memorial Bridge Decorative Lighting

The proposed project is to construct decorative lighting to enhance the unique structural characteristics of the Veterans Memorial Bridge (U.S. Route 22) that travels roughly 1,964 feet over the Ohio River between Weirton, WV and Steubenville, OH. Decorative lighting will, during the evening hours, accentuate the bridge's majestic structural aesthetics, serve as a gateway for visiting motorists, and instill civic pride in Brooke and Hancock counties in West Virginia and Jefferson County, Ohio. The Veterans Bridge Lighting Project conceptual design is to spotlight the bridge's unique signature architecture; a single 360-foot inverted Y-shaped tower that rises from the bridge's center pier (located approximately 668-feet from the West Virginia shore abutments) and each of the 26-paired cables that radiate from the tower connecting to the bridge decking.

The Veterans Bridge Lighting Committee had secured \$600,000 to design and construct the project. Project funding was committed from a variety of sources with eight percent of the funding coming from Transportation Enhancement allocations through the West Virginia Division of Highways (WVDOT) and the BHJ Metropolitan Planning Commission with twenty percent of the funding through private donations collected by the Jefferson County Community Foundation. However, since the Bridge Lighting Committee has not successfully negotiated a Maintenance Agreement to maintain the lighting project and pay for the utility costs with the cities and counties on both sides of the river, this project has been placed into the unfunded project list.

OBR-19/WVBR-11

Browns Island stands in the Ohio River opposite of Weirton, WV and Costonia, OH. It is 250 acres in area and four miles long. It has a rich prehistory and is most noted for the Browns Island Petroglyph, now permanently inundated by the Ohio River. Traders spoke of passing the island on excursions down the Ohio River in 1765. Richard Brown, a Revolutionary soldier, acquired the island, which had been part of a land grant awarded to Benjamin Johnston and thus got the name Brown's Island (West Virginia Encyclopedia). The main land of Costonia, OH and Weirton, WV is connected with this island with two truss bridges, each in length of 1044 ft (OH) and 1312 ft (WV). This island has excellent potential to become a popular tourist destination of the Ohio Valley, but for that connectivity, specifically the maintenance or replacement (if required) of the existing bridges is a top priority. With that providing utilities and constructing access roads will also be another important part of this project.

These bridges are included into the Business Development Corporation of the Northern Panhandle's (BDC) Weirton Area Reuse Plan (WARP). Their intent is to redevelop sites for the former Weirton Steel facility as well as areas on Three Springs Drive. The intent is to focus on improving economic community development, transportation regional connectivity, and workforce development. Currently there is no funding available for this project. But future redevelopment of Brown's Island largely dependent on this project.

MAJOR/NEW HIGHWAY PROJECTS

Project classified as Major/New Highway Projects include construction programs that: (1) add capacity to the highway network, (2) have extraordinary costs, (3) a relocation of an existing highway or bridge, and/or (4) a major reconstruction of a functional transportation facility. These projects may represent the preservation of the existing transportation system or reconstruction of facilities to meet federal standards.

Ohio Project Considerations

OH-36 Improvements to Lovers Lane from Fernwood Road to State Route 43 (Sunset Boulevard); Steubenville, OH

Lovers Lane has insufficient roadway capacity due to narrow width. In addition, left turn movements to various driveways and minor cross streets as well as daily mail delivery vehicles block or delay daily through traffic throughout the entire corridor. Currently, Lovers Lane from Sunset Boulevard to Fort Steuben Drive is operating at LOS E and in the future may function at LOS F.

Due to construction costs and available funds, the City of Steubenville is planning to construct this project in four construction phases.

- Phase 1 – (Completed)Fort Steuben Drive and Lovers Lane Intersection Improvement
- Phase 2 – (Completed)Lovers Lane and SR43 (Sunset Blvd) Intersection Improvement
- Phase 3 – (Started)Fort Steuben Drive to SR43 (Sunset Blvd)
- Phase 4 - Sinclair Ave to Fort Steuben Drive
- Phase 5 – Fernwood Rd to Sinclair Ave

Consideration for the continued improvements of Lovers Lane should consist of the following alternatives:

- From Sinclair Avenue to Fort Steuben Drive reconstruct the existing roadway by full-depth pavement replacement and widen to permit two 12-foot lanes. Construction will also include curbs, walkways and curb ramps, as well as increased turn radii on certain intersecting streets.
- From Fort Steuben Drive to Sunset Boulevard reconstruct the existing roadway by full-depth pavement replacement and widen to permit two 12-foot lanes. Construction will also include curbs, walkways and curb ramps, as well as increased turn radii on certain intersecting streets.
- From Fernwood Rd to Sinclair Ave reconstruct the existing roadway by full depth pavement replacement and widen to permit two 12-foot lanes. Construction will also include curbs, walkways, and curb ramps, as well as increased turn radii on certain intersecting streets.

OH-36 Lovers Lane from Fernwood Rd to Sinclair Ave; Steubenville, OH

Phase 5 of Lovers Lane Improvements. This section of Lovers Lane has a roadway width of 19 feet, while left turn movements to various driveways and minor cross streets as well as the daily postal service delivering mail via truck (since there is no sidewalk for foot delivery) in the project area block or delay the through traffic. Project improvement should consist of reconstructing the existing roadway by full-depth pavement replacement; widen to permit two 12-foot lanes and also include curbs, walkways and curb ramps, as well as increased turn radii on certain intersecting streets.

OH-07 Reconstruct Ft. Steuben Drive/Mall Drive from Lovers Lane to John Scott Highway; Steubenville, OH

A narrow 40-foot wide, four-lane urban collector street, Ft Steuben Drive/Mall Drive directs traffic through the region's major commercial shopping area in the west end of Steubenville, OH. More than 13,420 vehicles travel on this city street to work or shop daily. In many instances, left turning vehicles block the through lane, there are no pedestrian walkways within the entire length of Ft Steuben Drive/Mall Drive, and finally, the route is a rapidly deteriorating concrete surface.

Considerations to improve Ft Steuben Drive/Mall Drive should consist of the following alternatives:

- Widen the entire length of the study area to 48-feet wide.
- Reconstruct the entire route at its current width and delineate median turn lanes at commercial driveways for left turn movements.
- Formulate a pedestrian and traffic calming plan to increase the attractiveness of the entire commercial shopping area.

Emphasis will be placed on increasing the pedestrian and traffic flow and safety in this area. With the past and upcoming improvements to Lovers Lane and John Scott Highway, as well as renewed interest in adding new business to the Fort Steuben Mall area, improving this section of roadway is crucial.

OH-08 County Highway 34 (Two Ridge Road) from County Highway 22A (Cadiz Road) to State Route 43 (Canton Road); west of Wintersville, OH

County Highway 34 (Two Ridge Road) is a collector highway that links two principle arterial highways, Canton Road to Cadiz Road, west of Wintersville, OH. The County Route has realized a significant increase in traffic (2,800 in 1992 to 4,910 in 1997) since the completion of the U.S.22 bypass in 1994. Built on a rolling terrain resulting in a poor alignment, the roadway has many sharp curves and restrictive line-of-sight problems at many intersections along the route.

Consideration for improving Two Ridge Road should consist of the following alternatives:

- Widen the entire county route to at least 24-feet with adequate shoulder width and drainage.
- Improve the overall alignment and grade of the existing route especially the two sharp s-curves 0.80 miles north of Cadiz Road.

The preferred alternative is reconstructing the entire roadway to satisfy the above considerations. In addition, possibly consider installing bike lanes and/or pedestrian lanes adjacent to the entire route. This last concern could be part of an overall bicycle/pedestrian plan for Jefferson County, OH.

OH-25 CR77 (Sinclair Ave) from Lincoln Ave to Lovers Lane

This project is the joint responsibility of both the Jefferson County Engineer and the City of Steubenville. Sinclair Avenue is a two-lane roadway winding its way along a watershed valley known locally as Permars Run. The roadway width is less than 24 feet wide with few shoulder recovery areas. The project would improve horizontal and vertical curves where needed, widen the pavement to full 24 feet, add paved shoulders, replace culverts where needed, replace guardrail where needed and install new traffic control signs.

OH-26 SR7 from Mingo Junction North Corp to Steubenville South Corp

The existing roadway, built in early 1960s, is “cut” into the hillside that follows along the Ohio River Valley between Steubenville and Mingo Junction. The existing rock cut face is experiencing deterioration resulting in intermittent rock falls. The project would address the rock fall conditions by cutting back the slope of the rock face and providing a rock-fall recovery area at the toe of the slope.

OH-46 Lincoln Ave and Wilson Ave Intersection Improvement

The signalized intersection of Lincoln Avenue and Wilson Avenue is in the southeastern part of the City of Steubenville. There is a tight curve “jog” in the alignment for east-west traffic. This jog is the result of a large power pole on the north side of Lincoln Avenue. The proposed improvement would address the poor east-west roadway alignment by relocating the power pole at an estimated cost in excess of \$100,000. The City of Steubenville is encouraged to pursue innovative ways to possibly avoid this cost and still provide an alignment for traffic that meets acceptable standards. This plan projects project construction in fiscal year 2025. A possible solution for this area is the installation of a roundabout to provide smoother flowing traffic and to reduce the amount of injury causing traffic accidents at this location. This plan projects construction in fiscal year 2025.

OH-50 Franklin St Nebo Dr Dennis Way Intersection Improvement, Toronto, Ohio

This project is proposing the addition of traffic signals or a roundabout intersection to relieve the peak traffic congestion do to the traffic caused by Toronto Schools, Timet Titanium, housing, and other businesses along Franklin St. The subdivision on Nebo Dr is currently expanding with more expansion planned in the future. Currently there is no funding available for this project.

OH-53 SR151/CR19 Roadway Realignment/Intersection Improvements New Alexandria

Increase in truck traffic has shown that the geometry of the intersection of SR151 and CR19 in New Alexandria is not sufficient for larger vehicles and needs widened, realigned, or a combination as well as removing retaining walls on either side of the roadway and relocating utilities to straighten and level the roadway. Currently there is no funding available for this project.

West Virginia Project Considerations

WVH-01 CR 13 (Three Springs Drive) from US Route 22 to CR 507 (Cove Road); Weirton, WV

Three Springs Drive is an urban collector street that directs traffic through a regionally significant commercial activity center in Weirton, WV. The excessive number of commercial driveways along this route severely restricts street capacity. Capacity calculations estimate that the intersections at County Route 13 and St. Thomas Drive and Potomac Avenue are operating at LOS D while the intersection at Cove Road functions at LOS F. Traffic model projections indicate vehicle miles traveled on Three Springs Drive will increase by roughly 1.2% annually over the next twenty-five years. At this rate, projected traffic volumes will be severely compromised all capacity on Three Springs Drive within the next ten years and the entire route will be operating at LOS F. A recent influx of new businesses to this area have only compounded the existing problem.

Several suggestions that should improve capacity problems on Three Springs Drive are:

- Formulate an access-management plan throughout the entire corridor to minimize the number of commercial driveways and reduce the number of left turn conflict along the entire route.
- Develop a pedestrian plan to interconnect all the commercial centers along Three Springs Drive to reduce automobile dependency within the retail district.
- In conjunction with the pedestrian plan, encourage shared parking lots among all the individual business centers by creating frontage roads parallel to Three Springs Drive.
- In conjunction with an access management plan, perform a study on the necessity of the amount

of signalized traffic intersections and determine if the amount of signals and the timing of those signals is sufficient, or if timing and/or number of signals can be changed. Less signals at less intersections with updated timing could be a solution to the traffic problem.

WVH-03 US Route 30 from 0.80 miles east of the Ohio State Line to Pennsylvania State Line; Hancock County, WV

US Route 30 is a principle arterial highway that runs roughly 3.50 miles through the most northern end of Hancock County, WV connecting Pennsylvania to the east bridging the Ohio River to East Liverpool, OH to the west. Starting at the Jennings Randolph Bridge over the Ohio River and ending just east of Chester, WV, about 0.90 miles of US Route 30 is a four-lane limited-access highway. Then, for the remaining 2.60 miles, the US Route is a winding two-lane highway with a 24-foot road surface and 8-foot shoulders. Further speaking, this route experiences a high accident rate, in particular, the intersection with WV State Route 8 0.90 miles west of the Pennsylvania State Line.

Daily traffic on US Route 30 ranges from 7,600 vehicles at the Pennsylvania State Line to 17,000 vehicles over the Ohio River Bridge between Chester, WV and East Liverpool, OH. At present, the four-lane section of US Route operates at LOS A with very little traffic congestion. The remaining two-lane section is operating at LOS C. Twenty-five year traffic projections taken from the Travel Forecast Model show that traffic volume on US Route 30 will increase by approximately 3.0% annually. At this rate, the entire section of US Route 30 through Hancock County may begin operating at LOS D in 12 years when traffic volumes begin to exceed the route's capacity. By 2025, US Route most likely will operate at LOS E and begin to experience moderate to severe congestion problems.

Two factors contribute to the anticipated increase in vehicle miles on US Route 30 over the next twenty-five years. First, is the anticipated completion of US Route 30 as four-lane limited access highway in Ohio from Canton to East Liverpool, and second, the projected growth of Mountaineer Casino Racetrack and Resort in Hancock County. Mountaineer anticipates becoming a major regional attraction to patrons in Pennsylvania as well as Ohio and West Virginia.

At a minimum, the West Virginia Division of Highways should consider relocating US Route 30 on a new alignment to eliminate the winding downhill section between State Route 8 and the four-lane portion. Then, rebuild the route as two-lane facility starting at the Pennsylvania State Line and ending at 0.25 miles east of Chester, WV where the four-lane highway begins, on an alignment that for future expansion to a four-lane limited access highway when needed.

WVH-05 Relocate State Route 2 from New Cumberland South Corporate Limits to Chestnut Street; New Cumberland, WV

Beginning at the south corporate limits of New Cumberland, State Route 2 (Ridge Avenue) is a confining two-lane street with a surface width that varies between 19 and 22 feet. Moving further north, the alignment from Clay Street to Jefferson Street, a section of State Route 2 known locally as "Station Hill," State Route 2 begins to descend, down a steep grade. The road then bends sharply ninety-degrees (90°) to the west near the bottom of the hill. An at-grade crossing of the N&S Railway at Madison Street follows this quickly. Finally, State Route 2 continues back to the north with another close ninety-degree (90°) turn right at the intersection of Madison Street and North Chester Street. Large trucks with a length of 50 feet or more often block the two cramped intersections and the rail crossing at the bottom of the hill causing traffic delays and thereby creating a dangerous situation.

West Virginia Department of Highways recently prepared alternative exhibits for a public information meeting that held May 29, 2014. The Department presented five alternatives plus the no-build. Because of that public meeting, Alternative 5, as shown in Figure 4, has gained momentum with Village government

officials as well as local businesses. That alternative re-aligns SR2 to the west beginning near the southern end of the Village and connects with existing SR2 at the intersection where SR2 currently approaches from the east. The estimated cost of Alternative 5 is over \$10 million.

Recently a slip has occurred along the existing corridor which has prompted this project to be moved ahead to prevent safety concerns. Construction on the project is expected to begin within FY2020-2021.



Figure 4 Proposed SR 2 Relocation through New Cumberland, WV Alternative 5

WVH-06/15 Relocate State Route 2 (Main Street) from County Route 7 (Bruin Drive) to County Route 8 (Archer Heights Road); Follansbee, WV

Main Street in Follansbee is the most congested highway in the BHJ Region. Traffic congestion occurs in Follansbee for a variety of reasons. The Regional Travel Patterns document listed five intersections in Follansbee on State Route 2 as high accident locations in Brooke and Hancock counties. These intersections are at the Brooke Shopping Plaza, Mark Avenue, Allegheny Street, Raymond Street, and State Street. Several solutions for future discussion to relieve traffic woes on State Route 2 in Follansbee are as follows:

- The most expensive solution would be a complete 4-lane limited-access bypass around Follansbee. The proposed route includes three interchanges, two at each terminus and one at Alternate State Route 27 (Allegheny Street).
- Continue construction of a 4-lane road with at-grade intersections on the existing alignment of State Route 2 through Follansbee.
- Eliminate on-street parking on State Route 2 through Follansbee and construct new off-street parking facilities. This would create surface width to delineate Main Street with a median lane for left turn movements. The project would also include an access- management and pedestrian plan to reduce the number of commercial driveways on Main Street and re-evaluate the traffic control patterns.

This corridor is still one of the highest areas where crashes are concentrated in the county. A simple solution may be to look at the traffic signals. Reducing the number of signals and also replacing them with modern signals with better adaptive timing capabilities may be the fastest and most cost effective solution at this time.

WVH-07 State Route 2 (Commerce Street) from State Route 67 (Bethany Pike) to 12th Street; Wellsburg, WV

This 0.80-mile segment of State Route 2 has a surface width of 30 feet for about 0.50 miles from 12th Street to 2nd Street that then widens to 44 feet near the intersection at State Route 67. The beginning of the 30-foot wide section of Commerce Street at the 12th Street intersection and ending just south of State Route 27 (Washington Pike) is three 10-foot lanes, allowing for a center left turn lane from southbound State Route 2 to eastbound State Route 27. The highway width is functionally obsolete creating unsafe and cramped traffic conditions that have led to numerous traffic crashes at or near this intersection. Continuing just south from the Washington Pike intersection, on-street parking is permitted on the northbound side of State Route 2 and the southbound side is lined by several commercial driveways segment south, further compromising capacity on Commerce Street in the south end of Wellsburg.

The prime solution to correct traffic problems in the south end of Wellsburg is, at a minimum; widen Commerce Street from 12th Street to Bethany Pike to 40 feet with 3-lanes and adequate space for pedestrian traffic and proper drainage. Another consideration is purchase adequate right-of-way to expand this section of highway to at least 60 feet wide for 5-lanes of highway and eliminate on-street parking as warranted by increases in future traffic volumes.

With the new Wellsburg Bridge currently under construction, this area could see an increase to the problems that already occur. The future increase that the new bridge may cause will place added priority to addressing the issues on this corridor to make sure they do not worsen.

WVH-08/09 State Route 2 from Ohio County Line to State Route 67; Brooke County, WV

This project is a continuation of current expansion of State Route 2 in Ohio County and south Brooke County. Constructing this segment of State Route 2 to a 4-lane highway from Ohio County Line to Wellsburg would be the natural progression of expanding the state highway. The project's intent is to eliminate several dangerous rock fall and mudslide areas near Beech Bottom, by stabilizing the hillside on the east perimeter of the road. Furthermore, improvements to widen the existing route can provide better and direct access to Wheeling, WV, and expand industrial opportunities in south Brooke County along the Ohio River.

WVH-10 Improvements to State Route 105 (Pennsylvania Avenue) from State Route 2 (Main Street) to Pennsylvania State Line; Weirton, WV

Projects to improve Pennsylvania Avenue are in several stages of development. Overall, WVDOT has developed this project in several phases, divided into three stages of construction beginning with: (1) Cove Road to the Pennsylvania State Line, (2) Cove Road to 12th Street, and (3) 12th Street to Main Street. Each construction phase should improve drainage, traffic flow, and pedestrian safety. The first two projects include the addition of a center lane for left turn movements, while the third project eliminates a dangerous sharp curve 0.15 miles east of Weir Avenue.

A new frontier of major economic development is underway on the Ohio river in the city of Weirton, West Virginia. The Frontier Group of Companies has acquired 1100 acres of former Weirton Steel/Arcelor-Mittal Steel Complex and currently in the process of redeveloping this area that can house up to 10 industrial buildings, 25 new commercial & retail building which can result in a significant number of jobs and

economic boost for the region. The first phase of this project involves improving the intersection in SR002, main street and Pennsylvania Ave. The frontier group identified a total linear length of 2818 ft for road improvement. Around 8000 vehicles pass this intersection every day. Between 2013-17 a total of 21 crashes recorded in this intersection with two (2) serious injuries. The possible improvement recommendation includes a roundabout, lane widening and reconfiguration, resurfacing, street lights, renovate the traffic signals, replace the interconnect cabling with fiber optic cable, install a closed loop master control system with limited traffic detection, eliminating dangerous sharp curve 0.15 miles east of Weir Ave, crosswalks, and sidewalk improvement. This is still in the planning stage and no estimate when construction would begin. This project is also included into the BDC's WARP mentioned previously.

WVH-14 SR2 (Commerce St) and SR27 (Washington Pk) Intersection Improvement; Wellsburg, WV

The intersection at SR2 (Commerce St) and SR27 (Washington Pike) has very tight geometry making it very difficult for trucks to make turns. The current turn lanes become unusable during high traffic flow periods and the steep slopes of RT 27 cause a hazard to stopping traffic, especially heavy trucks coming downhill. Traffic count data shows approximately 19,000 vehicles use this intersection daily with approximately 5 percent trucks. This truck traffic increases when fracking operations are occurring in the area due to the high number of trucks hauling water. In 2018 alone, this intersection experienced 15 crashes and 41 overall when approach road crashes are considered. The project will widen the turning radii on all corners and add left turn lanes of adequate length on all approaches. Also an advanced intersection warning sign with rumble strips can slow down the vehicles and reduce crash probabilities of vehicles traveling down SR27. This with lighting, installing a closed loop master control system with limited traffic detection, crosswalk, and restriping of the intersection can improve safety of this intersection. A very preliminary cost estimate has been developed showing construction to be approximately \$3 million for construction. This plan lists this important project in the unfunded table at this time. WVDOH is pursuing alternative funding sources for construction, but have recently funded a planning study to start finding a solution to this intersection and is expected to be completed in mid-2020.



Figure 5 Possible Intersection Improvements

WVH-17 CR7 (Cross Creek Rd) and CR7/1 (Rockdale Rd) Intersection Improvement; Brooke Co, WV

This proposed project will address the very poor geometry at the intersection of CR7 (Cross Creek Rd) and CR7/1 (Rockdale Rd). The geometry issues include both vertical and horizontal problems as well as very tight turning radii. A preliminary cost estimate is \$2.7 million for right of way and construction. This plan shows this project is in the unfunded table.

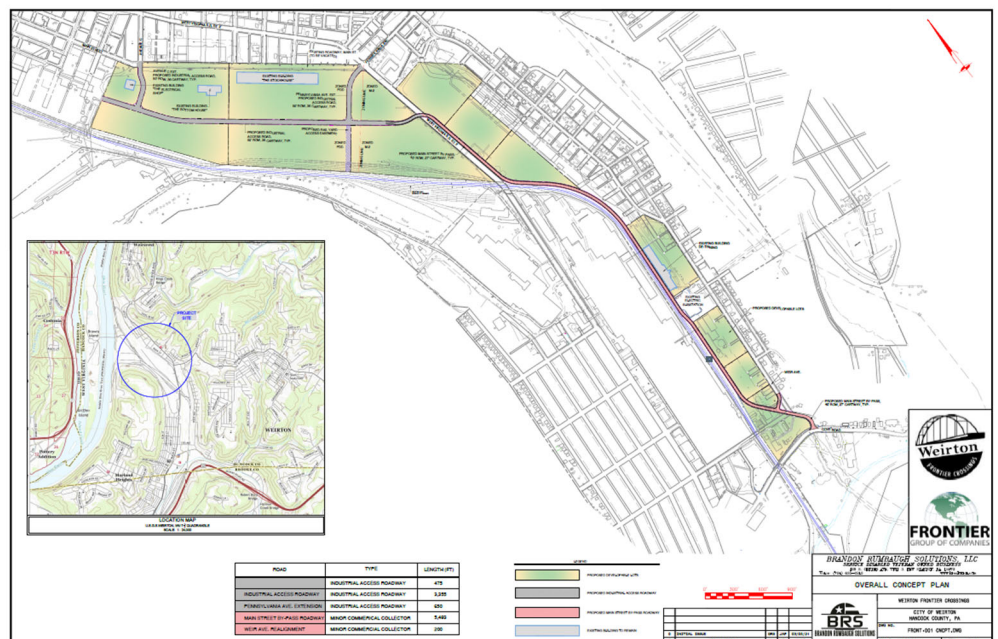
WVH-41 Weirton Corridor of Opportunity-SR2/Main St. Bypass Roadway

This project is being designed by the Frontier Group of Companies along with the WVDOH. The current estimated cost of the project is \$8.5 million, and no right-of-way is needed from any property owners other than from Weirton Frontier Crossings, LLC. WVDOH is submitting an INFRA Grant on behalf of the City of Weirton for this project.

This project is proposed to create a Main Street Bypass Roadway around State Route 2/Main Street. The New Main Street Bypass Roadway is shown highlighted Red on the map below. The new bypass would run from Cove Rd. and up Weir Ave. where it would then split around where the existing Lee Ave. is located. Weir Ave. would continue to the North East and the new bypass road would then travel to the North West along the existing railroad tracks behind the remaining Weirton Steel Facility. The new bypass would then split away from the railroad tracks and run beside SR 2/Main St. along the edge of the old Weirton BOP site which was demolished in March of 2019. The new bypass would then pass underneath SR 2/Main St. and connect to Pennsylvania Ave. via a proposed Industrial Access Road. This proposed Industrial Access Road is highlighted Grey on the map below. The industrial access road would also continue West through areas of proposed developable lots and connect to Avenue C.

There are multiple areas of developable lots along this new bypass and industrial access roadways. Starting on the East side of the project, there are multiple lots between Weir Ave. and the Weirton Steel Facility. Just to the North West of those is another large area in the lot where the old Weirton BOP once stood. Then finally a large area that stretches from SR2/Main St. to around Avenue C between Main St. and the existing railroad tracks. These developable areas are highlighted in a yellow/green shading on the map below.

This project is being designed to reduce traffic congestion and provide access to industrial properties along SR 2/Main St. for future development and economic growth in the region.



HIGHWAY SYSTEM PRESERVATION PROJECTS

Construction programs classified as Highway System Preservation Projects preserve and maintain the current operation and safety standards of an existing transportation facility. These types of projects do not add capacity to the existing transportation network, are usually low-cost, and initiated on highway facilities that currently meet federal standards for highway construction.

Ohio Project Considerations

In Ohio, village, city, township, county and state government have certain responsibilities for maintenance of their respective highway facilities as delineate by the Ohio Revised Code. To begin, the Ohio Department of Transportation (ODOT) maintains all Interstate, United States, and State Routes that are included in the National Highway System (NHS). The Ohio DOT also maintains all State and US Routes outside incorporated areas designated as a **City**, a populated area greater than 5,000. On the other hand, maintenance of all State and United States Routes that are not designated NHS Routes within an incorporated city is the responsibility each respective city government. Further, the maintenance of all designated federal-aid highways that have an Administrative Classification of a County, Township, City or Village Route, is the responsibility of each respective level of government. This plan will attempt to identify **Highway System Preservation Projects** each responsible governmental unit in Jefferson County, Ohio expects to complete on the federal-aid system.

OH-10 Resurface South Commercial Avenue; Mingo Jct., OH

This project is the responsibility of the Village of Mingo Junction. The project area is a north/south minor arterial street that runs parallel to State Route 7 in the south corporate limits of Mingo Jct. Approximately 1.60 miles in length, the proposed project begins at the Village's south corporate limits and ends at the bridge over Cross Creek. This project includes milling and replacing flexible asphalt, replacement of curb, sidewalk and catch basins where needed as well as pavement markings and traffic control devices.

OH-29 Old SR7 from Belmont Co Line to SR150A; Rayland, Tiltonsville and Yorkville

This project is the responsibility of the Jefferson County Engineer and the Villages shown above. The project area is a north/south collector street that serves as the main north/south local access corridor for the areas of Rayland, Tiltonsville, and Yorkville. The project includes milling and replacing asphalt concrete, replacement of curb where needed, replacement of sidewalk where needed, pavement markings and replacement of traffic control signs.

OH-31 Franklin Ave from Franklin Ave Extension to Trenton St; Toronto, OH

This project is the responsibility of the City of Toronto. The project area is a north/south minor arterial street that serves as the main north/south local access corridor for the City. The project includes milling and replacing asphalt concrete, replacement of curb where needed, replacement of sidewalk where needed, pavement markings and replacement of traffic control signs.

Additional Ohio System Preservation Projects

The following are Basic System Preservation Projects that would involve milling the existing asphalt-wearing surface and replacing the wearing surface with fresh asphalt concrete. Projects would also include installation of new pavement markings. These Federal Aid System projects need resurfaced every 20 to 25 years to preserve the highway system. See the project list tables for the planned year for each project.

OH-01	SR43 (Washington St) from SR7 to 5 th St; Steubenville, OH
OH-04	SR43 (Sunset Blvd) from Belleview Blvd to Linduff Ave; Steubenville, OH
OH-06	SR43 (Frank Layman Blvd) from Wintersville E Corp to Canton Rd; Wintersville.
OH-09	Resurface County Highway 22A (Cadiz Road/Old US 22) west of Wintersville, OH
OH-11	Franklin St Extension from Toronto W Corp to Franklin Ave; Toronto, OH
OH-13	Lovers Ln Connector from SR43 (Sunset Blvd to CR43; Steubenville, OH
OH-14	CR22A (Frank Layman Blvd) from Wintersville W Corp to SR43 (Canton Rd); Wintersville, OH
OH-15	SR43 (Sunset Blvd) from Brady Circle West to Steubenville W Corp; Steubenville, OH
OH-16	SR7 (Dean Martin Blvd) from Steubenville S Corp to Steubenville N Corp; Steubenville, OH
OH-27	John Scott Hwy from SR43 (Sunset Blvd) to Steubenville N Corp; Steubenville, OH
OH-28	Alexander Ave from SR7 to 4 th St; Toronto, OH
OH-33	Fernwood Rd from CR33 (Airport Rd) to SR43 (Frank Layman Blvd); Wintersville, OH
OH-35	Commercial Ave from Mingo Jct S Corp to Cross Creek Bridge; Mingo Jct, OH

West Virginia Project Considerations

In West Virginia, the West Virginia Department of Transportation is responsible for the maintenance of all highways that have an Administrative Classification of Interstate, United States, State, or County Route. Therefore, this plan does not identify Highway System Preservation projects for Brooke County and Hancock County, West Virginia.

CONGESTION MANAGEMENT / SAFETY PROJECTS

Planned Hazard Elimination projects resolve safety problems at roadway hazardous locations and sections, and other transportation elements that present a danger to motorists, pedestrians, or bicyclists. These projects decrease traffic crashes thereby reducing deaths, injuries, and property damage.

Ohio Project Considerations

OH-20 SR7 Traffic Signal Renovations; Steubenville, OH

This project is the responsibility of the City of Steubenville. The traffic signals along state Route 7 currently operate in a closed loop coordinated system, which the city and ODOT installed in the year 2000. Installing new lights along the entire corridor like the ones already at the new RT7-University Blvd intersection could improve safety and traffic flow.

OH-21 CBD Traffic Signal System; Steubenville, OH

This project is the responsibility of the City of Steubenville. The traffic signals within the Steubenville central business district operate coordinated using a single timing plan and outdated interconnection cabling. Renovated over 30 years ago, the traffic signals are in need of replacement. A project to renovate the traffic signal installations, replace the interconnect cabling with fiber optic cable, install a closed loop master control system with limited traffic detection is proposed.

OH-22 CBD Traffic Signal Renovations; Toronto, OH

This project is the responsibility of the City of Toronto. The traffic signals within the Toronto central business district operate uncoordinated using a single timing plan and outdated equipment. The City of Toronto has not renovated the majority of these traffic signals since their original installation estimated to be over 50 years ago when SR7 traffic routed through the Toronto CBD. The first phase of this project would be to evaluate the necessity of the each traffic signal. The project would dispose of all signals found to be unnecessary signals and the remaining traffic signals renovated to current standards including control equipment, vehicle, and pedestrian signals. If the study finds it to be appropriate, the project would connect the remaining traffic signals into a closed loop system to provide orderly traffic flow.

OH-23 SR43 (Sunset Blvd) Traffic Signal Renovations; Steubenville, OH

This project is the responsibility of the City of Steubenville. The traffic signals along State Route 43 currently operate in a closed loop coordinated system, which the city and ODOT installed in the year 2000 and updated to use video camera detection in 2010. . Installing new lights along the entire corridor like the ones already at the new RT7-University Blvd intersection could improve safety and traffic flow.

OH-24 Mall Area Traffic Signal Renovations; Steubenville, OH

This project is the responsibility of the City of Steubenville. The traffic signals in the Fort Steuben Mall area currently operate in a closed loop coordinated system, which the city and ODOT installed in the year 2000 and updated to use video camera detection in 2014. . Installing new lights along the entire corridor like the ones already at the new RT7-University Blvd intersection could improve safety and traffic flow.

OH-48 SR43 from US22 to SR646 Traffic Signal Renovations; Wintersville, OH

This project is the responsibility of the Village of Wintersville. The traffic signals along State Route 43 currently operate coordinated in a closed loop system with loop vehicle detection that ODOT installed in the year 2008. Renovations include updating the vehicle detection using either video or microwave systems.

OH-49 CR22A (Cadiz Rd) from Springdale Ave to Two Ridge Rd, Cross Creek, OH

BHJMPC selected this urban non-freeway segment based on the crash vulnerable locations identified in the Jefferson County Local Road Safety Plan. This segment experienced the highest number of non-motorized fatalities and serious injuries. Between 2013 and 2018, 1 fatal and 2 serious injury pedestrian crashes and 20 serious injury motor vehicle crashes occurred.

A Road Safety Audit was performed with local officials as well as ODOT District 11 personal and found that speeding, disruptive sight distance, absence of defined crosswalk, and lack of lighting to be the causes of the majority of crashes. It is recommended to reduce the speed limit, clear intersection obstructions, create center median lane at intersections, incorporation of auxiliary and transverse paint markings, road diet, traffic signal upgrades, highway lighting improvement, mid-block offset pedestrian crossing with advanced crossing warning and yield sign, rectangular flashing beacon, sidewalk improvement, and evaluation of sign placement.

County engineers are proposing to add a crosswalk to the intersection at Springdale Ave and upgrade the current traffic light. Additional sidewalks and repair to existing sidewalks may be necessary as well as adding all ADA compliant features. Funding could possibly come from ODOT's Safe Routes to Schools Program. New lighting from Springdale Ave to Two Ridge Rd is also being proposed at a later time due to high costs.

OH-50 SR7/3rd St/4th St Intersection Improvement (Pilot)

This intersection has become increasingly hazardous due to the alignment of existing SR7, 3rd St, and 4th St. Also there has been an increase in the amount of truck traffic since the completed construction of a Pilot Truck Stop and an increase in industrial traffic to various businesses along the Ohio River due to increased Gas and Oil production in the area. A rework of these intersections is recommended to ease traffic flow, reduce the chances of vehicle accidents, and create a new pedestrian crosswalk. There is currently no funding available for this project.

OH-52 BHJ MPC Township Safety Signage Grant Program

Every year as a part of Surface Transportation Improvement program (TIP), BHJ will allocate up to \$25000 from their MPO Sub allocation fund to a township for their safety signage, posts and hardware replacement. BHJ will select one township each year from their Jefferson county member communities and will ensure to cover all the member communities by yearly rotation irrespective of the crash vulnerability and crash counts of that locality. Materials provided under this grant are covered at 100%. The Township must commit to install the signs with Township labor. Signs must be installed within one year of the Federal Authorization Date of the approval of the project. Township may choose to include the signage needs for Villages which are partially or wholly located within Township's boundaries but BHJ holds the township responsible for the installation. Signs must be installed per the guidelines in the Ohio Manual of Uniform Traffic Control Devices. BHJ will follow the same application process developed by Ohio Department of Transportation for their "ODOT Township Safety Sign Grant Program".

OH-54 SR43 Signage Replacement – Replace Fading Traffic Signs

Replace fading signs along SR43 (Sunset Blvd/Main St) through Wintersville and Steubenville. Some signs of a yellow color are fading to the point of being unreadable.

West Virginia Project Considerations

WVH-16 Redesign of Intersection at Freedom Way and Birch Drive in Weirton, WV

With the Fort Steuben Bridge removed from the traffic network, traffic has significantly declined on Freedom Way in Weirton west of the Birch Drive intersection. In addition, recent traffic studies have revealed that the traffic signal at the intersection is unwarranted requiring that the signal be removed. Before removing the signal, the West Virginia DOH needs to reconfigure the intersection to accommodate the heavy traffic flow travelling onto Birch Drive into the Half Moon Industrial Park to the west. Figure 6 displays a possible reconfiguration. The project estimated is \$527,000, which includes design and minor right-of-way.



Figure 6 Possible Reconfiguration of Freedom Way & Birch Drive Intersection

WVH-21 Follansbee Traffic Signal System Renovations; Follansbee, WV

This project is the responsibility of West Virginia Department of Highways. The traffic signals along State Route 2 in Follansbee, installed over fifteen years ago, currently operate in a “closed loop” coordinated system. The corridor through Follansbee has been identified as a high crash location. New signals could be a solution to alleviate the congestion and reduce crashes in this area.

WVH-22 Wellsburg Traffic Signal System Renovations; Wellsburg, WV

This project is the responsibility of West Virginia Department of Highways. The traffic signals along State Route 2 in Wellsburg, installed over fifteen years ago, currently operate in a “closed loop” coordinated system.

WVH-38 Chester Traffic Signal System Renovations; Chester, WV

The traffic signals through Chester on State Route 2 currently do not operate as a system. WVDOT should consider replacing the existing signals with a new coordinated “closed loop” type traffic signal system.

WVH-39 Weirton Traffic Signal System Renovations; Weirton, WV

The traffic signals through Weirton on State Route 2 from Cove Rd to Pennsylvania Ave currently do not operate as a system. WVDOT should consider replacing the existing signals with a new coordinated “closed loop” type traffic signal system.

BRIDGE PRESERVATION PROJECTS

Identified bridge projects provide funding to replace or rehabilitate deficient highway bridges located on any public road in the BHJ Region. Through an intensive inspection and management programs, each respective state highway agency, ODOT and WVDOT, identify such projects. In Ohio, the County Engineers Association administers a local bridge program for structures that are not on the Interstate, United States, or State Route Federal-Aid System. The Ohio Department of Transportation is responsible for the maintenance and rehabilitation for all other bridge structures in Ohio. On the other hand, the West Virginia Department of Transportation assumes responsibility for all bridge structures in West Virginia. This plan attempts to identify a limited number of bridge projects that are essential to the integrity of the region's highway network.

Ohio Project Considerations

OBR-09 Trenton Ave Bridge; Toronto, OH

The project is the responsibility of the City of Toronto. This is a Bridge System Preservation project programmed to address normal repair and rehabilitation concerns. Constructed in the mid 1990's with a projected lifetime of 50 years, this bridge will be in service for over 35 years during the life of this plan.

OBR-12 Bridge Replacement: CR75A over Yellow Creek, Springfield Twp, Jefferson County Engineer

The replacement of this bridge is the responsibility of the Jefferson County Engineer. Design work is proceeding with environmental and right-of-way acquisition. The engineer anticipates construction to occur in fiscal year 2017.

OBR-13 Bridge Replacement: CR1 over Little Short Creek, Warren Twp, Jefferson County Engineer

The replacement of this bridge is the responsibility of the Jefferson County Engineer. The county has bid the project and construction is proceeding.

OBR-17 Bridge Replacement: CR53 over Brush Creek, Ross Twp, Jefferson County Engineer

The replacement of this bridge is the responsibility of the Jefferson County Engineer. Design work is proceeding with environmental and right-of-way acquisition. Anticipated construction date is in fiscal year 2017.

OBR-20 Rehabilitate Bridge KNO-T289-0.06 - Knox Township – Jefferson County Engineer

Rehabilitate truss bridge by removing truss, disassembling and repairing it, and then reinstalling on existing abutments after minor repairs to abutments. No right-of-way or environmental work needed.

West Virginia Project Considerations

In West Virginia, the West Virginia Department of Transportation is responsible for the maintenance of all bridges that have an Administrative Classification of Interstate, United States, State, or County Route. Therefore, this plan does not identify Bridge System Preservation projects for Brooke County and Hancock County, West Virginia.

REGIONAL RIDESHARE OPPORTUNITIES

CommuteInfo® is a coordinated partnership of transportation management agencies and providers, as well as businesses and non-profit service organizations throughout Southwestern Pennsylvania and the Weirton-Steubenville, WV-OH Metropolitan Area, specifically the BHJMPO. The partnership provides commuter information and services for persons who desire commuter travel alternatives to driving alone to their jobs and/or school primarily into Southwestern Pennsylvania. With the growing number of single occupancy commuters starting in the Weirton-Steubenville, OH-WV Metropolitan Area and ending in Southwest, PA, the BHJMPO desires to continue its Vanpool/Rideshare Program in partnership with *CommuteInfo*. Existing Park and Ride Facilities in the BHJ area are inadequate to handle increased interest in shared options. Therefore, BHJ is reviewing suitable locations in Jefferson and Brooke counties to site new Park and Ride locations to expand ridesharing opportunities. To date four locations are under review: Toronto, OH at the SR 7 and Franklin Street Interchange, north of Steubenville, OH adjacent to an existing Park and Ride lot at SR 7 & 213, and two in Weirton, WV the US 22 and Harmon Creek Interchange and the US 22 and Colliers Way Interchange.

ORS-04 Park and Ride: SR7 and SR150; Rayland, OH

Figure 7 is a conceptual plan to build a park and ride facility at SR-7 & SR-150 in southern Jefferson County near Rayland, OH. The plan creates 42 regular parking spaces and 2 handicap accessible parking spaces. There is a need for a park and ride in this area as evidenced by vehicles parked along the roadways and in local business parking lots. BHJ personnel working with ODOT District 11 personnel have developed the project and is currently programmed for construction in fiscal year 2020.

This project is currently underway and is in the Stage 1 planning phase with an estimated completion date in September 2022.



Figure 7 Concept Plan of Constructed Park and Ride Facility at SR 7 & SR150 in Jefferson County

ORS-05 Park and Ride: Wellsburg Bridge, Brilliant, Ohio Along SR 7

After completion of the Wellsburg Bridge, a need for parking in and around the bridge for carpooling and trail use purposes is expected. The current conceptual drawings place 12 regular parking spaces and 1 handicap accessible parking space on a lot adjacent to the Bridge on the Ohio side. BHJ along with ODOT District 11 personnel have developed this project in anticipation of carpooling and trail use from the shared use path connecting the Ohio side across the bridge to the trails on the West Virginia side to prevent crowded street parking from becoming overwhelmed in Brilliant. This project is currently in the scoping phase and has an estimated completion date in September 2022.

REGIONAL BIKE & PEDESTRIAN DEVELOPMENT

Ohio Project Considerations

OTA-02 Ohio River Front Trail

The City of Steubenville has proposed the development of a bicycle / pedestrian trail along the Ohio River. The full length of the trail would stretch 1.4 miles from Washington St to the Steubenville Marina. Currently a shared use path that runs from the Steubenville Marina to the North end of 4th street is currently in the planning phases and has an estimated completion date of September 2021. This would cover a portion of this River Front Trail and connects the Marina to the main downtown area of Steubenville.

OTA-03 Converted Rail Trail from Jefferson/Harrison County Line to Dillonvale

If the owner of the railroad corridor between the Jefferson/Harrison County Line to Dillonvale ever proposes to abandon the rail line, it should be rail banked and converted for use as a rail/trail. This rail trail is a potential connection link between the Ohio & Erie Canal Bikeway in Cleveland, Ohio and the Brooke Pioneer Trail in West Virginia crossing the Ohio River at the new Wellsburg Bridge.

OTA-04 Converted Rail Trail from Dillonvale to Rayland

An extension of **OB-03**, this project proposes to rail bank the existing rail corridor between Dillonvale and Rayland if the active rail line is abandoned. This rail trail is a potential connection link between the Ohio & Erie Canal Bikeway in Cleveland, Ohio and the Brooke Pioneer Trail in West Virginia crossing the Ohio River at the new Wellsburg Bridge.

OTA-05 Converted Rail Trail and On-Road Trail from Yorkville to Toronto

If the owner of the existing railroad between Yorkville and Toronto ever abandons this rail line, the corridor should be rail banked and converted to a rail/trail. The trail would use existing roadways where rail lines are still active. This rail trail would provide north-south connection links to US Bike Route 50 in Steubenville as well as the Brooke Pioneer Trail and the Panhandle Trail in West Virginia.

OTA-06 US Bike Route 50

In connecting Ohio with West Virginia Trails, US Bike Route 50 is an on road corridor that stretches from Harrison County, Ohio, to the west and continues along CR22A, SR152, and SR43 to the east where it crosses the Ohio River via the Market Street Bridge to connect to West Virginia and Pennsylvania.

OTA-13 Streetscape in Steubenville – 4th St from Washington St to Market St

For the last couple of years, North 4th street of historical downtown Steubenville is the focal point of some very popular social gatherings named “First Fridays on Fourth”, The Nutcracker Village, and Advent market. It is also in a close proximity to the Historic Fort Steuben and home of some architecturally significant old structures that are listed in National Register of Historic Places. It is considered to perform a Streetscape on this section of roadway to improve the sidewalks, curbs, and intersections to accommodate festivals and improve overall looks and safety of the area. Proposed work to include filling in basement access doors and repairing/replacing sidewalks, replacing curbs while burying utilities, new lighting, and improve intersections with new crosswalks, curb bump outs, and streetlights and traffic lights.

Currently there is no funding available for this project, but estimates are being performed. Future revitalization of Downtown Steubenville largely dependent on this project.

OTA-15 Beatty Park Bridge – Replacement/Repurpose

A small 8-10' span bridge inside Beatty Park is currently closed due to being unsafe for vehicle travel. It was constructed in the late 1800s. This bridge is needed to reach the far end of the park. Since it is historical, there are two options: Replace the bridge for vehicle traffic use or repurpose current bridge to allow for pedestrian/bike use only. This would allow access to a shelter house at the far end of the park and also allow it to be repaired from recent fire damage.

West Virginia Project Considerations

WVTA-01 Panhandle Trail; Weirton, WV

The Panhandle Trail in Weirton, WV is a 4-mile rail trail running under U.S. 22 Harmon Creek Exit to the Pennsylvania State line near Colliers WV. This rail trail will link Weirton WV to the National Network of trails. The Panhandle rail Trail is a planned 29-mile pathway linking two states, three counties, and 14 municipalities. The trail connects with the Montour Trail in McDonald, PA and brings the Panhandle into a network of trails that lead to Washington, D.C. that includes the Great Allegheny Passage.

WVTA-02 Brooke Pioneer Trail; Brooke County, WV

The Brooke County Trail Committee has been actively working to expand and enhance a four-mile stretch of abandoned rail trails running which will extend from the city of Wellsburg (eventually encompassing residential areas of Short Creek, Beech Bottom, Wellsburg, Follansbee, and Colliers) to the Ohio County line. Trail advocates anticipate an extension of the Wheeling Heritage Trail and a connection with the Brooke Pioneer Trail at the Ohio County line.

BHJ and advocacy groups have considered developing an interconnected network of trails throughout Brooke County. However, due to the topography and the limited right of way available, this truly interconnected network may be difficult to develop, but planners have identified individual trail facilities. For example, the Town of Bethany and Bethany College have been working to develop their own series of trails. They have actually implemented several projects. The City of Wellsburg has considering developing a trail network tied into the historic section of town.

WVTA-03 Wellsburg Yankee Trail; Wellsburg, WV

Wellsburg has expressed an interest in developing a bicycle/pedestrian trail extending from the south end to the north end of the city. A trail of this nature would enhance the festivals currently held each year and would provide recreation for the city's residents.

WVTA-05 Ohio River Trail from Weirton to Tomlinson Run; Hancock County, WV

This proposal uses the existing railroad corridor between Weirton and Tomlinson Run should the operator ever abandon parts of the active rail line. The trail would use existing roadways where rail lines are still active. This rail trail would provide north-south connection links to US Bike Route 50 in Weirton and points north along the West Virginia side of the Ohio River.

WVTA-06 Converted Rail Trail from Follansbee to Weirton; Brooke County, WV

If the operators of the existing railroad between Follansbee and Weirton ever abandon portions of the active rail line, the corridor should be rail banked and converted to a rail to trail. The trail would use existing roadways where rail lines may continue to be active. This rail trail would provide north-south connection link to US Bike Route 50 in Weirton and points south along the West Virginia side of the Ohio River.

WVTA-09 Beech Bottom Sidewalk Improvements, Beech Bottom, WV

This is a project to improve sidewalks along SR2 in Beech Bottom to address ADA accessibility and connectivity.

WVTA-10 Charles St Streetscape; Wellsburg, WV

This is a project to improve sidewalks along Charles Street in Wellsburg to address ADA accessibility, connectivity and to enhance the historic aspects of Wellsburg.

WVTA-12 Tomlinson Run State Park to Chester, WV Trails; Hancock County, WV

Tomlinson Run Park is a State owned and maintained park facility. Currently there is a network of trails covering the entire park. As more people within the area become active in biking and recreational hiking/pedestrian activities, park operators anticipated expanding the existing trail facilities. Another consideration is developing trails connecting the Cities of Chester and New Cumberland to Tomlinson Run State Park. However, due to the topography and the limited right of way available this trail facility would be difficult to construct.

REGIONAL PUBLIC TRANSPORTATION DEVELOPMENT

Public transportation within the BHJ region has been an important form of transportation for many years. It provides a source of mobility for many individuals, particularly the elderly and disabled community, which would otherwise not have access to dependable transportation. As such, it is an integral part of the entire transportation system and must be maintained and modified to meet the changing demands of the region's public transportation dependent residents.

Ohio Considerations

OT-01/02/03 Steel Valley Regional Transit Authority (SVRTA)

Funding is shown for annual operating, maintenance, capital (vehicle replacements), and planning.

West Virginia Considerations

WVT-01/02/03 Weirton Transit Corporation (WTC)

Funding is shown for annual operating, maintenance, capital (vehicle replacements), and planning.

CONCLUSIONS

Although each project proposed is important and necessary to enhance, maintain, and expand the existing transportation system, the planning and construction of the entire program is costly. Construction costs are continually rising, and revenue sources are difficult to predict. These facts make it difficult to fund and program high-cost projects. Even though federal, state, and local governments can reasonably fund many low-cost projects, virtually every project requires a significant level of state and/or federal government participation and cooperation.

As part of the federal requirements of this transportation plan, it is first necessary to evaluate funding sources and forecast potential revenue sources to determine each project's feasibility. A separate financial forecast document summarizes project cost estimates by the year of expenditure and the distribution of anticipated federal, state, and local government funds. The next step is developing a staged "fiscally constraint" long-range transportation improvement program for the lifetime of this plan based on a sound financial plan demonstrating how each project is reasonably funded. Then, each "fiscally constraint" project must demonstrate that it will not adversely affect the environment by exceeding the ambient air quality standards set forth by the United State Environmental Protection Agency (USEPA).

SECTION 8: FINANCIAL FORECASTING PLAN

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SECTION 8 – FINANCIAL FORECASTING PLAN

The financial analysis for estimating resources for implementation and construction of transportation projects involves both estimating project costs and developing reasonable forecasts of federal, state, and local resources. Typically, there are funding shortfalls between available financial resources and anticipated projects demands for preservation and expansion of a region's transportation network. In many circumstances, a project's proposed scope must be limited to the amount of financial resources available, or revenue sources expanded to fit the project needs. Financial planning including creative financial strategies to move the project forward through the program development process is as important as engineering and constructing a project. The financial plan will serve as a tool to estimate the region's project demand in terms of dollars and to identify the fiscal resources needed to carry out the project demand.

Major elements discussed in the analysis will be:

- A forecast of federal, state, and local transportation funds expected to be available for project demand considered over the lifetime (FY 2021 through 2045) of the LRTP in nominal dollars that reflect aggregate cost ranges/cost bands (FY 2021-2014; 2025-2035; and 2036-2045) that reasonably supports projected project costs as well as system maintenance and preservation based on "year of expenditure dollars";
- An estimate of project demand based on the preservation and of the existing transportation system and the construction of capacity and safety improvement projects.
- A comparison of funding level estimates versus funding needs.
- A listing of transportation projects and strategies divided into three program stages (FY 2021 through 2024; FY 2025 through 2035; and FY 2036 through 2045) that Project Sponsors (State and Local) could be reasonably fund over the lifetime of the LRTP based on projected transportation revenues.

FINANCIAL FORECAST ANALYSIS

Estimated Financial Projections by Revenue Source

Through a variety of sources, West Virginia and Ohio transportation departments each provided BHJ with reasonable financial forecasts by year of expenditures.

WEST VIRGINIA REVENUE ANALYSIS

West Virginia DOT provided Long Range Revenue Estimates for Use in MPO Long Range Transportation Plans via a letter dated February 2016. On page 2 of their "*Long Range Revenue Estimates for use in MPO Long Range Transportation Plans – March 2015*" document, WVDOH outlines the method used for developing the long-range revenue estimates as follows:

"METHOD:

In order to update the MPO long-range revenue estimates, BHJ MPO in consultation with West Virginia DOT took the following steps:

- 1. Determine if any modifications to the existing method are necessary and if so, implement the necessary changes.*
- 2. Obtain indexed cost data to estimate long-term inflation rates and for converting financial information from nominal values to constant 2014-dollar values.*
- 3. Gather historical statewide revenue and expenditure data for Fiscal years 2002 through 2014.*

4. *Gather project program data for Calendar Years 2002 through 2014 on a statewide basis for all phases and types of work, as well as for select construction codes (1, 2, 3, 4, 5, 30, 33, and 66) on a statewide and individual MPO basis.*
5. *Gather bridge project data programmed under construction codes 31 and 32 during FY 2002 through 2014 and identify which projects qualify as "improvements".*
6. *Update the VMT, Highway Mileage, Population and Historical Funding percentages to reflect current information and calculate new percentile averages for each MPO and the non-MPO regions of the State.*
7. *Gather the most recent "official" revenue estimates for the State Road Fund.*
8. *Calculate per year and aggregate 25-year revenue forecasts for each MPO."*

WVDOT prepared BHJ LRTP 25-Year Improvement Funding Forecasts for fiscal years 2016 through 2040. The estimates provided were statewide and factored specifically for the BHJ transportation planning area in both 2016 dollars as well as nominal dollars factored to the year of expense. This plan reflects expenditures in nominal dollars factored to the year of expense as shown in Table 1.

Major/New Construction spending, in nominal dollars, over the next 25 years (2016 through 2040) estimated by the West Virginia DOT in the BHJ Region amount to \$86,082 million. Table 2 presents the West Virginia 25-year estimates for Major/New Construction in 2016 dollars factored to nominal "year of expenditure" dollars. For Transportation Enhancement Activities, BHJ set aside 10% of the 2020 to 2040 total allocation.

Since highway improvement needs exceed the funding forecast, traditional highway and bridge funding sources cannot finance major new transportation projects such as the New Ohio River Bridge south of Wellsburg, SR2 (Commerce St) and SR27 (Washington Pike) Intersection Improvement in Wellsburg and the SR2 Relocation through New Cumberland.

Two "special" sources of funding WVDOH has pursued for some projects is the Transportation Investment Generating Economic Recovery or "TIGER Discretionary Grants" and FASTLANE Grants or credit assistance for regionally significant freight projects. WVDOH remains committed to finding innovative methods to fund transportation needs in the region.

One example is WVDOH moving forward with the Wellsburg (New Ohio River) Bridge using the Public Private Partnership (P3) process. In general, this is a contractual arrangement formed between a public agency and a private sector entity that allows for greater private sector participation in the delivery and financing of transportation projects. In this case, the private sector entity will be the successful designer-constructor team submitting the best overall bid to design and construct the project. WVDOH has established a "short list" of contractors and has set a July 2016 date for the selected contractors to submit bids. The DOH hopes to begin construction in early calendar year 2017

TABLE 1 BHJ LRTP 25 YEAR FUNDING FORECAST WEST VIRGINIA

**BHJ LRTP 25-YR IMPROVEMENT FUNDING FORECAST (IN NOMINAL DOLLARS)
VALUES AS OF 2/25/15 AND PRESENTED IN THOUSANDS**

FY	TOTAL STATE REVENUE	NON IMPROVEMENT EXPENDITURES	STATEWIDE IMPROVEMENT FUNDS	ELIMINATED IMPROVEMENT FUNDS	ELIMINATED EARMARKED FUNDS	STATEWIDE IMPROVEMENT FUNDS FOR MPO LRTP'S	BHJ LRTP IMPROVEMENT FUNDING @ (2.07%)
2016	\$1,168,154	\$551,605	\$616,549	\$505,570	\$0	\$110,979	\$2,299
2017	\$1,180,680	\$575,736	\$604,944	\$496,054	\$0	\$108,890	\$2,256
2018	\$1,158,844	\$600,923	\$557,921	\$457,496	\$0	\$100,426	\$2,081
2019	\$1,179,844	\$627,211	\$552,633	\$453,159	\$0	\$99,474	\$2,061
2020	\$1,179,844	\$654,650	\$525,194	\$430,659	\$0	\$94,535	\$1,958
2021	\$1,336,548	\$683,289	\$653,259	\$535,672	\$0	\$117,587	\$2,436
2022	\$1,395,018	\$713,180	\$681,837	\$559,107	\$0	\$122,731	\$2,543
2023	\$1,456,045	\$744,380	\$711,665	\$583,566	\$0	\$128,100	\$2,654
2024	\$1,519,743	\$776,944	\$742,799	\$609,095	\$0	\$133,704	\$2,770
2025	\$1,586,227	\$810,933	\$775,294	\$635,741	\$0	\$139,553	\$2,891
2026	\$1,655,620	\$846,409	\$809,211	\$663,553	\$0	\$145,658	\$3,018
2027	\$1,728,048	\$883,437	\$844,611	\$692,581	\$0	\$152,030	\$3,150
2028	\$1,803,645	\$922,084	\$881,560	\$722,879	\$0	\$158,681	\$3,287
2029	\$1,882,549	\$962,423	\$920,126	\$754,503	\$0	\$165,623	\$3,431
2030	\$1,964,904	\$1,004,526	\$960,378	\$787,510	\$0	\$172,868	\$3,581
2031	\$2,050,863	\$1,048,471	\$1,002,392	\$821,961	\$0	\$180,431	\$3,738
2032	\$2,140,582	\$1,094,338	\$1,046,244	\$857,920	\$0	\$188,324	\$3,902
2033	\$2,234,226	\$1,142,212	\$1,092,014	\$895,451	\$0	\$196,562	\$4,072
2034	\$2,331,966	\$1,192,180	\$1,139,786	\$934,624	\$0	\$205,161	\$4,250
2035	\$2,433,982	\$1,244,335	\$1,189,648	\$975,511	\$0	\$214,137	\$4,436
2036	\$2,540,462	\$1,298,770	\$1,241,691	\$1,018,187	\$0	\$223,504	\$4,630
2037	\$2,651,599	\$1,355,588	\$1,296,012	\$1,062,729	\$0	\$233,282	\$4,833
2038	\$2,767,598	\$1,414,890	\$1,352,708	\$1,109,221	\$0	\$243,487	\$5,044
2039	\$2,888,672	\$1,476,787	\$1,411,885	\$1,157,746	\$0	\$254,139	\$5,265
2040	\$3,015,043	\$1,541,392	\$1,473,651	\$1,208,393	\$0	\$265,257	\$5,495
25-YR TOTALS	\$47,250,705	\$24,166,693	\$23,084,011	\$18,928,889	\$0	\$4,155,122	\$86,082

Table 2 BHJ LRTP 25-YR FUNDING FORECAST WITH FEDERAL /STATE SPLIT WV (\$1000)

Funding Estimate (WVDOH)				TA Estimate	Remaining Balance	
Year	Funding	80%	20%	10%	80%	20%
2021	\$2,436	\$1,949	\$487	\$244	\$1,754	\$438
2022	\$2,543	\$2,034	\$509	\$254	\$1,831	\$458
2023	\$2,654	\$2,123	\$531	\$265	\$1,911	\$478
2024	\$2,770	\$2,216	\$554	\$277	\$1,994	\$499
2021-2024	\$10,403	\$8,322	\$2,081	\$1,040	\$7,490	\$1,873
2025	\$2,891	\$2,313	\$578	\$289	\$2,082	\$520
2026	\$3,018	\$2,414	\$604	\$302	\$2,173	\$543
2027	\$3,150	\$2,520	\$630	\$315	\$2,268	\$567
2028	\$3,287	\$2,630	\$657	\$329	\$2,366	\$592
2029	\$3,431	\$2,745	\$686	\$343	\$2,470	\$618
2030	\$3,581	\$2,865	\$716	\$358	\$2,578	\$645
2031	\$3,738	\$2,990	\$748	\$374	\$2,691	\$673
2032	\$3,902	\$3,122	\$780	\$390	\$2,810	\$702
2033	\$4,072	\$3,258	\$814	\$407	\$2,932	\$733
2034	\$4,250	\$3,400	\$850	\$425	\$3,060	\$765
2035	\$4,436	\$3,549	\$887	\$444	\$3,194	\$798
2025-2035	\$39,756	\$31,806	\$7,950	\$3,976	\$28,624	\$7,156
2036	\$4,630	\$3,704	\$926	\$463	\$3,334	\$833
2037	\$4,833	\$3,866	\$967	\$483	\$3,480	\$870
2038	\$5,044	\$4,035	\$1,009	\$504	\$3,632	\$908
2039	\$5,265	\$4,212	\$1,053	\$527	\$3,790	\$948
2040	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2041	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2042	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2043	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2044	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2045	\$5,495	\$4,396	\$1,099	\$550	\$3,956	\$989
2036-2045	\$52,742	\$42,193	\$10,549	\$5,277	\$37,972	\$9,493
Total (2021-2045)	\$102,901	\$82,321	\$20,580	\$10,293	\$74,086	\$18,522
In Million	\$102.90	\$82.32	\$20.58	\$10.29	\$74.09	\$18.52

Source: Other Financial Revenue Analysis for West Virginia Projects

OHIO REVENUE ANALYSIS

The Ohio Department of Transportation, in an effort to be more involved in the MPO financial planning process, has developed a standard methodology to project funding levels for Metropolitan Long-Range Transportation Plans. The Ohio DOT has developed a methodology as an approach for an MPO such as BHJ, may follow to establish Long Range revenue assumptions. Table 3 is a summary of the Jefferson County, Ohio fund estimates for years 2021 through 2045 from ODOT Office of Statewide Planning and Research. For years 2021 through 2024, these are fund estimates based on projects listed in the most recent FY 2021-2024 Transportation Improvement Program.

Established Revenue Sources

A number of federal, state, and local revenue sources make up the Ohio Revenue analysis. The first source of federal revenue considered for transportation improvement planning and construction in Jefferson County is the MPO Sub-Allocation Program. The Ohio Department of Transportation has established a Sub-Allocation Program that distributes by formula, federal transportation improvement funding to small metropolitan areas with population less than 200,000. The allocation to Jefferson County consists of three funding categories:

1. Surface Transportation Program (STP)
2. Congestion Mitigation Air Quality (CMAQ)
3. Transportation Alternatives (TA)

The next list of revenue sources considered in this analysis report includes the following ODOT federal and state Capital Programs as found in Ellis, ODOT's project management system:

- District Preservation
- Major/New Construction,
- County Engineers Association of Ohio (CEAO) Bridge, STP Pavement, and Highway Safety Improvement (HSIP), and
- Other Federal Programs including Appalachian Program Development (APD), Safety Upgrade, and Small Municipal Bridge

Table 4 shows the estimated overall obligation authority by year and revenue source for transportation improvements in Jefferson County, Ohio. The total available (Federal and State) include all categories discussed in the previous paragraph as well as BHJ's sub-allocations.

BHJ obtained ODOT's MPO Funding Summary Report dated December 3rd, 2019, to estimate the annual MPO Sub-Allocations, sub-allocations for STP, CMAQ, and TA. The projected allocations appear flat for 2021 through 2045 as reflected in Table 3 below.

- Surface Transportation Program (STP) - \$17.44 Million.
- Congestion Management Air Quality (CMAQ) - \$13.85 Million.
- Transportation Alternatives (TA) - \$1.74 Million.

BHJ's methodology was to subtract the MPO sub-allocations above by year, from the overall (Total Available) Federal dollars leaving the yearly "ODOT Balance" amounts for the region.

Table 3 BHI LRTP 25 YEAR FUNDING FORECAST OHIO

Year	Federal	Growth Rate	State	Growth Rate
SFY21	\$11,374,199.51	0%	\$4,799,181.29	1%
SFY22	\$11,374,199.51	0%	\$4,823,177.20	.5%
SFY23	\$11,374,199.51	0%	\$4,847,293.09	.5%
SFY24	\$11,374,199.51	0%	\$4,871,529.55	.5%
SFY25	\$11,374,199.51	0%	\$4,895,887.20	.5%
SFY26	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY27	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY28	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY29	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY30	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY31	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY32	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY33	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY34	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY35	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY36	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY37	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY38	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY39	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY40	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY41	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY42	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY43	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY44	\$11,374,199.51	0%	\$4,895,887.20	0%
SFY45	\$11,374,199.51	0%	\$4,895,887.20	0%
Total	\$284,354,987.75		\$122,154,812.35	

Funding Level Projection 2021-2045			
Level	Federal	State	Total
Monetary value	\$284,354,987.75	\$122,154,812.35	406,509,800.1
In Million	284.35	122.15	406.51

Source: ODOT Office of Statewide Planning & Research

Table 4 BJJ LRTP 25-YR FUNDING FORECAST WITH FEDERAL /STATE SPLIT OHIO

	Total Available		BJJ Sub Allocation			ODOT Balance		
Year	Federal	State	STP	CMAQ	TA	Federal	State	Total
SFY21	\$11,374,200	\$4,799,181	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,799,181	\$14,851,758
SFY22	\$11,374,200	\$4,823,177	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,823,177	\$14,875,754
SFY23	\$11,374,200	\$4,847,293	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,847,293	\$14,899,870
SFY24	\$11,374,200	\$4,871,530	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,871,530	\$14,924,106
2021-2024	\$45,496,798	\$19,341,181	\$2,790,760	\$2,216,656	\$279,076	\$40,210,306	\$19,341,181	\$59,551,487
SFY25	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY26	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY27	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY28	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY29	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY30	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY31	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY32	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY33	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY34	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY35	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
2025-2035	\$125,116,195	\$53,854,759	\$7,674,590	\$6,095,804	\$767,459	\$110,578,342	\$53,854,759	\$164,433,101
SFY36	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY37	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY38	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY39	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY40	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY41	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY42	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY43	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY44	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
SFY45	\$11,374,200	\$4,895,887	\$697,690	\$554,164	\$69,769	\$10,052,577	\$4,895,887	\$14,948,464
2036-2045	\$113,741,995	\$48,958,872	\$6,976,900	\$5,541,640	\$697,690	\$100,525,765	\$48,958,872	\$149,484,637
Total (2021-2045)	\$284,354,988	\$122,154,812	\$17,442,250	\$13,854,100	\$1,744,225	\$251,314,413	\$122,154,812	\$373,469,225
Total in Million	\$284	\$122	\$17	\$14	\$2	\$251	\$122	\$373

A detailed list of fiscally constrained project list (2025-2045) has been included here. This list excluded 2021-2024 projects that has already been selected, budgeted, and adopted in the BHJ 2021-2024 TIP program. The future costs are estimated considering .5% inflation and estimates are calculated from the previous similar projects of this region. This is an estimate list and subject to change based on the future demand and need of the region. This budget is also a primary estimate and subject to change along time.

FISCALLY CONSTRAINED LIST OF TRANSPORTATION PROJECTS PLANNED FOR JEFFERSON COUNTY, OH
STATE FISCAL YEARS 2025 THROUGH 2045

Jefferson County, OH Fiscally Constrained Project List		Estimate (2025-2045)					
ID	Project Description	Projected Fiscal Year	Project Type	CMAQ	STP	TA	Responsible Agency
OH-36	Phase 4- Improvements to Lovers Lane from Fernwood Road to State Route 43 (Sinclair Ave to Fort Steuben Drive); Steubenville, OH	2025	Highway System Preservation		674,000		CITY
	Phase 5- Improvements to Lovers Lane from Fernwood Road to State Route 43 (Fernwood Rd to Sinclair Ave); Steubenville, OH	2027	Highway System Preservation		674,000		CITY
OH-08	County Highway 34 (Two Ridge Road) from County Highway 22A (Cadiz Road) to State Route 43 (Canton Road); west of Wintersville, OH	2025	Highway System Preservation		366,000		COUNTY ENGR.
OH-07	Reconstruct Ft. Steuben Drive/Mall Drive from Lovers Lane to John Scott Highway; Steubenville, OH	2026	Highway System Preservation		427,000		CITY
OH-25	CR77 (Sinclair Ave) from Lincoln Ave to Lovers Lane	2028	Highway System Preservation		865,000		CITY-COUNTY ENGR.
OH-26	SR7 from Mingo Junction North Corp to Steubenville South Corp	2026	Highway System Preservation		748,000		ODOT

Jefferson County, OH Fiscally Constrained Project List		Estimate (2025-2045)					
ID	Project Description	Projected Fiscal Year	Project Type	CMAQ	STP	TA	Responsible Agency
OH-46	Lincoln Ave and Wilson Ave Intersection Improvement	2025	Highway System Preservation		1,080,000		CITY
OH-10	Resurface South Commercial Avenue; Mingo Jct., OH	2025	Highway System Preservation		350,000		VILLAGE
OH-29	Old SR7 from Belmont Co Line to SR150A; Rayland, Tiltonsville and Yorkville	2027	Highway System Preservation		450,000		COUNTY ENGR-VILLAGE
OH-31	Franklin Ave from Franklin Ave Extension to Trenton St; Toronto, OH	2028	Highway System Preservation		430,000		CITY
OH-27	John Scott Hwy from SR43 (Sunset Blvd) to Steubenville N Corp; Steubenville, OH	2029	Highway System Preservation		1,130,000		ODOT
OH-35	Commercial Ave from Mingo Jct S Corp to Cross Creek Bridge; Mingo Jct, OH	2028	Highway System Preservation		500,000		ODOT-VILLAGE
OBR-3 / WVBR-03	New Ohio River Bridge from OH-43 (Washington Street) in Steubenville, OH to WV-2 in Brooke County, WV	2042	Highway System Preservation		2,000,000		ODOT-WVDOT
OBR-19/WVBR-04	New Ohio River Bridge from OH-7 Jefferson/Columbiana County to WV-2 Hancock County South of Chester, WV	2045	Major/New Project		500,000		ODOT-WVDOT-CITY
OH-49	CR22A (Cadiz Rd) from Springdale Ave to Two Ridge Rd, Cross Creek, OH	2025	Highway System Preservation		2,350,000		COUNTY ENGR.-BHJ MPC
OH-50	SR7/3 rd St/4 th St Intersection Improvement	2029	CMAQ/SAFETY	456,000			ODOT-BHJ MPC
OH-52	BHJ MPC Township Safety Signage Grant Program	2025-2045	CMAQ/SAFETY	400,000			BHJ MPC

Jefferson County, OH Fiscally Constrained Project List		Estimate (2025-2045)					
ID	Project Description	Projected Fiscal Year	Project Type	CMAQ	STP	TA	Responsible Agency
OH-54	SR43 Signage Replacement – Replace Fading Traffic Signs	2030	SAFETY	470,000			CITY-BHJ MPC
OH-20	SR7 Traffic Signal Renovations; Steubenville, OH	2026	SAFETY	1,286,460			CITY-BHJ MPC
OH-48	SR43 from US22 to SR646 Traffic Signal Renovations; Wintersville, OH	2031	SAFETY	400,000			VILLAGE
OH-22	CBD Traffic Signal Renovations; Toronto, OH	2038	CMAQ/SAFETY	900,000			CITY
OH-24	Mall Area Traffic Signal Renovations; Steubenville, OH	2033	CMAQ/SAFETY	445,000			CITY
OH-53	SR151/CR19 Roadway Realignment/Intersection Improvements New Alexandria	2042	CMAQ/SAFETY	200,000			ODOT-COUNTY ENGR.
OH-21	CBD Traffic Signal System; Steubenville, OH	2032	CMAQ/SAFETY	1,900,000			CITY
ORS-03	Annual Rideshare Program	2025-2045	CMAQ	1,800,000			BHJ MPC
OBR-20	Rehabilitate Bridge KNO-T289-0.06 - Knox Township	2026	CMAQ	2,780,000			COUNTY ENGR.
OBR-17	Bridge Replacement: CR53 over Brush Creek, Ross Twp.	2033	BRIDGE PRESERVATION		1,937,490		COUNTY ENGR.
ORS-05	Park and Ride: Wellsburg Bridge, Brilliant, Ohio Along SR 7	2025	BRIDGE PRESERVATION		170,000		ODOT-BHJ MPC
OTA-02	Ohio River Front Trail	2027	CMAQ	599,984			CITY-BHJ MPC

Jefferson County, OH Fiscally Constrained Project List		Estimate (2025-2045)					
ID	Project Description	Projected Fiscal Year	Project Type	CMAQ	STP	TA	Responsible Agency
OTA-13	Streetscape in Steubenville – 4 th St from Washington St to Market St	2029	TA			500,000	CITY
OTA-15	Beatty Park Bridge – Repurpose Bike Lane	2037	TA			700,000	CITY
OTA-05	Converted Rail Trail and On-Road Trail from Yorkville to Toronto	2045	TA			130,000	CITY-VILLAGE
OTA-03	Converted Rail Trail from Jefferson/Harrison County Line to Dillonvale	2040	TA			135,149	COUNTY ENGR.
	Ohio Total Expected Expenditure Budget (2025-2045)			11,637,444	14,651,490	1,465,149	Fiscally Balanced
	Ohio Expected Revenue (2025-2045)			11,637,444	14,651,490	1,465,149	

FISCALLY CONSTRAINED LIST OF TRANSPORTATION PROJECTS PLANNED FOR BROOKE & HANCOCK COUNTY, WV
STATE FISCAL YEARS 2025 THROUGH 2045

Brooke & Hancock County, WV Fiscally Constrained Project List			Estimate (2025-2045)				
ID	Project Description	Projected Fiscal Year	Project Type	Estimate Total	Federal 80%	State 20%	Responsible Agency
WVH-01	CR 13 (Three Springs Drive) from US Route 22 to CR 507 (Cove Road); Weirton, WV	2025	Major Highway Project	5,000,000	40,000,000	1,000,000	WVDOH
WVH-03	US Route 30 from 0.80 miles east of the Ohio State Line to Pennsylvania State Line; Hancock County, WV	2026	Major Highway Project	4,500,000	36,000,000	900,000	WVDOH
WVH-05	Relocate State Route 2 from New Cumberland South Corporate Limits to Chestnut Street; New Cumberland, WV	2027	Major Highway Project	9,000,000	72,000,000	1,800,000	WVDOH
WVH-07	State Route 2 (Commerce Street) from State Route 67 (Bethany Pike) to 12th Street; Wellsburg, WV	2028	Major Highway Project	1,300,000	10,400,000	260,000	WVDOH
WVH-10	Improvements to State Route 105 (Pennsylvania Avenue) from State Route 2 (Main Street) to Pennsylvania State Line; Weirton, WV	2027	Major Highway Project	2,370,000	18,960,000	474,000	WVDOH
WVH-14	SR2 (Commerce St) and SR27 (Washington Pk) Intersection Improvement; Wellsburg, WV	2030	Major Highway Project	3,000,000	24,000,000	600,000	WVDOH
WVH-17	CR7 (Cross Creek Rd) and CR7/1 (Rockdale Rd) Intersection Improvement; Brooke Co, WV	2035	Major Highway Project	2,700,000	21,600,000	540,000	WVDOH
WVH-06/15	Relocate State Route 2 (Main Street) from County Route 7 (Bruin Drive) to County	2040	Major Highway Project	2,500,000	20,000,000	500,000	WVDOH

Brooke & Hancock County, WV Fiscally Constrained Project List			Estimate (2025-2045)				
ID	Project Description	Projected Fiscal Year	Project Type	Estimate Total	Federal 80%	State 20%	Responsible Agency
	Route 8 (Archer Heights Road); Follansbee, WV						
WVH-20	Projected funding available to WVDOH to adequately maintain and inspect bridges and roads not identified in the plan	2025-2045	Maintenance	57,021,000	456,168,000	11,404,200	WVDOH
WVH-16	Redesign of Intersection at Freedom Way and Birch Drive in Weirton, WV	2033	CMAQ/SAFETY	527,000	4,216,000	105,400	WVDOH
WVH-21	Follansbee Traffic Signal System Renovations	2030	CMAQ/SAFETY	750,000	6,000,000	150,000	WVDOH
WVH-22	Wellsburg Traffic Signal System Renovations	2027	CMAQ	800,000	6,400,000	160,000	WVDOH
WVH-39	Weirton Traffic Signal System Renovations; Weirton, WV	2037	CMAQ	830,000	6,640,000	166,000	WVDOH
WVTA-01	Panhandle Trail; Weirton, WV	2034	TA	250,000	2,000,000	50,000	WVDOH
WVTA-02	Brooke Pioneer Trail; Brooke County, WV	2040	TA	400,000	3,200,000	80,000	WVDOH
WVTA-05	Ohio River Trail from Weirton to Tomlinson Run; Hancock County, WV	2045	TA	1,250,000	10,000,000	250,000	WVDOH
WVTA-03	Wellsburg Yankee Trail; Wellsburg, WV	2045	TA	300,000	2,400,000	60,000	WVDOH
	WV Total Expected Expenditure Budget (2025-2045)			92,498,000	73,998,400	18,499,600	Fiscally Balanced
	WV Expected Revenue (2025-2045)			\$92,498,000	\$73,998,400	\$18,499,600	

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EXTREME WEATHER/CLIMATE CHANGE VULNERABILITY

Climate change and assessing the vulnerability of the transportation network present many challenges. Transportation planners and engineers must plan, design, construct, operate, and maintain a surface transportation system according to climate variations and probable intensities of extreme weather events. The BHJ Region is very susceptible to events such as flooding, freeze thaw deterioration, and intense thunderstorms. Such events lead to road slippage, rock falls, landslides, weakened infrastructure, and power outages. These events lead to road closures and detours affected the area's ever-fragile economy. These negative impacts cause motorist and freight delays through detours and accidents, loss of life as well as the time and resources spent by highway crews and emergency responders to mobilize, close a road, set up detours, and clean landslides.

BHJ's objective is to increase the security of the transportation system for motorized and nonmotorized users by planning and creating a highway system that permits efficient and safe deployment of emergency services during times of accident, flooding, other natural disaster, or national emergency. At all times, highway officials should strive, at a minimum, maintain two highway and one pedestrian Ohio River Bridge crossings as contingency options for National Guard, safety, security, and emergency services between Jefferson County, Ohio and Brooke and Hancock counties, West Virginia.

Projects for Consideration (Illustrative)

The Ohio and West Virginia typically used Federal Emergency Repair funds for project reconstruction due to damage from extreme weather events. The following is a listing of potential projects in areas vulnerable to rock falls and landslides:

- SR7 from Mingo Junction North Corp to Steubenville South Corp
- SR2 from Wellsburg to Follansbee
- SR2 from Beech Bottom to Wellsburg
- SR2 from Weirton to New Cumberland
- SR2 from Newell to Chester.

APPENDIX - A

DEMOGRAPHIC, ECONOMIC AND EMPLOYMENT INFOGRAPHICS FOR FOCUS GROUP DISCUSSION AND DISTRIBUTION

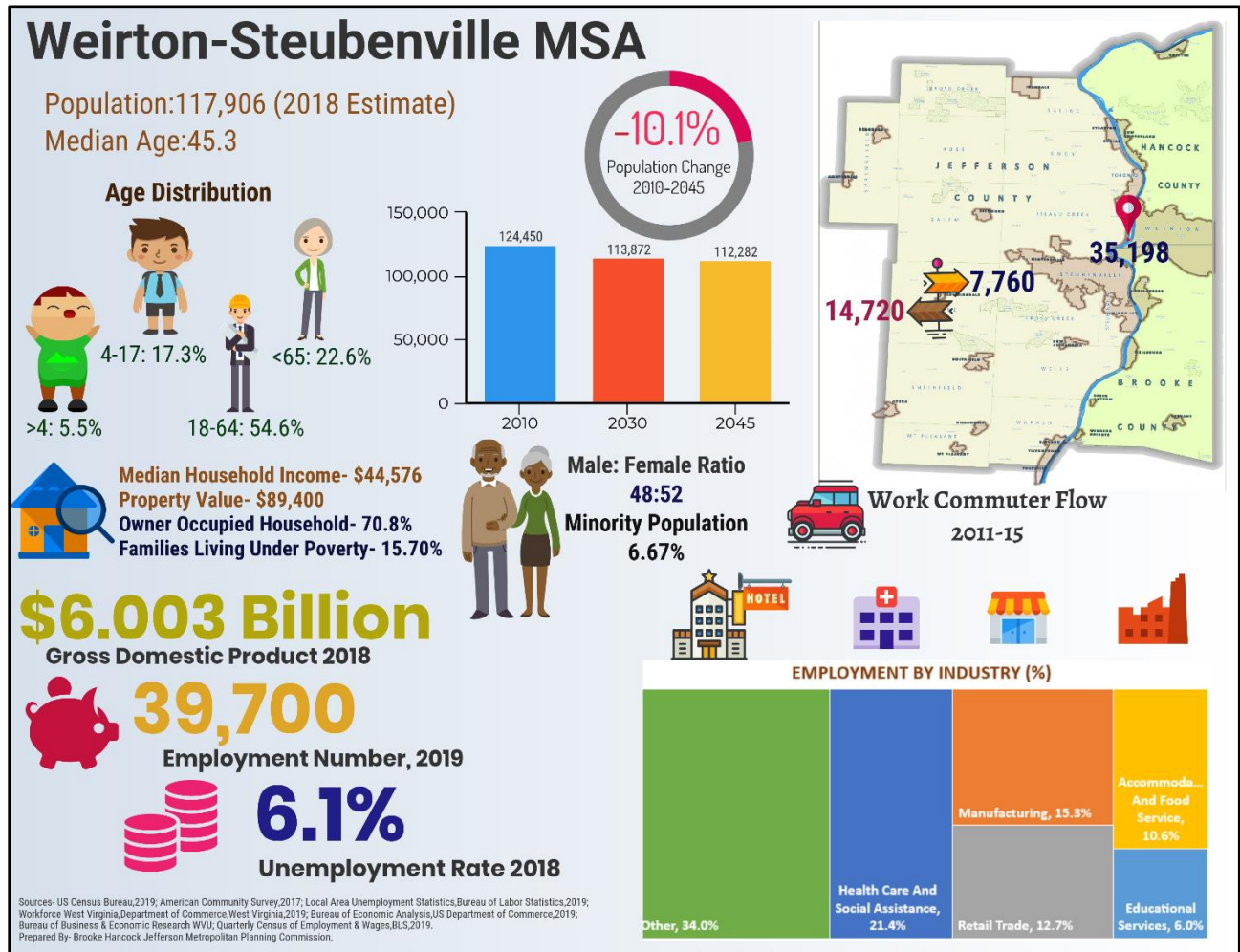


Figure 1 - Weirton- Steubenville Metropolitan Statistical Area Overview

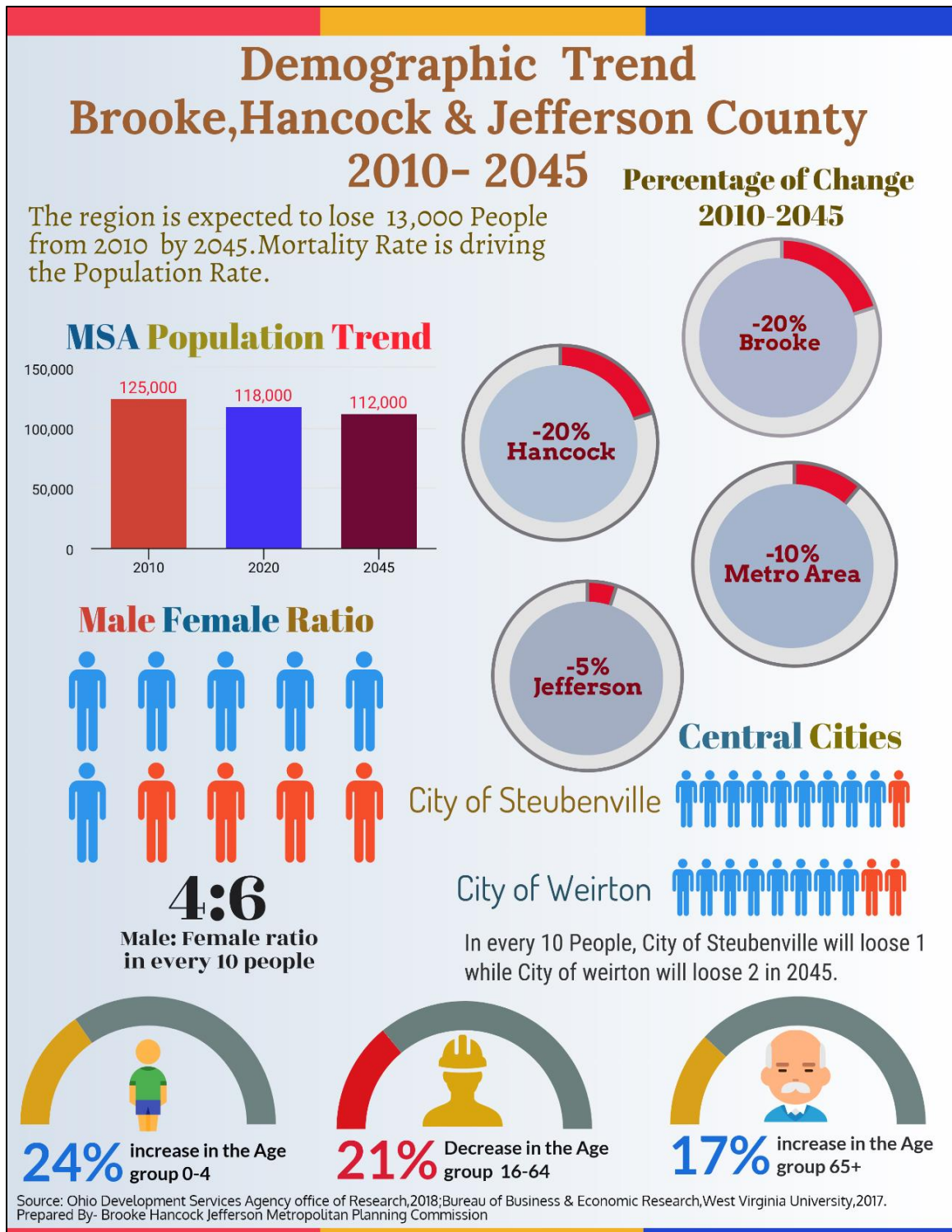


Figure 2 - Demographic Trend Infographics for Public Opinion and Focus Group Discussion

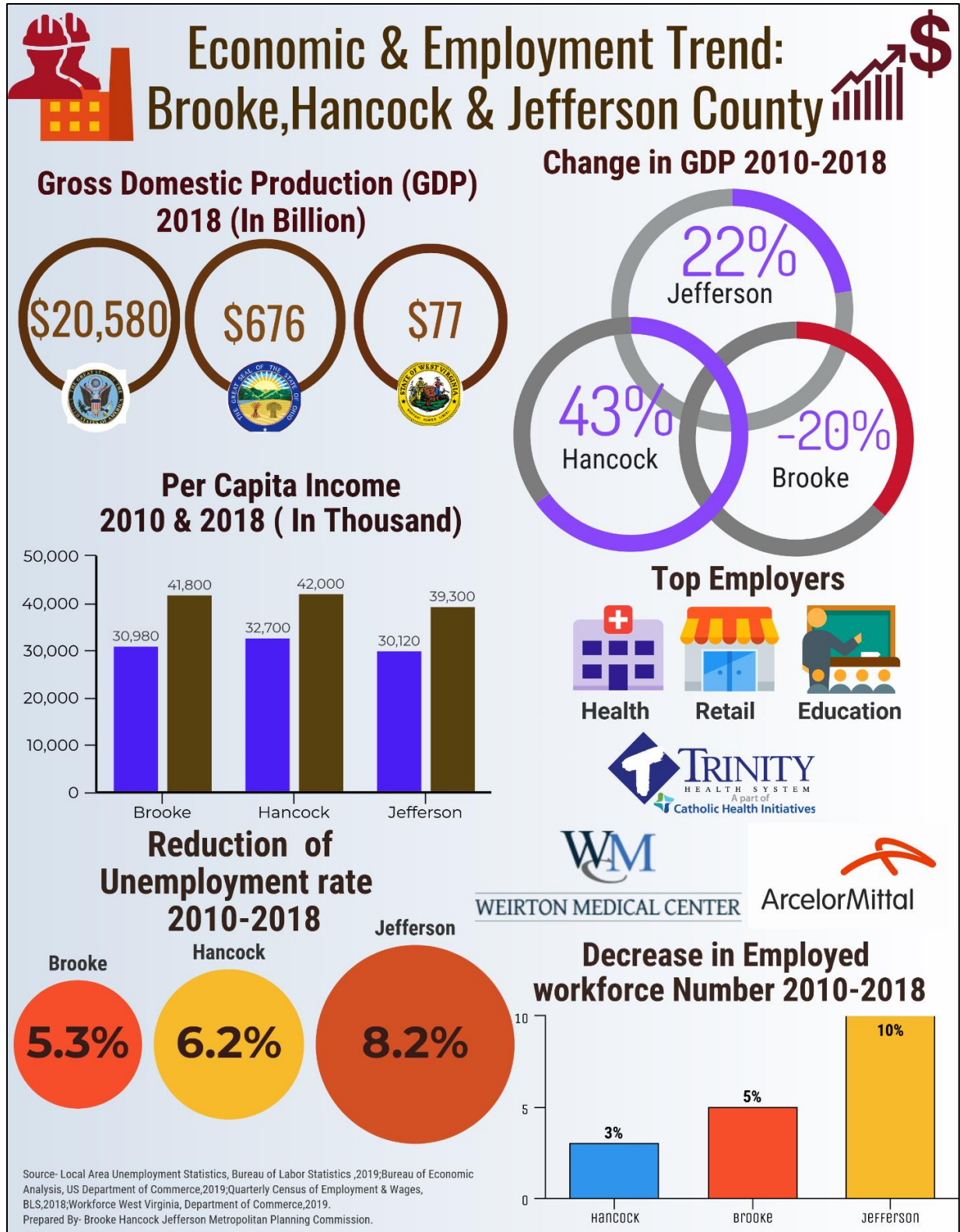


Figure 3 - Economic & Employment Trend Infographics for Public Opinion and Focus Group Discussion

APPENDIX B
PUBLIC OPINION SURVEY

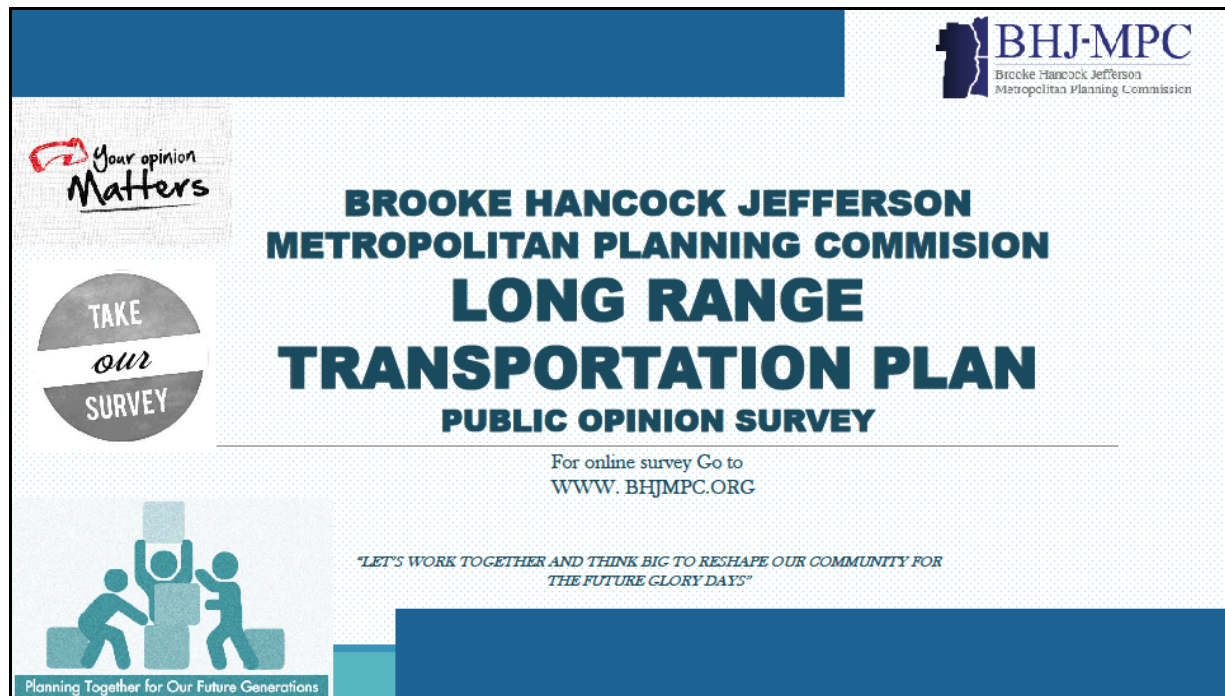


Figure 4 - Banner for meetings and Outside Public involvement

APPENDIX C

DETAILED QUESTIONNAIRE OF THE SURVEY

2/14/2020

BHJ-MPC LONG RANGE PLAN PUBLIC OPINION SURVEY

BHJ-MPC LONG RANGE PLAN PUBLIC OPINION SURVEY

Thank you for participating in our event.

We want to hear your feedback so we can keep improving our Long Range Plan. Please fill this quick survey and let us know your thoughts (your answers will be anonymous).

*** Required**

1. In which county you live? *

Check all that apply.

☐ Jefferson

☐ Brooke

☐ Hancock

Other: ☐ _____

2. What is your age group? *

Mark only one oval.

☐ 18-22

☐ 23-30

☐ 31-40

☐ 41-50

☐ 51-60

☐ 61-70

☐ 70+

<https://docs.google.com/forms/d/1JydoqtDl92UdLdHgCZRYCJrbxn6JZZPhndUo0gJh00I/edit>

1/5

3. Rank the following Transportation Priorities *

Mark only one oval per row.

	Not Important	Less Important	Important	Very Important	Extremely Important
Improve Roadway Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More transportation choices such as Uber, Lyft, car pool, van pool, and taxi services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintain existing infrastructure (roads, bridges, culverts etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expand public transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construct more trails, bike- ways, and pedestrian walkways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved freight movement (railroads & river ports)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More investment in brownfield re-development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve air and water quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. With limited transportation funds available, do you support investing the funding to:

*

Mark only one oval.

- ☐ Maintain existing Highways and Bridges, or
- ☐ Develop new Highway Corridors into the Steubenville-Weirton Area

5. Which transportation mode is important for sustainability and economic growth? *

Mark only one oval.

- ☐ Privately-Owned Vehicles
- ☐ Public Transportation
- ☐ Ride Share and Van Pool Services
- ☐ Taxi or App-Based Options such as Uber and Lyft
- ☐ Pedestrian, Bike and Other Recreational Choices

6. In your opinion which factor is most important for our three-county (Brooke, Hancock, and Jefferson) area's future growth? *

Mark only one oval.

- ☐ Residential Development
- ☐ Recreational Facilities
- ☐ More Business Development
- ☐ Safety & Security
- ☐ More Alternative Transportation Options

7. In your opinion, "is the availability of low-cost high-speed internet important for our region's future economic growth?" *

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Maybe

8. Do you believe self-driving vehicles have a future in our three counties? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

9. Do you think the region is prepared for the adverse impacts of "Climate Change"? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Climate Change is hoax
☐ Maybe

10. Do you agree that "our region's economy is moving in the right direction"? *

Mark only one oval.

- ☐ Yes
☐ No

11. Additional feedbacks

APPENDIX- D

ONLINE & MEDIA INITIATIVES FOR PUBLIC INVOLVEMENT

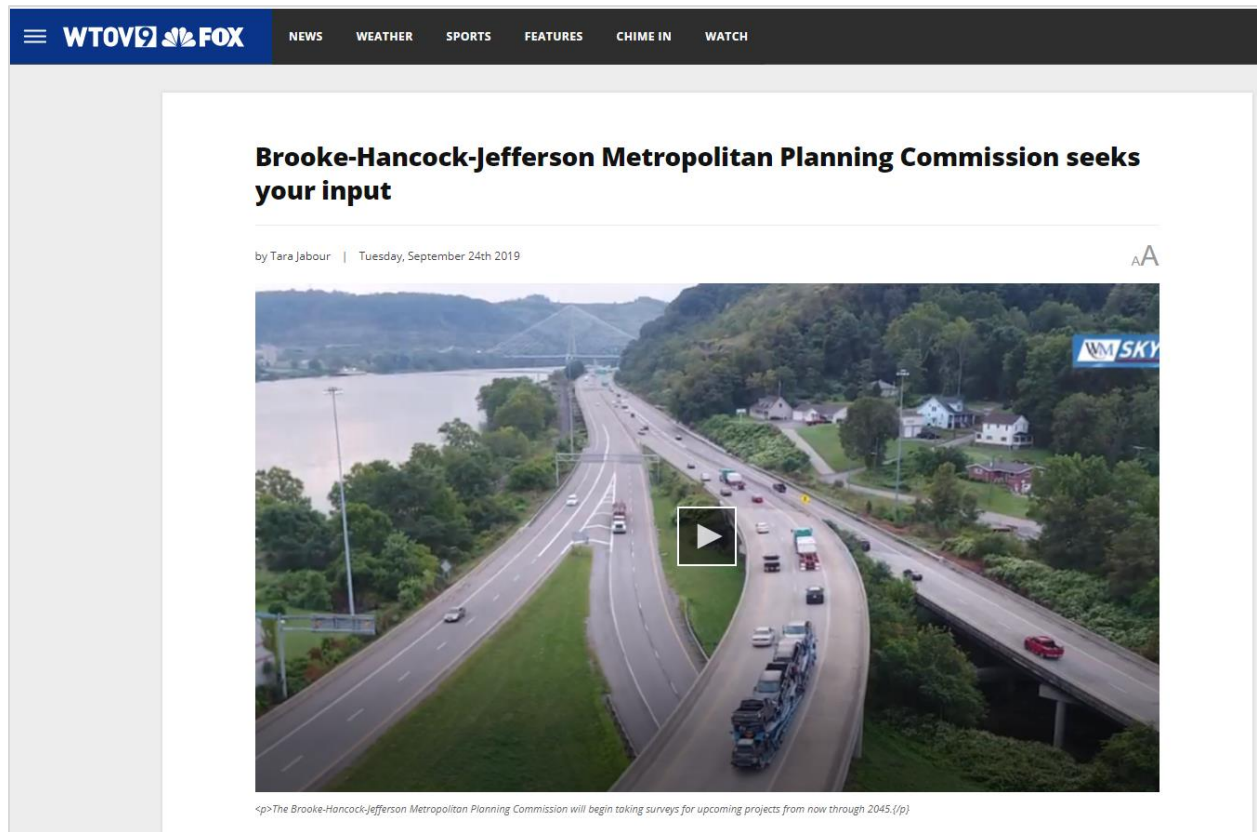


Figure 5 - Media Coverage of the Public Opinion Survey



Figure 6 - Online Initiative for Public Opinion Survey



Figure 7 - Safety Window Initiative as a part of LRTP 2045 Public Involvement

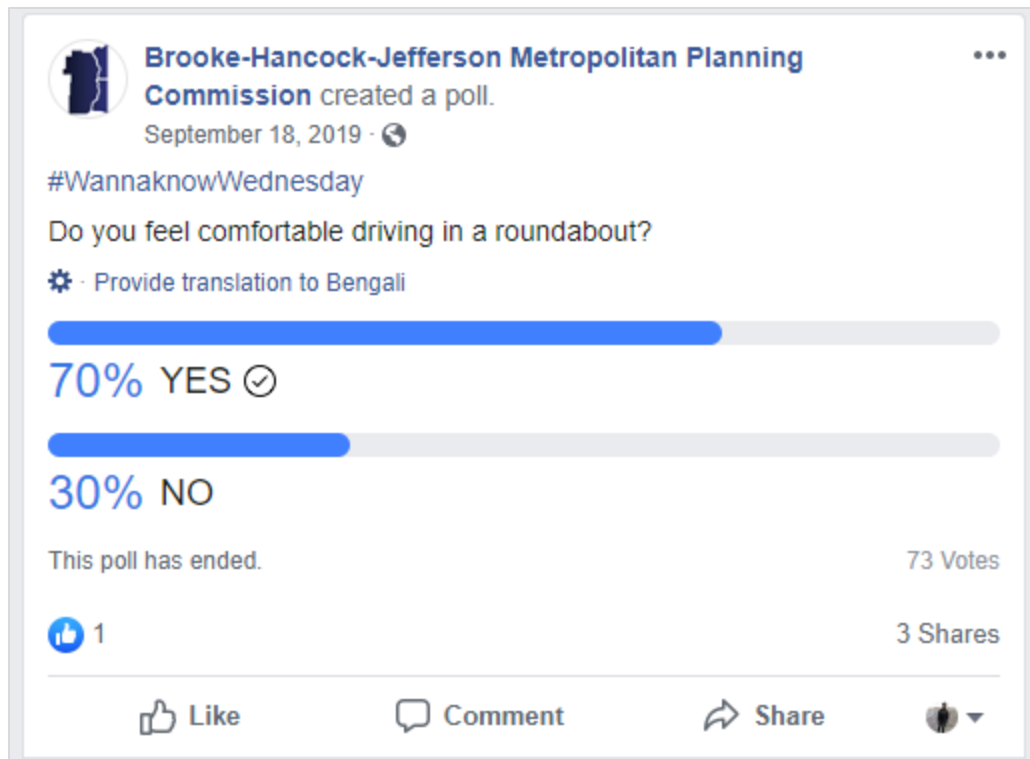


Figure 8 - Regular Online Voting based Public Involvement initiative of BHJ - #WannaknowWednesday

APPENDIX E
ADDITIONAL COMMENTS COLLECTED FROM SURVEY

*The comments have been presented here without any edit, format or correction.

Public transportation (22)

- Business development and public transportation can work in tandem to continue to impact the region's economic growth, but the infrastructure should be the highest priority since it is the circulatory system of the body of the region.
- I think the area is finally looking toward the future, but unfortunately, things have been left idle for too long making the infrastructure and workforce in an unhealthy state and not readily available to handle much uptick in economic development. Public transportation that actually encompasses a wider area and has more scheduled routes, making it convenient for people needing to go to work, as well as those wanting to have an evening out without the worry of driving, would be a great asset. However, a campaign to change people's view of public transportation is going to be essential. I've seen how well public transportation works in Europe and Australia. It's second nature for people to use it daily. Here, people look down on it but with the aging population, a reliable, efficient, and farther-reaching system would have a positive impact on the area.
- I live in southern Jefferson County, which gets zero attention. Three hospitals in this area have closed. The economic boom has reached some in this area with the gas and oil business, but certainly not all. Public transportation is an absolute must. I recently visited Salt Lake City, UT and was amazed. Very clean, bikes everywhere for public transportation, and no need to drive. We did Lyft everywhere!
- There is an absolute lack of transportation for residents in Jefferson, Brooke, and Hancock counties. Residents in Chester and Newell WV are all but stranded. The Weirton Transit Corp. bus route does not extend outside the Weirton City limits. The CHANGE bus is available for many Brooke and Hancock County residents, but does not cover the Chester and Newell areas. Rural areas off of Route 2 in Brooke and Hancock Counties and Route 7 in Jefferson County are severely under served with transportation opportunities. This lack of transportation causes lack of jobs, which negatively effects the economy.
- The commute info from Weirton to Pittsburgh needs to have hourly trips to the city.
- If the infrastructure of our roads and bridges are to be preserved and upgraded careful thought needs to be put in to the scheduling of such- not every road and/or bridge can be worked on simultaneously as is common practice. Van pool, ride share, and other shared transportation options will also help eliminate SO much private traffic that is overwhelming the system. maybe give employees an incentive or tax break for choosing to use a public transport method rather than private transport to help alleviate congestion.

- Transportation improvements should include better access -- buses, perhaps -- from local towns to other local and regional towns and cities. Chester to Weirton. Weirton to Wellsburg. And maybe to/from Bethany, for any students who want to commute. Any and all of those to Pittsburgh and to Wheeling! There are a couple of bus routes a day between Weirton and Steubenville, but this is hardly even scratching the surface!
- Public Transportation is needed for the people in this area due to the high number of people without a DL.
- Low cost public transportation is important and not just in urban/suburban areas.
- Public transportation (affordable) is critical to helping people secure and maintain employment and will help our community out economically in many ways!
- More assistance for those unable to drive. More public transportation. Finish the bike trail!
- How about a bus route that works for students and faculty in the La Belle & Brady area. The bus goes the WRONG way for this group.
- I believe the economy is very strong at this time. I believe more people could work if they could get to work, not just 9-5 but all hours of the day. A better public transportation system could help in that endeavor.
- We need uber / lift.
- More transportation options than weir-cove taxi. Expanded bus service.
- Public transit is very important.
- Need transportation for people without cars. It only goes to Wintersville. How about Weirton they are booming with business and we in Jefferson are NOT!!!
- Medical transportation, medical appointments for different people on the same day that's in the same household should not be an issue. Need more people to transport disabled, behavioral, mental health people.
- We need transportation for employment opportunities.
- Our region needs to address the needs of an aging population as well as to provide for the needs of a more diverse and younger family - based population. Public transportation, perhaps driven by technology, and also electric - fueled vehicles will be very important to people my age. At the same time, recreation based facilities, new housing and better transportation infrastructure is critical to growth and the quality of life of any small town region.
- I see a need for some sort of transportation to areas such as - Steubenville Mall area, Robinson mall area, etc.
- Transportation is a big part in helping the economy get better.

Economic & Residential Development (30)

- Don't know if you can see my explanation of "other" above. Must have residential development along with business development.
- Infrastructure and economic development (retention, expansion and new business) is critical for our region. We need to build the tax base for long-term sustainability. Too many agencies conducting too many surveys which continues to result in duplication of efforts and resources.
- The area needs to attract high tech industries. It needs to move away from steel and focus on other areas tech, light industrial manufacturing, etc.
- Welcome small businesses and manufacturing.
- I have seen more economic growth in the last five years in our area. I believe we need to add more transportation options.
- The economy is moving in a positive direction, but it seems to be behind most area across the country that are comparable in population.
- Better Roads, Better Schools, More Recreational Facilities for Something to do close to home instead of driving to Robinson or PGH.
- As far as Jefferson County they should bring new businesses in and stop all the tide in politics so the city can grow and be more pro-active. It's a shame how Weirton and surrounding cities are growing and were still hiring in such a declining area. Terrible-Terrible.
- I am devastated to see how a city with such a small population as Weirton WV is growing and thriving in business and infrastructure. And here in Steubenville Ohio approx: 3 minutes away we are not growing at all but declining.
- Need to improve our business and city appeal. Fix what we have, better priorities and updates.
- There is an over dependence of our local economy on oil and gas. All this has done to the area is drive up real estate and cost of living. Long term these jobs are transient. The migrant workers who are in the area have no long term investment in our community. The way mineral rights are regulated in Ohio mean that few will benefit, but all will feel the "cost" of developing these resources. With good highways, rail, and river transportation and nestled between major cities, our communities should be developing more rapidly than they are. The question is why are our communities not attracting more business and industry?
- Climate change is a natural phenomenon. Humans can not control or alter the weather/climate. Nothing will improve with our economic growth until the same old leaders and politicians are removed. Go anywhere in our country and see the improvements in infrastructure, transportation, job growth and etc. ANYWHERE except Jefferson County and the Ohio Valley.
- The area needs to market itself as a suburb of Pittsburgh with lower cost of living. More industry will not do this and only sets the area back.
- The young in this area need good paying jobs.

- The economy of Steubenville is not as big a focus as it should be. Weirton however is just the opposite. They are getting ready to take advantage of future growth opportunities.
- The majority of non-natural gas related development is retail, and the gas industry is eventually going to subside with the amount of permanent jobs decreasing with it. There has been no concrete information about possible redevelopment of the old Weirton Steel property. We also have aging population and poverty issues which need to be addressed if you want to draw new business to the area.
- We are starting to move in the right direction, but very slowly. We do need residential development including a variety of housing types including those using the features of universal design, but that doesn't mean tear down and start over. We are missing some big opportunities to rehab some of the current housing stock and create neighborhoods, not developments where everyone goes out in their cars and you never see the person next door. While many will want the independence of their own cars, we need to make things more walkable for those who are able, and have alternative transportation for those who aren't able. With more singles and aging baby boomers living alone, there are needs to get to medical appointments and tests without driving.
- I believe that more business development is important, but the focus should be on small businesses, not more giant conglomerates. The way to differentiate our towns from all the other towns is not by adding more Wal Marts.
- I also think bringing businesses here is the start. That brings in revenue for everyone. Once the businesses begin to flourish, then other things can be built. Maybe just start a Small Business Campaign.
- Downtown Weirton needs to be revitalized! All State & Federal Grant money is going to Three Springs Corridor.
- Our region is not moving forward fast enough. We must have opportunities available that help retain our young people. We need family sustaining employment.
- Need more business development and good paying jobs.
- Need store of all kinds in Wellsburg, WV.
- Need more support for business development. Roads are deplorable. Need stronger leadership.
- The elderly and teenage generations have the disposable income in this area. Stores need to cater to that.
- Question #6: Business development and safety-security go hand in hand, but business needs to come first to help pay for the security.
- Without new business downtown, our town will become more the "donut hole" effect! Biz and infrastructure= Tax base and improvements! (Quality of life).
- Better jobs needed.
- I would like to see Aldi here in Weirton and possibly Sam's Club. A used bookstore would be nice, too.

- Please remember the economic potential in Southern Jefferson County.

Infrastructure (19)

- Maintaining all existing infrastructure is vital. Businesses and families do not relocate to areas with failing roads, water and sewer systems, and polluted air.
- There needs to be another bridge across the river. From the foot of Rt. 8 over to Empire would be a perfect spot.
- No use for new roads. Anytime we open a roadway to for lanes. You choke it down with speed limits, school zones, and red lights. You took a two lane with a exit and turned. It into a one lane with a exit, that does not make sense. But I know you bowed to Franciscan. Going backwards not forward.
- Too much overpromising and underdelivering, terrible terrible terrible bridge interchange at memorial bridge in Steuben. Confusing intersection and lights.
- To really grow get a 4 lane highway from Pittsburgh Pa to Columbus Ohio and also keep the pot holes filled.
- The engineer that designed the route 7 interchange in Steubenville should be punched in the face. Also, 22 east bound at the veterans bridge from route 7 south should never have been reduced to one lane, thereâ€™s been many accidents, and a lot of drivers cutting over at the last minuet.
- Safety issues at the intersection of Mahan and Route 2. There needs to be a traffic light at that intersection.
- the new bridge is a waste of money.
- This area needs at least 1 more bridge. Waterfront development is sorely lacking. Road and highway maintenance is/should be of the utmost importance.
- It is always difficult to decide whether to maintain or replace something, and one answer doesn't fit all the questions. I believe every project should be addressed individually, ie: one municipality's water system might be so decayed that replacement is the only option, while another system might only require a good overhaul to continue serving for another 50 years. One area might truly benefit from Uber and Lyft services while another desperately needs bus and taxi service. Y'all are smart people. Just think things through and do the best you can.
- We need better infrastructure. We need more people who care about the area we live and make it more about downtown.
- The area needs to prepare for electric vehicles-charging stations, etc.
- THERE NEEDS TO BE ACCESS TO THINGS LIKE UBER AND LYFT IN THE WEIRTON AREA SPECIFICALLY. THE CAB COMPANY CHARGES WAY TO MUCH, THEIR CARS ARE NOT SAFE TO DRIVE AND THE DRIVERS ARE SOMETIMES TERRIBLE. I WOULD PERSONALLY BE A UBER DRIVER OR USER IF IT WAS IN TE AREA.

- A lite rail system from Steubenville, Weirton, Imperial, Robinson. Could title it: "Connecting Communities thru Rail"™. Railroad system is expensive though. Just a thought.
- stop wasting tax payers money. no new bike trails, walking paths. look at the ones we have. barely used.
- I believe and would like to see more bridges to the north of 22 one close enough if there is an accident and or construction on 22 West bound before the bridge and rt 2 south so that you get across the river without going up all the way to the Newell or rt 30 bridge to go north just to go south is pointless especially able to see Toronto just over the river passing our house on the other side plus having a bridge like between weirton and costonia exit over Brown's island able to connect rt 2 and Pennsylvania ave and to downtown weirton to rt 7 will help 22 to the north another either the 4th st exit across or by 152 across would help increase traffic on both sides of the river to like sparkle mountain race track and gaming resort plus the increase to Toronto empire and Stratton and surrounding area also to rt 8 faster to go to Thompson run park or the drive in and another way one from Ohio could go up to 30 or one from west Virginia or Pennsylvania could go to ohio.
- The roads shouldn't be falling apart. There should be easier ways for non-licensed citizens to get around. Climate change is real and deadly and we need to prepare for it. Instead of spending money on what we don't have - spend what little money there is fixing up what we already have.
- In addition to major roads they need to also focus on rural communities' roads and drainage control. This is a mountainous area with excess water from the hills which is damaging existing roads.
- We need to tax oil and gas company more. They are going to take billions out of W.V and leave only bad roads and pollution.

Other (29)

- More pressure needs to be placed at the state levels (especially WV) to return our tax dollars in road maintenance and improvements.
- Excellent survey questions. Right on issues that this area need attention. This area is fortunate to have a visionary organization like BHJ and whoever is fueling this project.
- Never heard about this organization in the past. But Looks like tryin to do good for the community. Wish the old one's learn something from BHJ. Go ahead!
- We need new ideas, new people in the politics and in other development organizations.
- For the 1st time in years I am excited about the serious effort of tri-state planning and business development.
- We want coordinated economic and transportation development plan (WV-OH) for our area. BHJ should lead the way.
- Keep it moving. Thank you!
- Mr. Ford has done an excellent job!

- PAT FORD WAS A CHARLATAN AND A FRAUD. HIS SUCCESSOR SHOULD BE CAREFULLY CHOSEN.
- Mr. Ford hired an exponent person. First he looked suspicious but seem like he knows what he is doing. BDC is taking this region forward.
- Slumlords on City council's and Sheriff's departments that let share the deputies get away with molesting young girls as long as we got people in power they're doing it for their own personal gain it's going to get nowhere.
- I am being denied medical services at the WMC because I am alone/single. This could be a life or death situation!! Money/insurance is not the problem!!
- It's hard to admit, publicly, that the issue this area has is low-income, crime ridden and drug infested communities. Need to start catering to the middle class, invest in beautifying the areas. Last thing people want to see is HUD owned properties that paint nothing but a poor picture of this area.
- God is in control of the climate, change, global warming, etc. Think about this: If we did not have global warming from the beginning of time, we would still be living in the ice age! (Not worried about it!)
- I stated above what I think really needs attention about the roadways. I believe whoever made this survey genuinely cares about what the public thinks. I have lived in Hancock county all my life and with my job has talked with the commission about our water quality and improving the water system in general. I know of at least 2-3 water projects that are happening now to improve the water systems and I'm involved in one of them. I believe that needs to be a future focus because these water systems are only getting older. I think that really needs to be a focus in the future because the system will only become more costly to maintain. Again thank you for your time and I hope I helped a little bit with the feedback you are trying to seek.
- I just want a Target. Please.
- Unfortunately, our community is still struggling to find a way to grow that is not harming the environment/community health/ infrastructure. By no means am i saying that this area is the worst in WV or OH; it's very good compared to the rest WV/OH. looking across both states, it is a shame what is happening, more flooding, more pollution, more abuses of community. the states (including us) have chosen to ignore (or in some cases reject) the existence of these issues and now are subject to it finally. To leave you with a quote: "What is the use of a house if you haven't got a tolerable planet to put it on?" - Henry David Thoreau
- We need to prioritize removing dependence on non-renewable resources, improving and maintaining failing infrastructure, making resources available and accessible to everyone (not just those who are capable of driving and have a car), follow California's example and immediately begin programs like mandated recycling to combat the impact of environmental problems.
- some of the questions need more options to send an answer other than the ones provided as someone else's view rather than mine.
- We need to "climate change"-proof our region's economy. We are too dependent on industries (e.g., fossil fuel industries) that have an expiration date in a sustainable world.

- What the heck is with the "climate change is a hoax" answer?
- I'd like to see this area embrace climate change requirements but I don't believe the majority of the people will until the last second.
- Climate change is questionable. If there weren't changes we would still have dinosaurs.
- Climate Change- switching our season patterns would take some work. Crops grown, flood patterns etc.
- County needs to try to house some of these homeless people better or provide a mental hospice to those who qualify. (Which is most.)
- More people leave than stay because there are almost no good opportunities.
- Get rid of nepotism and red tape.
- More police in all 3 counties/ more drug bust!!!

APPENDIX – F

SURVEY FINDINGS PRESENTATIONS

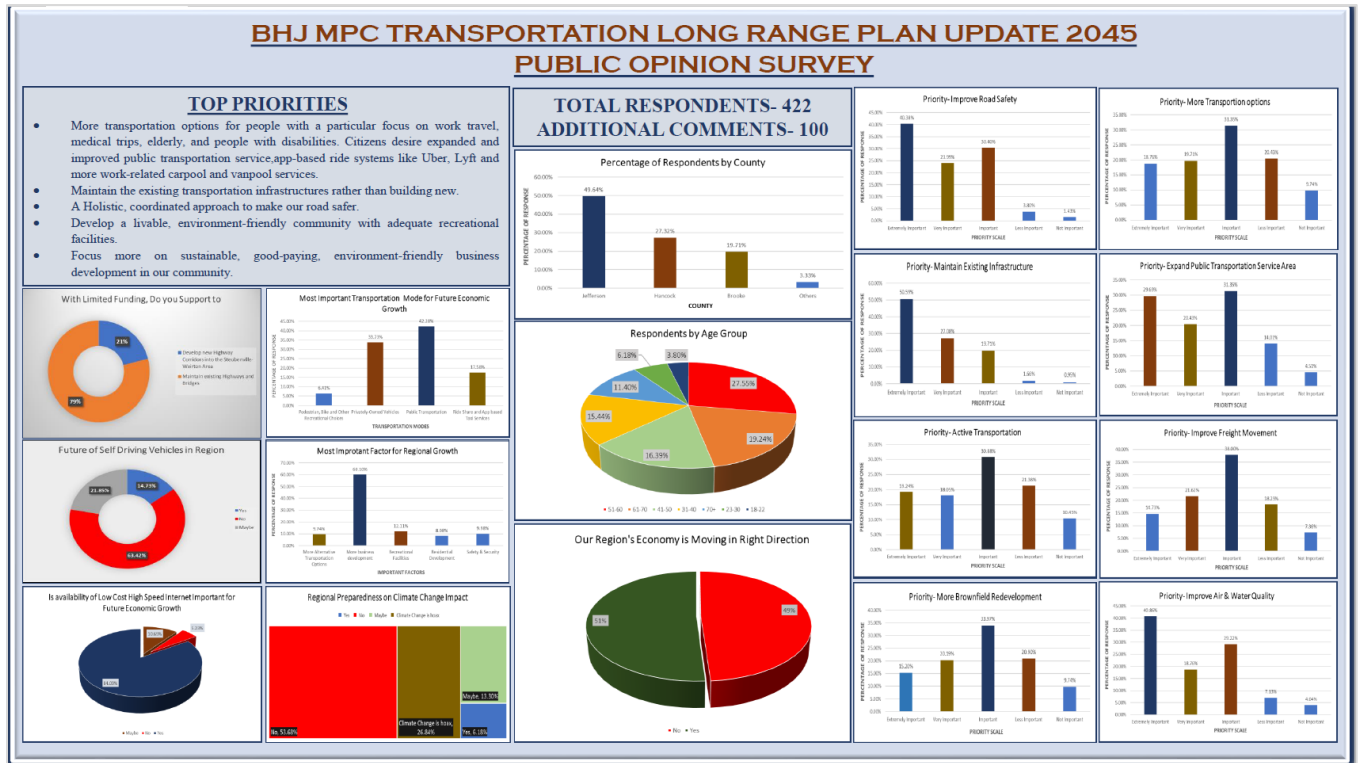


Figure 9 – Final Findings Panel Presentation for TAC/Policy Committee Meeting

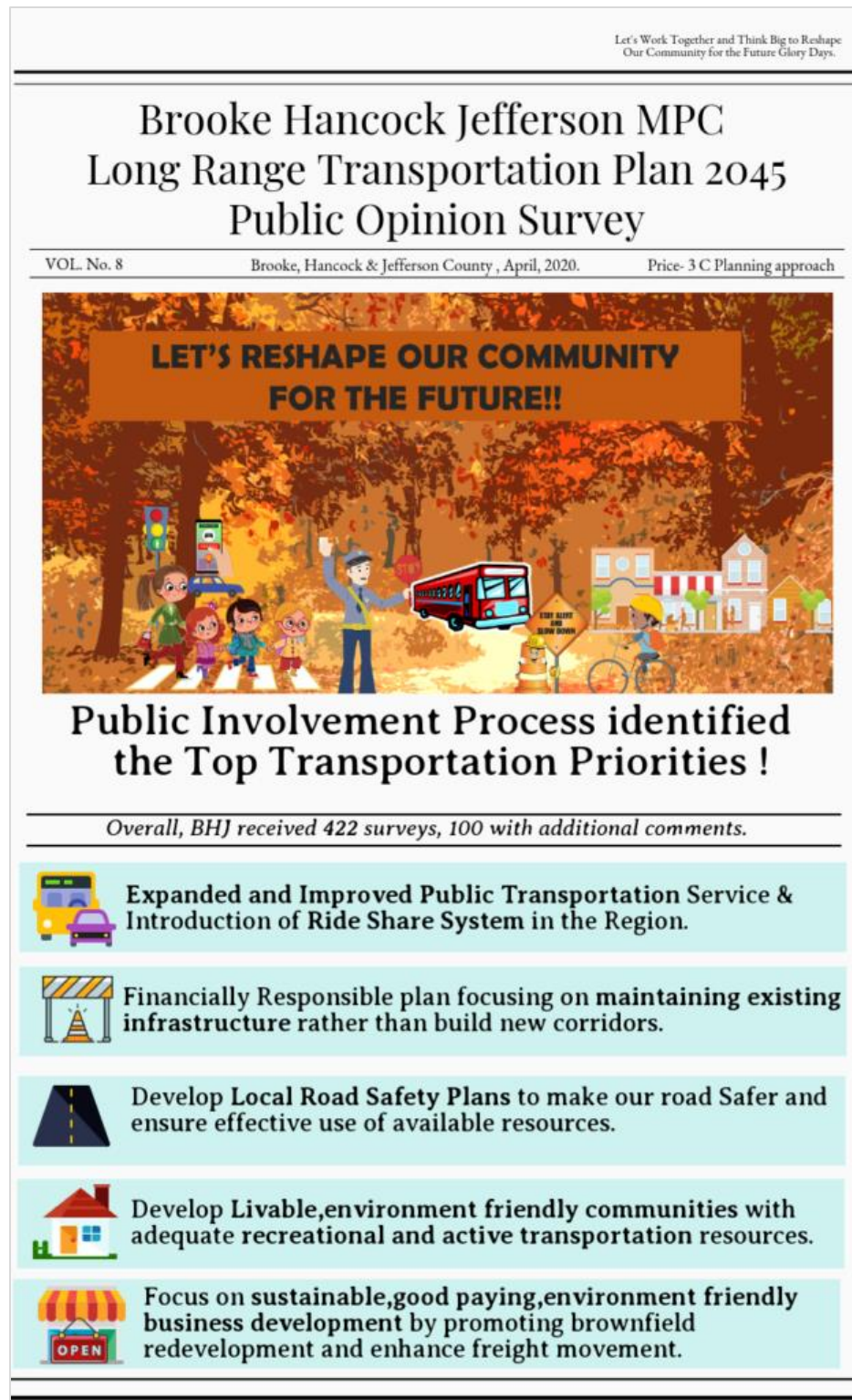


Figure 10 - Final Survey Results and Goals of LRTP 2045 Infographics for Distributions

PRESENTATION SLIDES OF JANUARY 22ND TAC/POLICY MEETING ON LRTP 2045



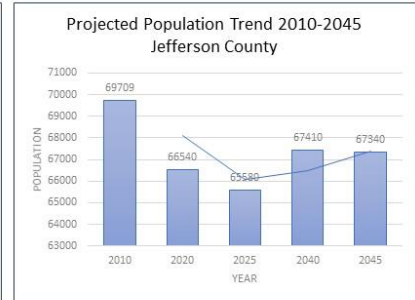
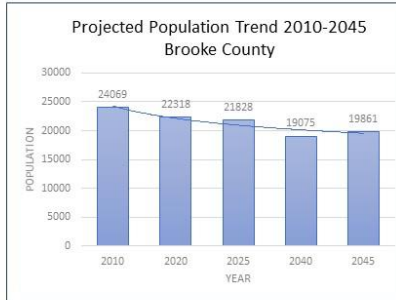
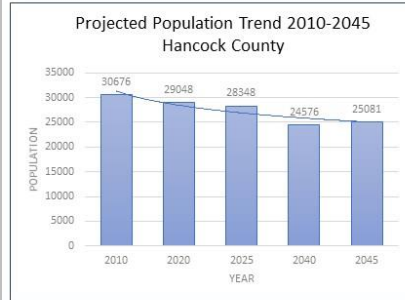
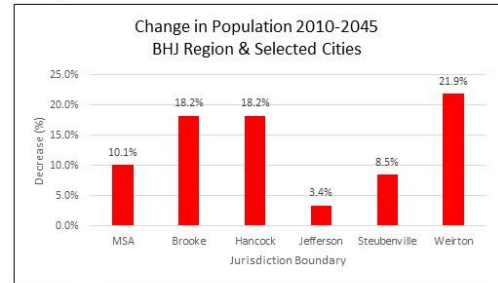
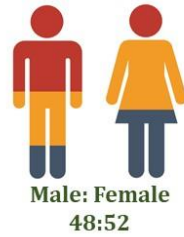
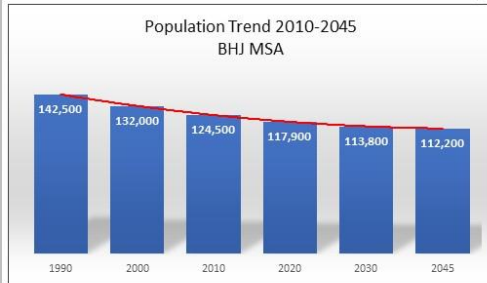
"LET'S WORK TOGETHER AND THINK BIG TO RESHAPE OUR COMMUNITY FOR THE FUTURE GLORY DAYS"



Presented By
Michael J. Paprocki
Executive Director
Brooke Hancock Jefferson Metropolitan Planning Commission
Steubenville, Ohio.
January 22nd, 2020.



Demographic Trend By BHJ Region



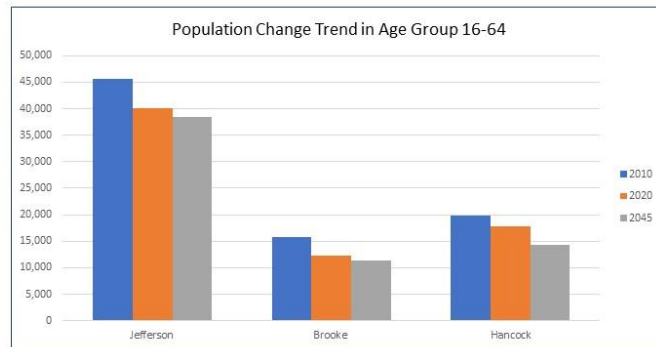
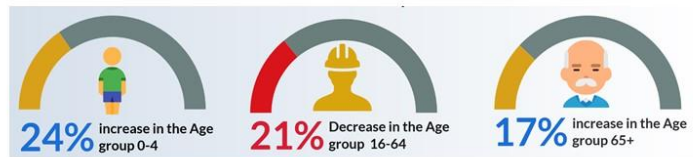
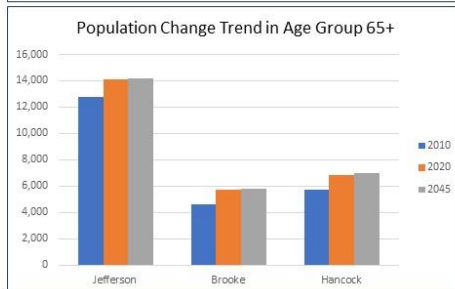
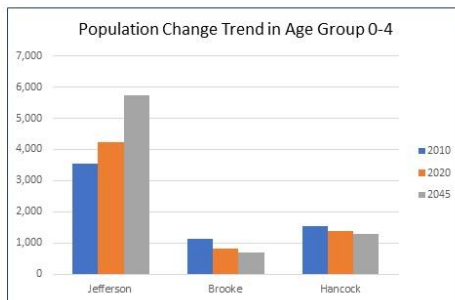
Source: Ohio Development Services Agency office of Research; 2018. Bureau of Business & Economic Research, West Virginia University; 2017. BHJ MPC

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Demographic Trend By Age Group



Source: Bureau of Business & Economic Research WVU, Ohio Development Services Agency office of Research MPC 2019

2/14/2020

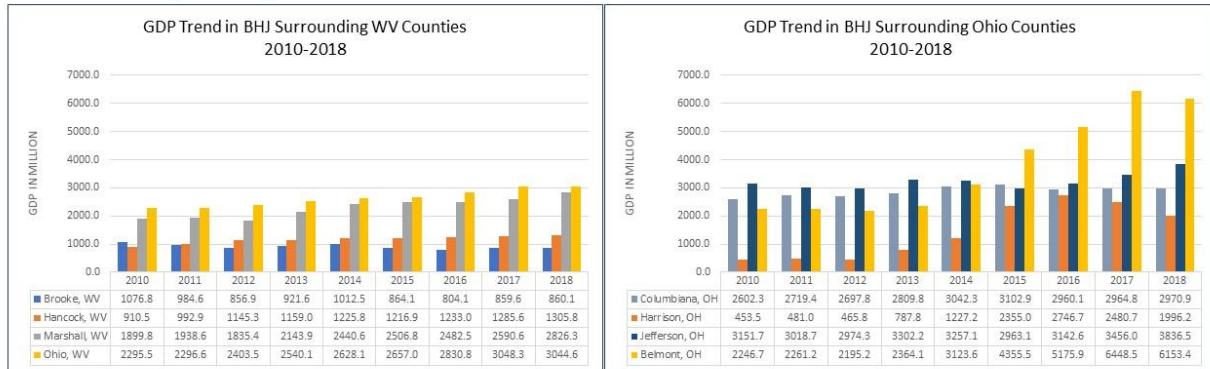
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Economic Trend of Ohio Valley 2010-2018

Belmont (OH) , Jefferson (OH) , Columbiana (OH) and Ohio (WV) are the top four counties in Ohio Valley.

- The increasing growth in **Belmont** county is due to its **agriculture (Agriculture, forestry, fishing and hunting) and mining (mining, oil and gas extraction)** industries.
- Columbiana** County is enjoying economic growth through **mining, information and arts-recreation, Food & Accommodation** industries.
- Ohio** county is doing an exceptional job due to **mining, wholesale, retail and real estate businesses**.
- The **combined** economy of **BHJ region** (Brooke, Hancock & Jefferson County) is **1/14th of Alleghany** County, PA and **1/2th of Washington** County, PA.



Source: Bureau of Economic Analysis, US Department of Commerce, 2019

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Employment Trend BHJ Region

\$6.003 Billion

Gross Domestic Product 2018



39,700

Employment Number, 2019



6.1%

Unemployment Rate 2018

- Though **Mining** (Jefferson 3rd Highest GDP after Belmont and Monroe in Ohio State 2016-2018) is the biggest force of economic growth for this region, **Health care, Accommodation-food service and retail** are the main employment generator.
- Most **Stable increasing GDP** trend from 2001-2018 is in **finance, real estate** sector while **most unstable** is the **Manufacture and Mining** industry.

Top 3 Employment Sectors By County

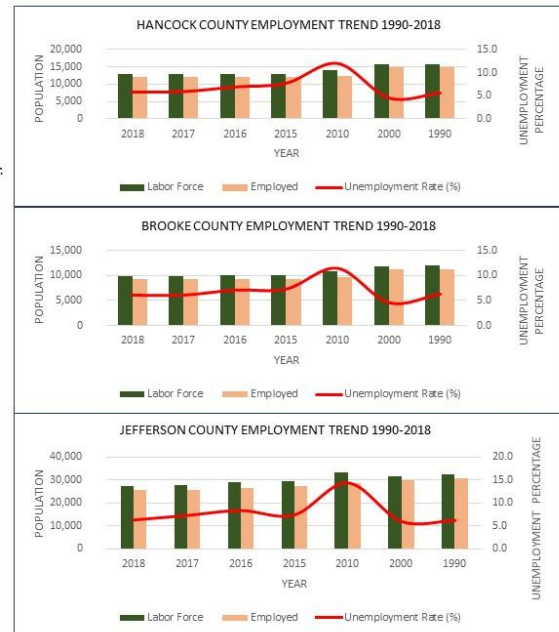
Brooke County		
	Number of Employees	Percentage of Total Employment
Health Care and Social Assistance	2,105	24.80%
Manufacturing	1,265	14.90%
Government	1,001	11.80%
Hancock County		
	Number of Employees	Percentage of Total Employment
Manufacturing	2,720	26.50%
Government	1,439	14.00%
Accommodation and Food Services	1,430	13.90%
Jefferson County		
	Number of employees	Percentage of Total Employment
Health care & social assistance	4,499	21.50%
Retail trade	2,771	13.20%
Educational services	1,675	8.00%

Source: Quarterly Census of Employment & Wages, BLS, 2018; Workforce West Virginia, Department of Commerce, 2019

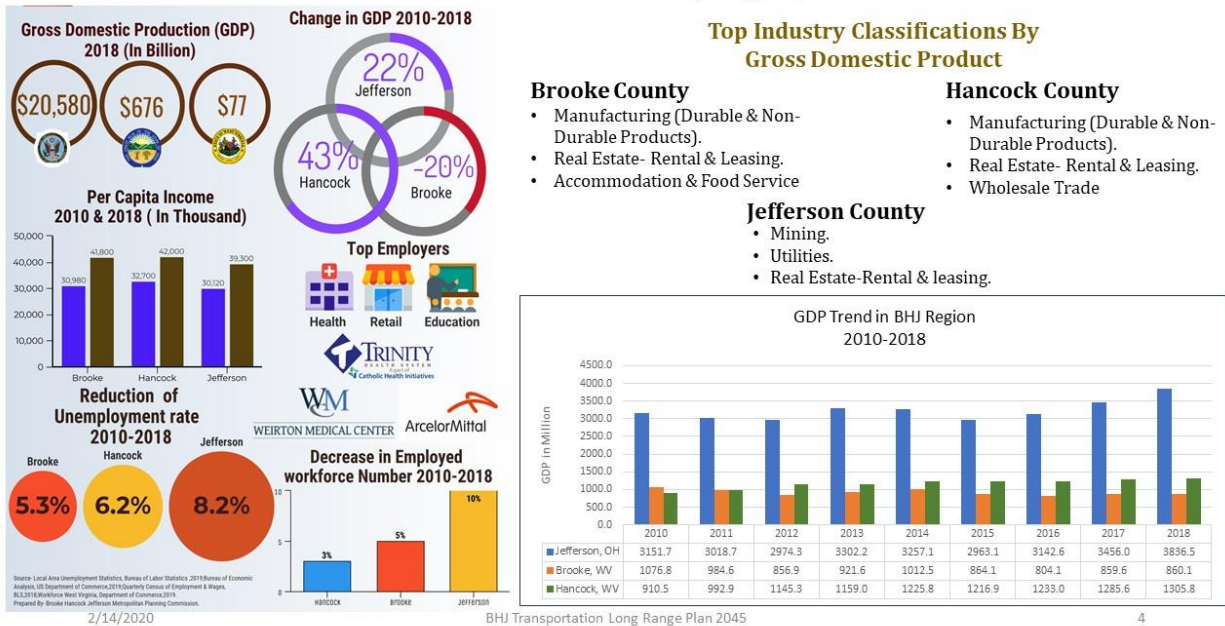
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Economic Trend BHJ Region



Commuter Workflow Statistics

Inside BHJ Region Commuter Flow

County of Workplace	County of Residence			Grand Total
	Brooke County	Hancock County	Jefferson County	
Brooke County	4637	1187	1172	6996
Hancock County	1242	6378	1361	8981
Jefferson County	821	1128	17272	19221
Grand Total	6700	8693	19805	35198

Top 5 Counties of Workplace from BHJ Region

County of Workplace	County of Residence			Grand Total
	Brooke County	Hancock County	Jefferson County	
Allegheny County	1065	2255	1932	5252
Ohio County	989	218	1349	2556
Belmont County	161	45	1402	1608
Washington County	509	428	390	1327
Columbiana County	58	538	468	1064

Top 5 Counties of Residence Working in BHJ Region

County of Residence	County of Workplace			Grand Total
	Brooke County	Hancock County	Jefferson County	
Columbiana County	76	1635	693	2404
Belmont County	262	37	727	1026
Harrison County	108	43	786	937
Allegheny County	224	203	247	674
Ohio County	228	158	280	666



Source- US Census Bureau, Commuter Flow 2011-15

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Environmental Justice

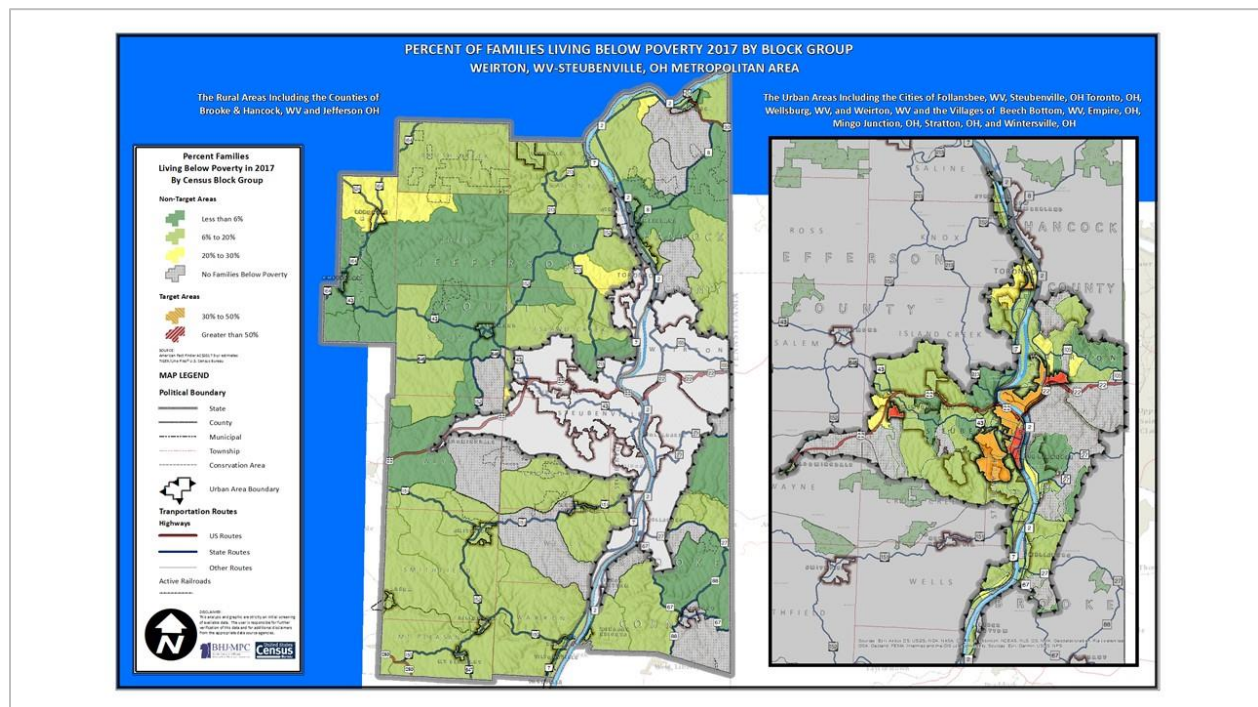
Percent of Families Living Below Poverty		
	People Living Under Poverty	Percentage of Total County Population
Brooke	3,042	13.70%
Hancock	3,842	13.20%
Jefferson	12,485	19.00%
Total Region	19,369	16.50%

Source- American Community Survey, ACS 2017

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Environmental Justice

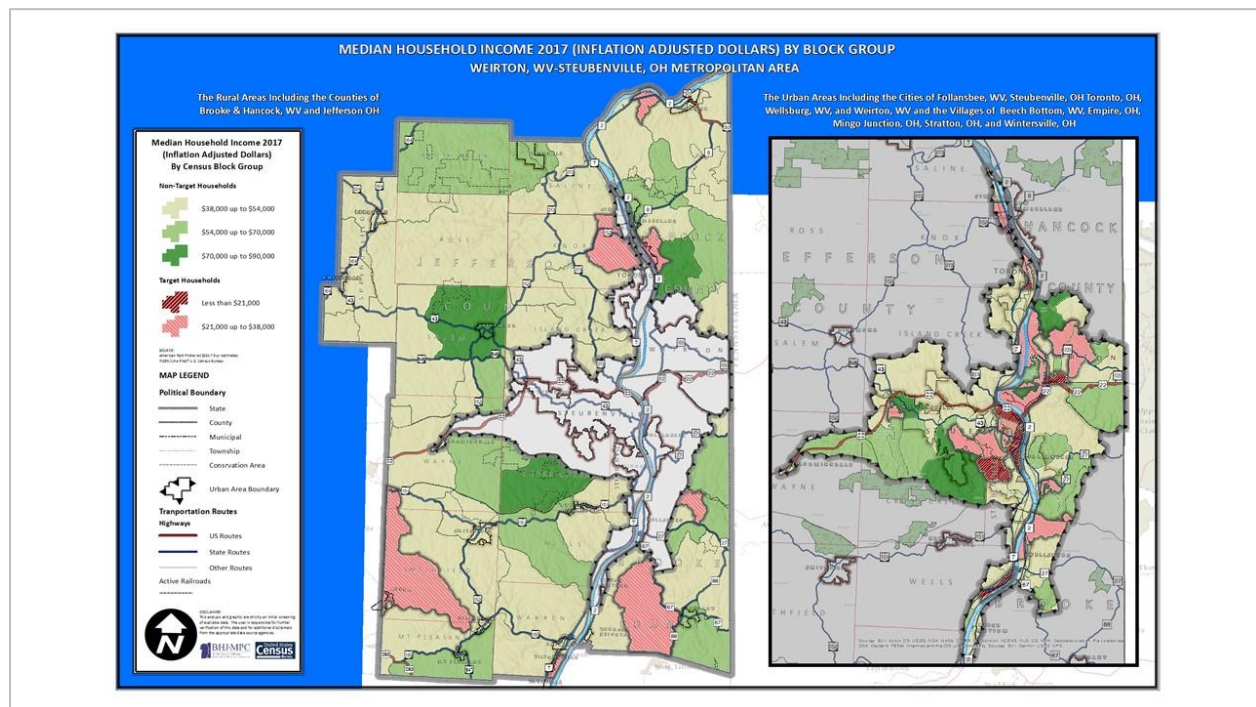
Per Capita & Median Household Income	Jefferson	Brooke	Hancock
Median Household Income (in 2017 dollars)	\$43,161	\$48,835	\$43,634
Per Capita Income in Past 12-months (in 2017 dollars)	\$24,028	\$25,630	\$25,157

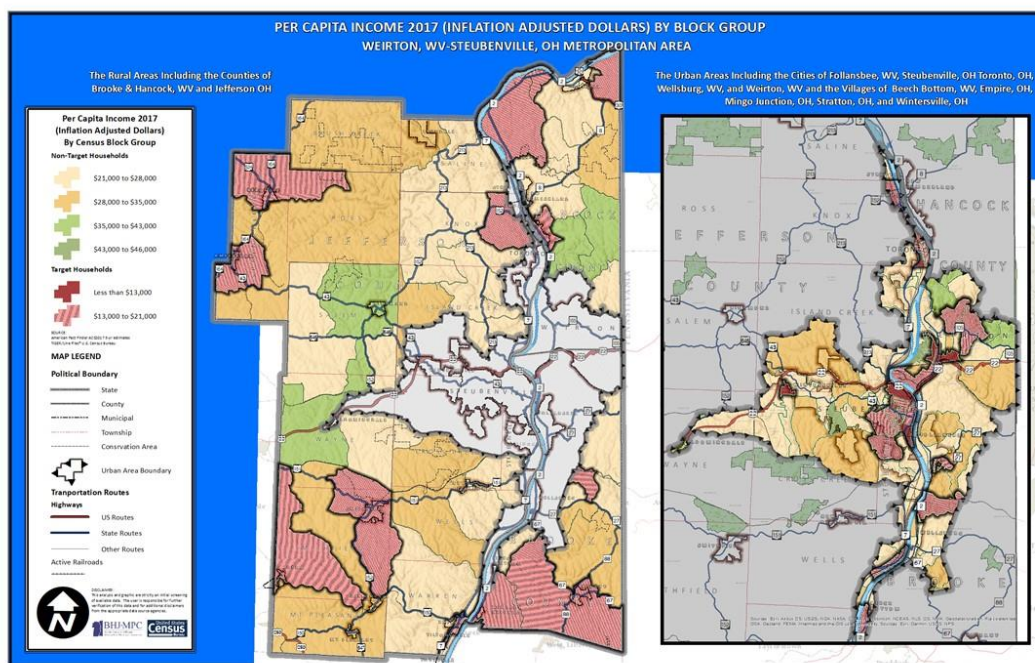
Source- American Community Survey (ACS), 2017

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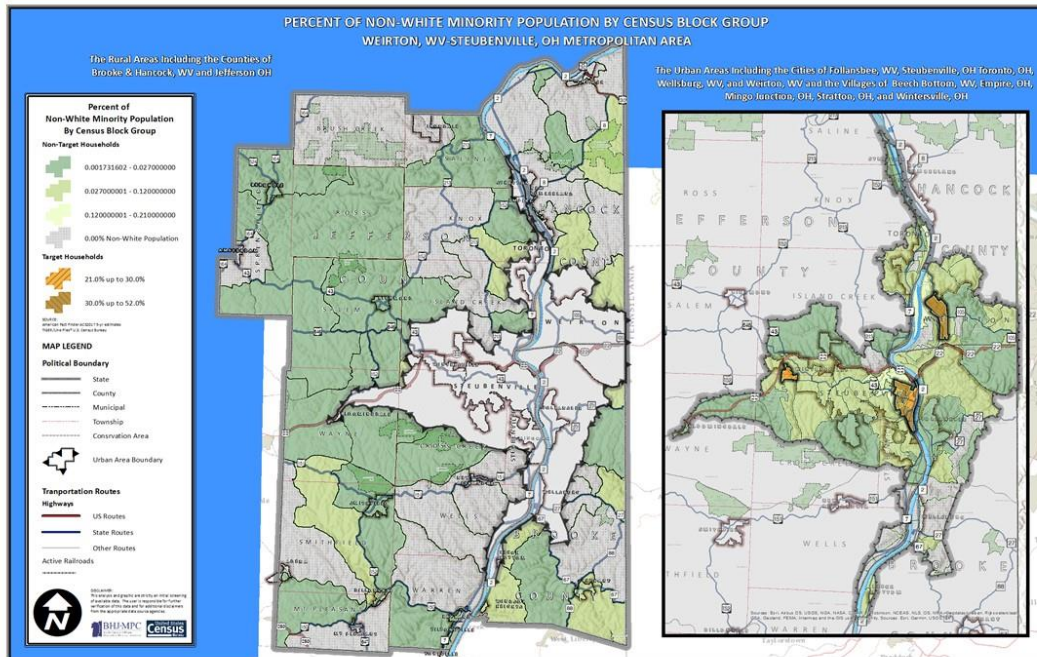




Environmental Justice

Percent of Minority (Non-White) Population		
	Minority (Non-White) Population	Percentage of Total County Population
Brooke	799	3.60%
Hancock	1,484	5.10%
Jefferson	5,524	8.40%
Total Region	7,808	6.67%

Source- American Community Survey (ACS), 2017



Environmental Justice

Household with Zero Vehicle	Jefferson	Brooke	Hancock
Household with Zero Vehicle Available (%)	2,407 (8.7%)	952 (9.6%)	1,048 (8.2%)

Source- American Community Survey (ACS), 2017

2/14/2020

BHJ Transportation Long Range Plan 2045

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Appendix- G

Online & Media Initiative for LRTP 2045 Comment Period

News Paper Publication of Public Notice-

Classified/Legal Advertising Invoice Ogden News Publishing of Ohio, Inc 401 Herald Square Steubenville, OH 43952 (740) 283-4711									
BHJ METRO PLANNING COMMISSION 124 N. 4TH ST. 2ND FLOOR ADRIENNE WARD STEUBENVILLE, OH 43952				RECEIVED APR 07 2020 03/25/2020 09:41:39AM BHJ Planning Commission No: 184584					
Phone: 740 282-3685									
Ad No 184584	Customer No: L00170	Start Date 03-27-2020	Stop Date 04-01-2020	Category: Special Stuff		Classification: W.Va. Legals			
Order No	Rate: WL	Lines: 88	Words: 429	Inches: 8.85	Cost 107.34	Payments .00	Balance 107.34		
Publications ... Runs WV Legals ... 2 WV Legals Online ... 2		Solicitor: 40	Origin: 73	Sales Rep: 0	Credit Card	Credit Card Number	Card Expire		
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PUBLIC NOTICE FOUR YEAR UPDATE OF BROOKE-HANCOCK JEFFERSON METROPOLITAN LONG -RANGE TRANSPORTATION PLAN 2045 REVIEW AND APPROVAL									
*Extend Expiration Date									

Patricia A Bourns

[illegible]

Classified/Legal Advertising Invoice**Ogden News Publishing of Ohio, Inc**

401 Herald Square

Steubenville, OH

43952

(740) 283-4711

**BHJ METRO PLANNING COMMISSION**

124 N. 4TH ST. - 2ND FLR

ADRIENNE WARD

STEUBENVILLE, OH

03/25/2020 9:31:16AM

43952**No: 184583****Phone: 740 282-3685**

Ad No 184583	Customer No: L00170	Start Date 03-27-2020	Stop Date 04-01-2020	Category: Special Stuff	Classification: Ohio Legals				
Order No	Rate: OL	Lines: 125	Words: 429	Inches: 12.15	Cost 289.50	Payments .00	Balance 289.50		
Publications ... Runs OH Legals ... 2 OH Online Legals ... 2		Solicitor: 40	Origin: 73	Sales Rep: 0	Credit Card	Credit Card Number	Card Expire		
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Identifier									
PUBLIC NOTICE FOUR YEAR UPDATE OF BROOKE-HANCOCK JEFFERSON METROPOLITAN LONG -RANGE TRANSPORTATION PLAN 2045 REVISED 2020									

*=Extend Expiration Date

STATE OF OHIO
STEUBENVILLE,
JEFFERSON COUNTY, SS.

LISA L. VARGO

being sworn, says she is

BOOKKEEPER

Lisa L Vargo

of THE HERALD-STAR, a newspaper
published, and of general circulation
in said County and City, and that the
Ad, of which the annexed is a true
copy, was published in said newspaper

on these dates March 27, April 1, 2020

Sworn to and subscribed before me

This 1st day of April, 2020

AMOUNT: \$289.50

ACCT. # L00170

NOTARY:



PATRICIA A. BOWERS
NOTARY PUBLIC
STATE OF OHIO
MY COMMISSION EXPIRES
AUGUST 14, 2022

Patricia A Bowers

**PUBLIC NOTICE
FOUR YEAR UPDATE
OF BROOKE-HANCOCK
JEFFERSON METRO-
POLITAN LONG
-RANGE TRANSPORTA-
TION PLAN 2045
REVIEW AND
APPRAISAL FOR
BROOKE COUNTY, WV -
HANCOCK COUNTY,
WV-JEFFERSON
COUNTY, OH**

The Brooke-Hancock-Jefferson Metropolitan Planning Commission hereby informs the Public that the Metropolitan Long-Range Transportation 2045 Plan, for the Brooke-Hancock-Jefferson Metropolitan Planning Commission (BHJMP) Region, is available for review. The BHJMP is requesting Public comment to evaluate the continued validity of the projects presented in the current Long-Range Transportation Plan and identify any new transportation projects for inclusion in the Long-Range Transportation Plan Update. In addition, the BHJMP seeks to identify specific transportation corridors in the three-county region needing detailed study and review. The Long Range Transportation Plan supports economic development, security, environmental conservation, and conformity to applicable state and federal air quality standards. Due to the recommendation of US Centers for Disease Control and Prevention (CDC) on March 16th that stated no gatherings with 10 people or more take place for the next eight weeks to slow the spread of the novel coronavirus, there is no open house scheduled at this moment. The open house and meeting are to be held at the BHJ Office located at 124 North Fourth Street, Second Floor, Steubenville, Ohio (pending the status of the "Director's Stay at Home Order" issued by the Director of the Ohio Department of Health, March 22, 2020). But the document will be available in our website www.bhjmc.org and also the link and announcement will be made public through Email, Blast, and Social Media site @Facebook (<https://www.facebook.com/BHJMetroPlanning>) for the Public review. The BHJMP Technical Advisory and Policy Committees will consider adoption of the Long-Range Plan during a joint meeting convening 12:00 noon on April 22, 2020. The BHJMP will conduct the meeting at the Brooke-Hancock-Jefferson Metropolitan Planning Commission Offices located at 124 North Fourth Street, Second Floor, Steubenville, Ohio. A reproduced copy of the BHJ Long Range Transportation 2045 Plan is available to any individual or organization for a nominal fee by contacting the BHJ Offices 740-262-3685 or by emailing to mikesap@bhjmc.org. Persons may request a copy by contacting the BHJTS office at (740) 262-3685 or in person at 124 North Fourth Street, Second Floor, Steubenville, OH 43952. Business contact hours are 9:00 a.m. to 4:00 p.m. Direct any questions to Mr. Michael J. Paprocki, Executive Director, or Ms. Adrienne Ward, Office Manager. The BHJMP accepts and responds to written and signed requests by mail, website, social media, in person, or e-mail received no later than 12:00 Noon on April 22, 2020.

3-27, 4-1, 2020 Adv.

E mail Blast Content-

Subject: Public Notice: FOUR YEAR UPDATE OF BROOKE HANCOCK JEFFERSON METROPOLITAN LONG-RANGE TRANSPORTATION PLAN 2045 REVIEW AND APPRAISAL FOR BROOKE COUNTY, WV – HANCOCK COUNTY, WV – JEFFERSON COUNTY, OH

Public Notice: FOUR YEAR UPDATE OF BROOKE HANCOCK JEFFERSON METROPOLITAN LONG-RANGE TRANSPORTATION PLAN 2045 REVIEW AND APPRAISAL FOR BROOKE COUNTY, WV – HANCOCK COUNTY, WV – JEFFERSON COUNTY, OH

"The Brooke-Hancock-Jefferson Metropolitan Planning Commission hereby informs the Public that the Metropolitan Long-Range Transportation 2045 Plan, for the Brooke-Hancock-Jefferson Metropolitan Planning Commission (BHJMPC) Region, is available for review. The BHJMPC is requesting Public comment to evaluate the continued validity of the projects presented in the current Long-Range Transportation Plan and identify any new transportation projects for inclusion in the Long-Range Transportation Plan Update. The document is available in our website <https://www.bhjmpe.org/public-notice-four-year-update-of-b-/> for the Public review. The BHJMPC accepts and responds to written and signed requests by mail, website, social media, in person, or e-mail received no later than 12:00 Noon on April 22, 2020. Please reach out to our Offices 740-282-368 or e-mailing to mikepap@bhjmpe.org. In person comment is only accepted upon appointment. Our office address 124 North Fourth Street, Second Floor, Steubenville, OH 43952".

Facebook Post & Project Highlight initiative (53 days Period) -

Brooke-Hancock-Jefferson Metropolitan Planning Commission

March 30 at 11:45 AM · 🌐

"The Brooke-Hancock-Jefferson Metropolitan Planning Commission hereby informs the Public that the Metropolitan Long-Range Transportation 2045 Plan, for the Brooke-Hancock-Jefferson Metropolitan Planning Commission (BHJMPC) Region, is available for review. The BHJMPC is requesting Public comment to evaluate the continued validity of the projects presented in the current Long-Range Transportation Plan and identify any new transportation projects for inclusion in the Long-Range... See More

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LET'S WORK TOGETHER & THINK BIG TO RESHAPE OUR COMMUNITY FOR THE FUTURE GLORY DAYS

LONG RANGE TRANSPORTATION PLAN
Brooke, Hancock & Jefferson
County

2045

BHJ-MPC
Brooke Hancock Jefferson
Metropolitan Planning Commission

🌉🚧🛣️🛣️🌉

👍 1 2 Shares



Brooke-Hancock-Jefferson Metropolitan Planning Commission
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April 1 at 2:01 PM · 🌐

Objective 2 - maintain existing infrastructure rather than build new corridors of travel.
Improvements to Lovers Lane from Fernwood Road to State Route 43 (Sunset Boulevard);
Phase 3 – Fort Steuben Drive to SR43 (Sunset Blvd), Steubenville, Ohio. From Fort Steuben Drive to Sunset Boulevard reconstruct the existing roadway by full-depth pavement replacement and widen to permit two 12-foot lanes. Construction will also include curbs, walkways and curb ramps, as well as increas... [See More](#)

 1

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Brooke-Hancock-Jefferson Metropolitan Planning Commission
...

April 1 at 1:48 PM · 🌐

Objective 1 – Design an efficient Mobility Management Program with cooperation with the local public transportation providers and other human service transportation providers that are involved in elderly, people with disability and employment related transportation. BJJ Mobility Management, BJJ Region, OH-WV.
The project purpose is to establish a Mobility Management Program for the BJJ Region. Mobility Management moves beyond traditional fixed route public transportation serv... [See More](#)

 1

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Brooke-Hancock-Jefferson Metropolitan Planning Commission
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April 1 at 10:24 AM · 🌐

Over the next 3 Wednesdays we will be highlighting regionally significant projects from our Brooke Hancock Jefferson Metropolitan 2045 Long Range Transportation Plan... Be on the lookout for one later today!

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Brooke-Hancock-Jefferson Metropolitan Planning Commission

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April 6 at 2:29 PM · 🌐

"The Brooke-Hancock-Jefferson Metropolitan Planning Commission hereby informs the Public that the Metropolitan Long-Range Transportation 2045 Plan, for the Brooke-Hancock-Jefferson Metropolitan Planning Commission (BHJMP) Region, is available for review. The BHJMP is requesting Public comment to evaluate the continued validity of the projects presented in the current Long-Range Transportation Plan and identify any new transportation projects for inclusion in the Long-Range ... See More

"LET'S WORK TOGETHER & THINK BIG TO RESHAPE OUR COMMUNITY FOR THE FUTURE GLORY DAYS"

LONG RANGE TRANSPORTATION PLAN
Brooke, Hancock & Jefferson
County

2045


BHJ-MPC
Brooke Hancock Jefferson
Metropolitan Planning Commission





Brooke-Hancock-Jefferson Metropolitan Planning Commission
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April 8 at 10:53 AM · 🌐

BHJ MPC Township Safety Signage Grant Program
 Every year as a part of Surface Transportation Improvement program (TIP), BHJ will allocate up to \$25,000 from their MPO Sub allocation fund to a township for their safety signage, posts and hardware replacement. BHJ will select one township each year from their Jefferson county member communities and will ensure to cover all the member communities by yearly rotation irrespective of the crash vulnerability and crash counts of tha... See More


 1

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Brooke-Hancock-Jefferson Metropolitan Planning Commission
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April 8 at 10:45 AM · 🌐


Park and Ride: Wellsburg Bridge, Brilliant, Ohio Along SR 7
 After completion of the Wellsburg Bridge, a need for parking in and around the bridge for carpooling and trail use purposes is expected. The current conceptual drawings place 12 regular parking spaces and 1 handicap accessible parking space on a lot adjacent to the Bridge on the Ohio side. BHJ along with ODOT District 11 personnel have developed this project in anticipation of carpooling and trail use from the shar... See More

 4
 2 Comments

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Most Relevant




View comments



Brooke-Hancock-Jefferson Metropolitan Planning Commission
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April 8 at 10:40 AM · 🌐

Park and Ride: SR7 and SR150; Rayland, OH
 Figure 7 is a conceptual plan to build a park and ride facility at SR-7 & SR-150 in southern Jefferson County near Rayland, OH. The plan creates 42 regular parking spaces and 2 handicap accessible parking spaces. There is a need for a park and ride in this area as evidenced by vehicles parked along the roadways and in local business parking lots. BHJ personnel working with ODOT District 11 personnel have the developed the project and ... See More

BHJ 2045 Transportation Plan- Supplemental Documents
 April 2020

Page | 39







Brooke-Hancock-Jefferson Metropolitan Planning Commission
 ...

April 20 at 1:42 PM ·
 

"The Brooke-Hancock-Jefferson Metropolitan Planning Commission hereby informs the Public that the Metropolitan Long-Range Transportation 2045 Plan, for the Brooke-Hancock-Jefferson Metropolitan Planning Commission (BHJ MPC) Region, is available for review. The BHJ MPC is requesting Public comment to evaluate the continued validity of the projects presented in the current Long-Range Transportation Plan and identify any new transportation projects for inclusion in the Long-Range ... See More






"LET'S WORK TOGETHER & THINK BIG TO RESHAPE OUR COMMUNITY FOR THE FUTURE GLORY DAYS"

LONG RANGE TRANSPORTATION PLAN
 Brooke, Hancock & Jefferson
 County

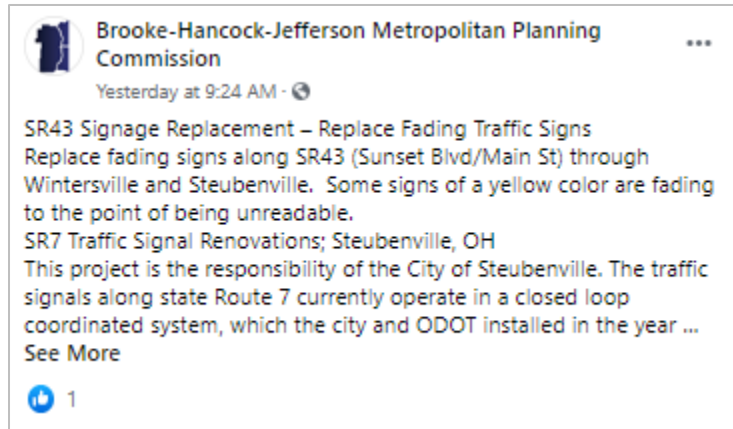
2045


 BHJ-MPC
Brooke Hancock Jefferson
Metropolitan Planning Commission

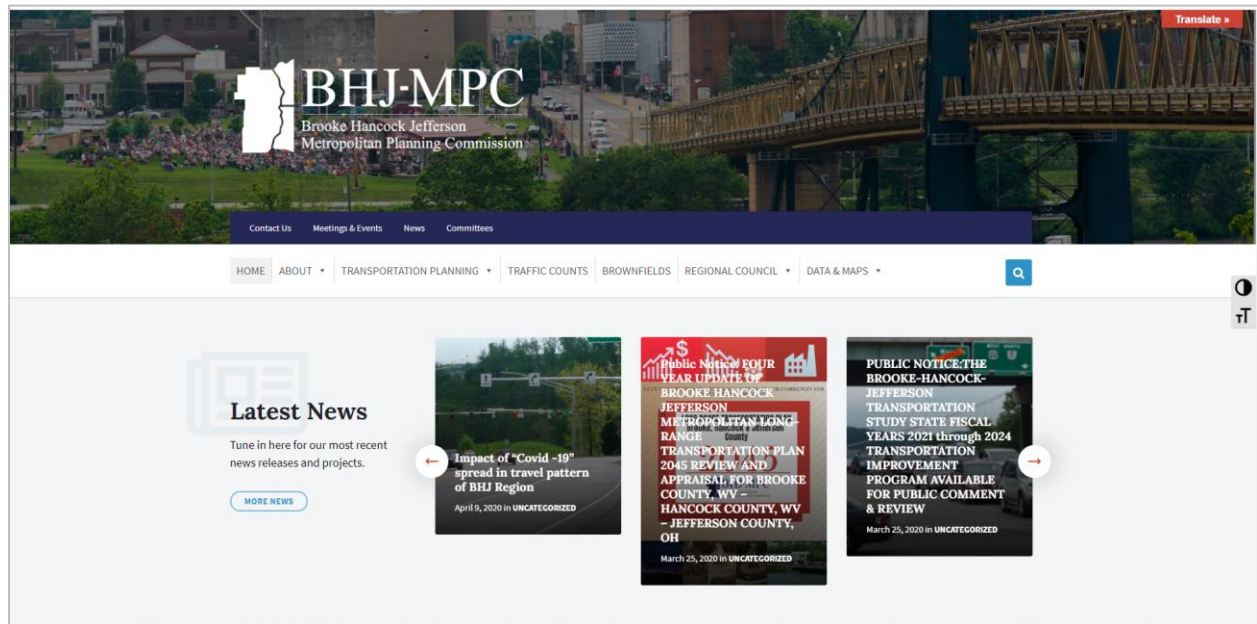








BHJ Website Upload –



**Public Notice: FOUR YEAR UPDATE OF BROOKE HANCOCK
JEFFERSON METROPOLITAN LONG-RANGE TRANSPORTATION
PLAN 2045 REVIEW AND APPRAISAL FOR BROOKE COUNTY, WV –
HANCOCK COUNTY, WV – JEFFERSON COUNTY, OH**

March 25, 2020 by [BHJADMIN2](#) in [UNCATEGORIZED](#)



APPENDIX H
REVISIONS TO THE LRTP DOCUMENT

BROOKE-HANCOCK-JEFFERSON METROPOLITAN PLANNING COMMISSION
FY2045 LONG RANGE TRANSPORTATION PLAN
REVISIONS AND AMENDMENTS #1
Resolution 2021-9

Item (1) – Hancock County, WV – Addition of the Weirton Corridor of Opportunity- BHJ LRTP Project # WVH-41

This project is being designed by the Frontier Group of Companies along with the WVDOH. The current estimated cost of the project is \$8.5 million, and no right-of-way is needed from any property owners other than from Weirton Frontier Crossings, LLC. WVDOH is submitting an INFRA Grant on behalf of the City of Weirton for this project.

This project is proposed to create a Main Street Bypass Roadway around State Route 2/Main Street. The New Main Street Bypass Roadway is shown highlighted Red on the map below. The new bypass would run from Cove Rd. and up Weir Ave. where it would then split around where the existing Lee Ave. is located. Weir Ave. would continue to the North East and the new bypass road would then travel to the North West along the existing railroad tracks behind the remaining Weirton Steel Facility. The new bypass would then split away from the railroad tracks and run beside SR 2/Main St. along the edge of the old Weirton BOP site which was demolished in March of 2019. The new bypass would then pass underneath SR 2/Main St. and connect to Pennsylvania Ave. via a proposed Industrial Access Road. This proposed Industrial Access Road is highlighted Grey on the map below. The industrial access road would also continue West through areas of proposed developable lots and connect to Avenue C.

There are multiple areas of developable lots along this new bypass and industrial access roadways. Starting on the East side of the project, there are multiple lots between Weir Ave. and the Weirton Steel Facility. Just to the North West of those is another large area in the lot where the old Weirton BOP once stood. Then finally a large area that stretches from SR2/Main St. to around Avenue C between Main St. and the existing railroad tracks. These developable areas are highlighted in a yellow/green shading on the map below.

This project is being designed to reduce traffic congestion and provide access to industrial properties along SR 2/Main St. for future development and economic growth in the region.

Resolution 2021-9

**BROOKE-HANCOCK-JEFFERSON TRANSPORTATION STUDY POLICY COMMITTEE RECOMMENDATION
TO REVISE THE REGION'S F.Y. 2045 LONG RANGE TRANSPORTATION PLAN (LRTP)**

WHEREAS, The Business Development Corporation (BDC) has requested the Brooke-Hancock-Jefferson Transportation Study Policy Committee (BHJTS) to amend and/or modify the region's FY 2045 Long Range Transportation Plan (LRTP), herein called Revision #1; and

WHEREAS, Revision #1 includes the addition of the following project:

In Hancock County, WV, add one (1) project for the Weirton Corridor of Opportunity road project in Weirton, WV (BHJ LRTP Project Number WVH-41). This project is proposed to create a Main Street Bypass around State Route 2. The bypass would run from Cove Rd. and Weir Ave. to the west along the railroad tracks behind the Weirton Steel Facility, pass underneath SR 2 and connect to Pennsylvania Ave. via a proposed industrial access road. This project is being designed by the Frontier Group of Companies along with the WVDOH on behalf of the City of Weirton to reduce traffic congestion and provide access to industrial properties along SR 2 for future development.

WHEREAS, BHJTS staff has reviewed the project and agrees with the LRTP revision according to the attachments to this resolution; and

WHEREAS, All projects listed in Revision #1 conform to the provisions of CFR Part 51.390 as well as CFR Title 40 Part 93 (Updated March 2010) and Section 176(c) of the Clean Air Act for all applicable National Ambient Air Quality Standards (NAAQS) and will not:

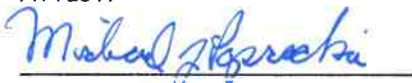
1. Cause or contribute to a new violation of a NAAQS;
2. Increase the frequency or severity of any existing violation of a NAAQS;
3. Delay the timely attainment of a NAAQS.

WHEREAS, the BHJTS Technical Advisory Committee, in action taken on April 21, 2021 recommends approval of the afore mentioned revision to the Region's F.Y. 2045 Long Range Transportation Plan;

NOW THEREFORE BE IT RESOLVED: that the F.Y. 2045 Long Range Transportation Plan be revised as indicated by the attachments to this Resolution.

ADOPTED, this 21st day of April, 2021.

ATTEST:



Michael J. Paprocki
Executive Director



Joe Barnabei
Chairperson