

Appendix C

Existing Conditions and Trends

The following documents comprise the existing conditions and trends analysis conducted for the Crossroads vision process and specifically for Morgantown's Comprehensive Plan.

- 1. *Conditions and Trends Technical Report 1***
- 2. *Conditions and Trends Technical Report 2***
- 3. *Morgantown Area Economic Baseline***
- 4. *Morgantown Area Opportunities Assessment***
- 5. *2040 Long Range Transportation Plan Existing Conditions***



Memo

April 10, 2012

To: Morgantown Comprehensive Planning Committee, Chris Fletcher
From: Michael Curtis
Cc: Gianni Longo, Jamie Greene, Steve Thielen, Jamie Snow
Re: Conditions and Trends Technical Report 1

This is the first of two technical reports on existing conditions and trends related to the Morgantown Comprehensive Plan. The report is organized into the following structure:

- I. Understanding Regional Context and Community Demographics**
 - A. Regional Context
 - B. Demographics
- II. Understanding Growth and Development**
 - A. Land Use and Development Patterns
 - B. Economic Development
 - C. Transportation

The second technical report will cover:

- III. Understanding Community Amenities and Quality of Life**
 - A. Housing
 - B. Public Services and Utility Infrastructure
 - C. Parks, Recreation, Open Space, Environment
 - D. Historic Preservation
- IV. Putting Plans to Action**
 - A. Past Plans
 - B. Zoning Overview
 - C. Annexation Criteria

Understanding the characteristics of Morgantown and the region in terms of physical and demographic trends are important elements to consider when planning for the future. Factors such as growth in population, land use, development patterns and regional growth trends and pressures are critical elements that need to be evaluated in preparing a comprehensive plan.

This memorandum provides a description of growth trends within Morgantown and the surrounding region, examines the existing land use pattern and examines the amount of land that is suitable for development. The purpose of conducting this analysis is to provide baseline information as a tool to make informed recommendations related to land use and demographic trends.

Land is an exhaustible resource that, once developed and converted to a use, is often difficult to change. Land will continue to be developed, but the pattern, rate, timing and location of how land is developed can be shaped through well-founded planning policies. When considering the future land use pattern the key question is not primarily a question of whether or not Morgantown will grow, but where and how it will grow.

I. UNDERSTANDING REGIONAL CONTEXT AND DEMOGRAPHICS

REGIONAL CONTEXT

This section considers Monongalia County and Morgantown in a broader regional context and compares the county and city to West Virginia overall, neighboring states and other counties and cities within West Virginia. Beyond this section, the term “region” will refer to Monongalia County only.

- Various definitions of region.** The City of Morgantown is the core of a larger region. That region has several definitions. The Morgantown Monongalia MPO, the federally-designated metropolitan planning organization, defines the metropolitan area of Morgantown as including all of Monongalia County. The larger U.S. Census defined Morgantown Metropolitan Statistical Area spans all of Monongalia and neighboring Preston County. The still larger “Mountaineer Country” region (one of nine regions defined by the State) includes seven counties, all within West Virginia (see [Map 1](#)). Within any of these definitions of region, Morgantown has the largest population and highest density. Morgantown, adjacent municipalities such as Star City, Westover, and Granville, and unincorporated areas of Monongalia County share many of the same growth pressures and challenges.

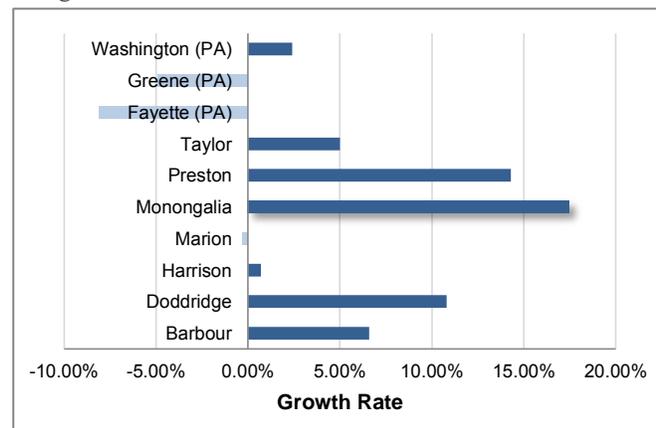
- A region within a slow growing state.** During the last decade, West Virginia had the second slowest rate of population growth of the five states it borders, with growth of 2.5 percent. Only Ohio (1.6%) had a lower rate of population growth during that time.
- Population growth in the County has significantly outpaced growth within the state.** While population growth in West Virginia overall has been slow, Monongalia County experienced significant population increase from 2000 to 2010. The county grew 17.5 percent making it the fifth fastest growing county in the state. Expansion of the university and supporting services has been a driver of this trend. Within the Mountaineer Region, Monongalia was the fastest growing county and also outpaced neighboring counties in Pennsylvania (see Figure 1.)

Table 1. State Population Change 2000-2010

	Growth Rate	2010 Population
West Virginia	2.50%	1,852,994
Ohio	1.60%	11,536,504
Pennsylvania	3.40%	12,702,379
Maryland	9.00%	5,773,552
Virginia	13.00%	8,001,024
Kentucky	7.40%	4,339,367

Source: U.S. Census 2010

Figure 1. Population Growth Rate of Mountaineer Region Counties 2000-2010



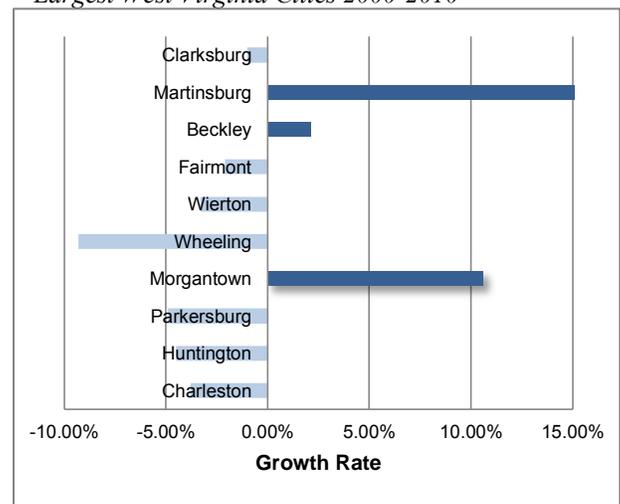
- Interstate access provides a strategic advantage.** Morgantown sits very near the crossroads of two heavily trafficked Interstate highways, I-79 and I-68. I-79 connects Pittsburgh with Charleston. Its junction in Charleston is with I-77, one of the most heavily trafficked north-south interstate routes in the country. This access places Morgantown 156 miles from Charleston and 75 miles from Pittsburgh.

I-68, or the “National Freeway,” runs from east to west from Washington D.C., through Maryland and into West Virginia. (USDOT Federal Highway Administration) The junction of these two roads just outside of Morgantown provides access to the region and has spurred economic expansion and population growth. It also enables a significant proportion of Monongalia County’s workforce to commute from outside of the county.

- **Monongalia County attracts workers from around the multi-county region and Pennsylvania, increasing its daytime population.** A significant number of workers commute into the county for work daily. This includes workers from southern Pennsylvania and surrounding counties. The University provides a significant multiplier to local business and provides a magnet for employment in the region. This daily swell contributes greatly to the traffic pressures felt within the community.
- **Unemployment rates within the region are lower than other areas of the state, especially within Monongalia County.** As of December 2011 Monongalia County had the lowest recorded unemployment rate of any West Virginia County at five percent. The county reported 46,440 jobs in December of 2011. The county has the second highest number of jobs in the State behind Kanawha County, home to Charleston, the state’s capital.

- **Of the ten largest cities in West Virginia, only Martinsburg (pop. 17,227) grew at a faster rate than Morgantown.** Morgantown was one of only three of the top ten largest cities in West Virginia that gained population between 2000 and 2010. The trend toward decline in the larger cities of West Virginia mirrors similar losses in the deindustrializing metro centers of the northern U.S. Many comparable cities in West Virginia and across the Midwest are losing population as people move from older urban centers to newer suburban areas. This pattern leads to growing county populations, while core cities shrink. Yet, between 2000 and 2010, Morgantown’s growth opposed that trend, gaining 2,851 people – over a 10 percent rate of growth. Also, somewhat unique to Morgantown, is that most of its growth was internal, resulting from increasing density in existing areas of the city, while a large part of Martinsburg’s growth came through outward expansion via annexation.

Figure 2. Population Growth Rate of the Ten Largest West Virginia Cities 2000-2010



- **Limited local control for municipalities.** Often referred to as “Dillon’s Rule,” in West Virginia the state retains a majority of the powers not expressly granted to its municipalities. This is in contrast with “home rule” states (which are the majority), where municipalities retain all powers not expressly reserved by the state. In home rule states, local governments are free to pass laws and ordinances as they see fit to further their operations. In non-home rule states, such as West Virginia, a city or county government must obtain permission from the state legislature if it wishes to pass a law or ordinance which is not specifically permitted under existing state legislation. This circumstance is recognized as

an obstacle to planning, regulating, and managing growth in the urban areas of Monongalia County where there are widespread views that local control provided by the state is insufficient. However, Dillon's Rule alone does not prohibit or hinder growth management, as explained in a 2003 report published by the Brookings Institution:

“Contrary to conventional wisdom, many Dillon Rule states maintain model growth management systems. Maryland, Washington, and Wisconsin, for example, have all implemented strong programs that give local and county governments the tools and incentives to manage or channel growth—even though Dillon's Rule prevails in each state. At the same time, Oregon—a non-Dillon state with one of the nation's strongest home rule traditions—sustains the nation's strongest state-mandated growth management regime. In short, a state's adherence to Dillon's Rule in no way precludes strong action to deal with growth-related challenges.” (Richardson, et al)

A Home Rule Pilot Program began in 2008. A pilot program was enacted by the legislature in 2007 and in 2008 four municipalities, Huntington, Charleston, Wheeling and Bridgeport were selected to operate under “home rule” for five years.

DEMOGRAPHIC PROFILE

This section describes the population and demographic characteristics and trends of Monongalia County and Morgantown. In many cases, the trends within Morgantown area reflected in those of the County so this profile will focus those county-wide trends, while noting any significant differences where they occur in the city.

Population

- **Continual county population growth, with increasing growth rate since 1990.** Over the past 40 years, Monongalia County's population has been growing. Following a period of rapid growth during the 1970s, the County experienced a decade of slow growth during the 1980s (less than 1% between 1980 and 1990). The growth rate has accelerated since 1990, with 8.4 percent growth from 1990 to 2000 and 17.5 percent growth from 2000 to 2010. These rates are much higher than that of West Virginia overall, which saw 2.5 percent growth from 2000 to 2010 and 0.8 percent growth during the 1990s. The rates are also higher than those for the City of Morgantown in each decade compared (see Table 2).
- **A growing population in Morgantown after a period of decline.** Between 1970 and 1990, Morgantown's population fell by over 3,500 people, steadily losing over 6 percent each decade in the 1970s and 1980s. Due to the difference in growth compared to the County, some of the loss may be attributable to people moving from Morgantown to new developments in the unincorporated areas of the county (see Existing Land Use section for a description of recent annexation trends). The city's population began growing again during the 1990s, but didn't exceed the 1970 peak until the middle of the last decade. During the first decade of the 2000s, the city averaged 10.6 percent growth, which is equal to the growth rate of the United States' population during that same time.

Table 2a. Population 1970-2010

Year	Morgantown			Monongalia County Total			Monongalia County Excluding Morgantown		
	Population	Change	Rate	Population	Change	Rate	Population	Change	Rate
1970	29,431	--	--	63,714	--	--	34,283	--	--
1980	27,605	-1,826	-6.2%	75,024	11,310	17.8%	47,419	13,136	38.3%
1990	25,879	-1,726	-6.3%	75,509	485	0.6%	49,630	2,211	4.7%
2000	26,809	930	3.6%	81,866	6,357	8.4%	55,057	5,427	10.9%
2010	29,660	2,851	10.6%	96,189	14,323	17.5%	66,529	11,472	20.8%
1990-2010	--	3,781	14.6%	--	20,680	27.4%	--	16,899	--
1970-2010	--	229	0.8%	--	32,475	51.0%	--	32,246	--
2040*	--	--	--	--	138,069	43.5%	--	--	--

Source: U.S. Census; *WVU Bureau of Business and Economic Research

Table 2b. Monongalia County Population Growth Rate Trend and 2040 Projection

Period	Period Length (years)	Change in Population	Growth Rate	Avg. Annual Growth Rate
1970-2010	40	32,475	51.0%	1.3%
1990-2010	20	20,680	27.4%	1.4%
2000-2010	10	14,323	17.5%	1.8%
2010-2040*	28	41,880	43.5%	1.6%

Source: U.S. Census; *WVU Bureau of Business and Economic Research

- Most of the County's recent growth occurring near Morgantown.** While the County overall is growing at a faster rate than Morgantown, most of that growth is happening in areas just beyond the city's boundaries. [Map 2](#) shows the population change between 2000 and 2010 within census tracts (or groups of tracts) in the County. Generally, most of the population growth is occurring east of the Monongahela River, with the largest growth concentrated in the area that includes the core of Morgantown and WVU. Most of the county's population exists within the area on the map outlined in red, which includes Morgantown, Westover, Granville, Star City, and major unincorporated places such as Cheat Lake, West Run, Cheat Neck, and Brookhaven. Table 3 shows the breakdown of population and proportion of the county's growth occurring within the red-outlined area and outside of that area.

Table 3. County Population relative to red-outlined area on Map 2 (2000-2010)

	County Total	Within Red-Outlined Area		Beyond Red-Outlined Area	
	Population	Population	Percent of County	Population	Percent of County
2000	81,866	70,905	87%	10,961	13%
2010	96,189	85,399	89%	10,790	11%
change 2000-2010	14,323	14,494	101%	-171.00	-1%

- WVU growth a significant factor in recent growth of the region.** West Virginia University (WVU) has a significant impact on the characteristics of Morgantown's population and those of the overall county. Shortly after the 1998 Morgantown Comprehensive Plan was adopted, the University initiated an effort to dramatically increase enrollment, which was not foreseen at the time the

Table 4. West Virginia University Enrollment 1995-2010

Year	Total Enrollment*	Change	% Change
Fall 1995	21,517	--	--
Fall 2000	21,987	470	2.2%
Fall 2005	26,051	4,064	18.5%
Fall 2010	29,306	3,255	12.5%

Source: West Virginia University
*Includes full-time and part-time students; undergraduate, graduate and professional students

Comprehensive Plan was prepared. The 2006 Ten-Year Master Plan reported a goal of 28,500 students on the Morgantown campus by 2010. WVU reached that goal in 2008 with 28,840 students. Between 2000 and 2010, WVU's enrollment increased 33.3 percent, from 21,987 students to 29,306 (see Table 4). This dramatic increase in enrollment correlates to the significant growth that occurred in the City and county since 2000.

Race / Ethnicity

- Morgantown is slightly more racially diverse than the state, but not diverse by the national average.** In comparison to the national average, Morgantown and Monongalia County are not racially diverse. Nationally, 75 percent of all Americans identify themselves as white, with African Americans being the largest minority at about 13 percent. Within Morgantown, whites have made up about 90 percent of the population over the last 20 years (decreasing slightly from 92% to 89.7% from 1990-2010). In comparison, whites make up 94 percent of West Virginia's 2010 population.
- Monongalia County's racial composition falls between that of Morgantown and the state average.** In 1990 Monongalia County's racial composition was 94 percent white, while the state was 96 percent white. In 2010, whites made up 91 percent of the county and 94 percent of the state.
- Two major racial minority groups.** African Americans and people of Asian descent are the two largest racial minorities in the County, each representing about 3.9 percent of the overall population, or about 1,100 people per group.
- Small Hispanic population in Morgantown.** Of Morgantown's 29,660 residents in 2010, only 765 identified as Hispanic. Though the number is 2.7 times higher than 1990's count of 283 people, it still only represents 1.2 percent of Morgantown's population.

Educational Attainment

- High proportion of high school graduates and growing.** Monongalia County's educational attainment is higher than both state and national averages, and they are on the rise. In 2010, of those 25 years of age and over, 87.8 percent of the population had a high school diploma, compared to 82.6 percent within the rest of West Virginia and 85 percent nationally. The number of Monongalia County's residents who graduated from high school was also up 4.2 percent in 2010 from 83.6 percent in 2000.

- **High proportion of college graduates and growing.** Monongalia County also boasts a high proportion of graduates from 2 and 4-year post-secondary education institutions. Of the residents 25 years and older, 41.4 percent hold at least an Associates or Bachelor's degree, which is considerably higher than the state average of 23.1 percent and the national average of 35.4 percent. That figure is also a rise from 36.2 percent in 2000.
- **Educational attainment on the rise.** From 2000 to 2010, the percentage of people with a high school diploma and those with an Associates or Bachelor's degree consistently rose within West Virginia, Monongalia County and Morgantown.

Age

- **Overall, a perpetually young population.** Monongalia County's median age has remained steady and well below the state average for the last 20 years, and the gap is widening. The median age fluctuated slightly from 22.8 in 1990 to 23.1 in 2000 to 22.6 in 2010. The state and national trend is that the median age is rising. The state's median age has risen from 35.4 in 1990 to 38.9 and to 41.3 in 2010. West Virginia University's presence and recent growth is undoubtedly the reason. The University's growth has brought more college-age (18-24 year olds) people into the County, which has offset the aging permanent population, particularly the large cohort of baby-boomers (who were between the ages of 45 and 64 in 2010).

Table 5. Population by age

Age	Morgantown		Monongalia County	
	Population	Percent	Population	Percent
Under 5 years	786	2.7	4,467	4.6
5 to 9 years	645	2.2	4,182	4.3
10 to 14 years	574	1.9	4,056	4.2
15 to 19 years	5,764	19.4	9,778	10.2
20 to 24 years	10,110	34.1	18,495	19.2
25 to 29 years	2,435	8.2	8,376	8.7
30 to 34 years	1,246	4.2	5,963	6.2
35 to 39 years	928	3.1	5,200	5.4
40 to 44 years	856	2.9	5,089	5.3
45 to 49 years	895	3.0	5,376	5.6
50 to 54 years	989	3.3	5,536	5.8
55 to 59 years	1,077	3.6	5,467	5.7
60 to 64 years	961	3.2	4,378	4.6
65 to 69 years	645	2.2	3,100	3.2
70 to 74 years	468	1.6	2,210	2.3
75 to 79 years	448	1.5	1,719	1.8
80 to 84 years	430	1.4	1,514	1.6
85 years and over	403	1.4	1,283	1.3

Source: U.S. Census

- **The College-age population is the largest cohort.** Over half (53.5%) of Morgantown's 29,660 residents in 2010 were between the ages of 15 and 24. No other age cohorts comprise nearly the same share of the population within Morgantown. The trend continues, though not as pronounced, throughout the rest of Monongalia County where the largest cohorts are those between the ages of 15 and 24, but here they represent 29.4 percent of the population. In most communities across the United States, the largest cohort is the baby boomer generation (who were between the ages of 45 and 64 in 2010).

Households

- **A smaller average household size and declining.** Morgantown's and Monongalia County's average household size has historically tracked much lower than the state and national average – largely due to the WVU student population. Over the last 20 years in Morgantown, Monongalia County and West Virginia,

the average household size has been falling, consistent with a national trend. The national recession since 2007 caused household size in many communities to stop declining, and in some cases increase, as economic conditions forced more people to live together out of necessity. That recent trend appears to be less significant in Morgantown and Monongalia County. As household size declines (assuming the total population is constant), more houses are needed to accommodate the population.

Table 6. Average Household Size Relative to Total Population 1990-2010

	Morgantown		Monongalia County		West Virginia	
	Population	Household Size	Population	Household Size	Population	Household Size
1990	25,879	2.21	75,509	2.40	1,793,477	2.55
2000	26,809	2.08	81,866	2.28	1,808,344	2.40
2010	29,660	2.05	96,189	2.24	1,852,994	2.36
Change 1990-2010	3,781	-0.16	20,680	-0.16	59,517	-0.19

Source: U.S. Census

- **Few children under 18 in Morgantown and Star City households.** Within Morgantown only 8 percent of households have children under age 18. Within Monongalia County, the proportion is much higher at close to 16 percent while the statewide average is 20.8 percent.

Income

- **County's average income limited by student population.** Monongalia County's per capita income was the eighth highest in the state in 2010 at \$23,535. That figure, however, includes college students who are typically low wage earners. Excluding that population would likely dramatically increase the county's standing relative to the state's other counties.

II. UNDERSTANDING GROWTH AND DEVELOPMENT

A. Land Use and Development Patterns

This section includes an analysis of the existing land use conditions in and around Morgantown and an analysis of the land consumption trends and constraints to development. The maps within this section were created using aerial photography, GIS data provided by the city and MMMPO and field reconnaissance. The data was gathered from multiple sources and minor inconsistencies are apparent. As such, the maps and accompanying numbers are drafts and should be considered approximations of actual conditions.

Growth Trends and Existing Land Use

- **Among the most dense of West Virginia cities.** Morgantown occupies approximately 10.5 square miles (6,723 acres including streets and water bodies). It has a population density of 2,825 persons/square mile (4.41 persons/acre) making it one of the most densely populated cities in West Virginia. Relative to other US cities, however, Morgantown's gross population density is not notably high. In fact, somewhat surprisingly, it is less than the median density of US cities (which is about 3,000 persons/square mile). That is because over 40 percent the city's land is either farmland owned and maintained by WVU, or the Morgantown Municipal Airport. If the farmland and airport are not included in the calculation, the city's density would be almost 4,000 persons/square mile. However, the city's density is not experienced at this macro scale, but rather, within neighborhoods. Due to the compact nature of residential development throughout most of the city and surrounding areas, the city feels very dense. See [Map 3](#) for context.
- **Relatively little recent growth through annexation.** Since the year 2000, the city has expanded by approximately 125 acres. Over half of this area came through one 69 acre annexation, which brought the Walmart development south of I-68 into the city. No residential land was added to the city through annexation during the last decade. Between 1990 and 2000, the city added about 20 percent to its land area (approximately 1,180 acres) including 1,023 acres owned by WVU, which remains mainly farmland.
- **Existing land use.** [Map 4](#) shows existing land uses within Morgantown. This map was created using parcel geography from the city's digital zoning map, aerial photography, and a windshield survey. Listed below are brief descriptions of the land use classifications. Table 7 shows the breakdown of land use by type within Morgantown. The total acreage is less than the gross acreage mentioned above because the land use does not include rights-of-way (streets) and water bodies. Approximately 5,611 acres of Morgantown's total area is platted into lots. The remaining land is roadways and water bodies such as the Monongahela River and Decker's Creek.
 - **Retail** – Retail uses exclusively, any scale.
 - **Office** – Office uses exclusively, any scale
 - **Mixed Commercial** – A mix of office, retail or other commercial activities in the same structure or development.
 - **Mixed-Use Residential/Office** - A mix of office and residential activities in the same structure.
 - **Mixed-Use Residential/Retail** - A mix of retail and residential activities in the same structure.
 - **Hotel / Accommodation** – Hotel and accommodation uses and related activities
 - **Industrial** – Includes heavy industry (manufacturing, wastewater treatment) as well as warehousing.
 - **Parking** – Commercial and residential uses in the same development.

- **Public / Semi-public** – Public buildings, schools, churches.
 - **Park** – City parks and rail-trail.
 - **Residential, Single Family** – Single detached housing units, includes cases where one parcel appears to have more than one single family home
 - **Residential, Two-Family** – Two dwelling units in the same structure (duplex).
 - **Residential, Multi-family** – Three or more dwelling units in the same structure.
 - **Residential, Mobile Home** – Parcels containing multiple mobile home structures.
 - **WVU** – Land that is part of West Virginia University's campus. This includes housing, recreational, academic, hospital, and agricultural land and facilities.
 - **Vacant / Underutilized** – Significant undeveloped area where a structure may have been present at one time, or an undeveloped platted lot that is large enough to accommodate one or more single family homes.
 - **Vacant / Open Space** – Significant undeveloped land functioning as open space – generally wooded areas that are not subdivided into buildable lots.
- **Mostly built-out.** Morgantown is mostly built-out with very little undeveloped land within the city limits to accommodate growth. The undeveloped land that does exist is generally either owned by WVU or constrained by topography or floodplain. This leaves the city with the two options for capturing a larger proportion of the region's growth: 1) encouraging redevelopment and intensification of already developed areas of the city, and/or 2) expanding outward through annexation.

Table 7. Morgantown Existing Land Use 2012

Land Use	Total Acres	Percent
Retail	242.0	4.3%
Office	75.2	1.3%
Mixed Commercial	2.2	0.0%
Mixed-Use - Residential / Office	16.8	0.3%
Mixed-Use - Residential / Retail	104.2	1.9%
Industrial	26.6	0.5%
Hotel / Accommodation	10.5	0.2%
Public / Semi-Public	888.7	15.8%
WVU	1810.9	32.3%
Park / Recreation	377.7	6.7%
Parking	37.9	0.7%
Residential - Mobile Home	40.3	0.7%
Residential - Multi-Family	111.1	2.0%
Residential - Single-Family	1192.0	21.3%
Residential - Two-Family	91.8	1.6%
Vacant / Open Space	526.2	9.4%
Vacant / Underutilized	56.5	1.0%
TOTAL	5,611	100%

Note: Acreages are approximate. Land use by parcel determined through observation by means of a windshield survey and aerial photography. Uses were not verified by property owners or tax records.

Map 5 shows vacant and underutilized land in the city. Vacant sites are those that are mostly in a natural state and show no signs of development within them, though they may be platted lots. Underutilized sites include residential lots that do not contain structures, but which appear to be maintained, sites with vacant buildings, industrial brownfields. For the most part, these sites are isolated and small, limiting their development potential. Also, a substantial amount of this vacant land is constrained by geography. **Map 6** shows these vacant areas that are not constrained by floodplain or steep slopes.

- **WVU land makes up approximately 32 percent of the city.** Of the city's 5,611 acres, approximately 1,800 acres are owned by WVU. Of the 1,800 acres, approximately 1,280 acres (19% of the city) remains undeveloped farmland, serving as WVU's agricultural campuses.
- **Residential development is the largest land use.** After WVU and other institutional uses, residential land makes up the largest portion of land uses with approximately 25 percent of the city. Most of the

residential uses within the city are single-family (over 21 percent) with multi-family uses occurring mostly near downtown and WVU campuses. Neighborhoods near downtown are less homogenous, featuring a mix of residential types, from single-family, duplex and multi-family buildings at various densities.

- **Abundance of retail space in Morgantown and surrounding areas.**

Morgantown has approximately 2.66 million square feet of retail space, or about 90 square feet per person. That per capita amount is nearly double the national average, which is 46.6 square feet. While not all of the retail space is occupied, there is more retail space in Morgantown than it needs to serve its own population. The retail space in Morgantown clearly serves people outside of the city and beyond the county, yet there is a significant amount of competing retail elsewhere in the county (much of it newer development). The four major shopping centers in the county account for more retail floor area than all of the retail space within Morgantown. Adding these shopping centers to Morgantown's retail space provides 56 square feet per resident in the county (without counting any of the smaller retail establishments that exist).

Table 8. Morgantown Existing Land Use 2012, Retail, Office and Industrial Space

	Buildings	Square Feet (Floor Area)*	Acres (parcels)
Retail	291	2,660,112	343.9
Office	157	935,143	24.0
Industrial	31	154,155	26.6

*Square footage was calculated from building footprints and therefore assumes that each use occupies only the ground floor. These figures may be an underestimate of the total floor area, particularly for office uses, which are often in multi-floor structures.

Table 9. Morgantown Existing Retail Space, 2012

	Square Feet (Floor Area)*	2010 Population	SF per Capita	National Average ***
Total Retail in Morgantown	2,660,112	29,660	89.7	46.6
Shopping Centers in County**	2,723,613	-	-	-
Morgantown Total Retail plus County Shopping Centers	5,383,725	96,189	56.0	-

*Square footage was calculated from building footprints and therefore assumes that each use occupies only the ground floor. These figures may be an underestimate of the total floor area, particularly for office uses, which are often in multi-floor structures.

**Major centers outside of Morgantown (Suncrest Town Center, Morgantown Mall, University Town Center, Glenmark Center)

***According to the International Council of Shopping Centers (ICSC), 2010

- **Land Use Conflicts.** The existing land use map reveals some potential land use conflicts within the city and at its edges. These conflicts fall into two broad categories:
 - **Morgantown Zoning.** There are a large number of sites that do not conform to current zoning standards both in terms of land use and development intensity. More on this topic will be covered in the second technical report.
 - **County Development.** The city is on the verge of becoming landlocked by development in unincorporated areas. This development doesn't conform to the standards of Morgantown's zoning in terms of use or design standards (most of the County has no zoning). In many cases the county development is more intense than nearby development in the city with an abundance of high-density multi-family residential developments and large shopping centers

(Suncrest Town Center, Glenmark Center). Also, the Morgantown Municipal Airport is almost completely surrounded by unincorporated land without zoning. The city currently has no ability to control development which may be in conflict with the airport.

- **Redevelopment has been occurring.** In the past ten years redevelopment has taken place within Morgantown and in unincorporated areas near the city's edge. These redevelopments have occurred across the city and have been somewhat isolated from each other. These areas include Downtown and surrounding neighborhoods, the area around the WVU campuses, the riverfront and areas on the city's urban-rural edge. The new developments have been mostly multi-family residential or, in the case of the riverfront and downtown, mixed-use combining commercial and residential. Multiple mobile home parks on the city's edge (mainly in unincorporated areas) have been redeveloped as multi-family residential areas, presumably serving the growing student population.
- **Growing more dense.** The recent rate of land consumption per capita in the Morgantown area is lower than its historic average (see Land Consumption and Projections, below). In other words, it is growing in a pattern that is more dense than in the past. That observation is not only true within older areas of the city that are experiencing redevelopment, but also in unincorporated areas just beyond the city limits. This pattern is a significant contrast to most American cities that have been growing in increasingly less dense patterns since the 1950s.

Map 7 shows an area of Morgantown that has seen an abundance of development since 2000. This area is generally north of Downtown and includes much of the West Run area, which is an unincorporated part of the county. In terms of land area, more development has occurred just outside of Morgantown's boundaries. The predominant land use of the development both inside and outside of the city is multi-family residential.

Land Consumption and Projections

Land consumption is a measure of the rate at which land is developed relative to the amount of people occupying that land. The land consumption rate is a way to predict how much land will be developed in the future to serve the county's projected population growth. The rate was calculated in two ways to provide a conservative consumption rate that takes the historical growth of the community into account and rates that reflect current development patterns.

1. **Historic Land Consumption.** The entire City of Morgantown gross land area divided by its 2010 population.
2. **Morgantown Growth Areas.** The acreage of new development within four geographic areas (**Map 8**) that occurred between 2000 and 2010, divided by the population change in those areas between 2000 and 2010.
 - Area 1 includes downtown Morgantown and most of WVU's campus extending to route 705.
 - Area 2 includes Star City north to county line south of Mon. River; Sabraton, Airport and Cheat Lake north of I-68
 - Area 3 includes Granville, Westover, and the south of Morgantown including Walmart; southeast of Mon. River, southwest of Kingwood Pike to county line
 - Area 4 includes Cheat Lake and Cheat Neck areas south of I-68 and northeast of Kingwood Pike

Table 10 shows these rates and their average.

- Recent trend of 0.21 acres of land consumed for each new resident.**
 Averaging the rates for the four growth areas yields a rate of 0.21 acres per person. This average is weighted to the change in population within each area (Thus Area 1, with the largest population growth had more weight).

Table 10. Land Consumption Rates for the Morgantown Area

	Population change 2000-2010	Acres Developed 2000-2010	Land Consumption Rates (acres / person)
Historic Land Consumption	-	-	0.19
Growth Area 1 (2000-2010)	6,705	486	0.07
Growth Area 2 (2000-2010)	3,350	816	0.24
Growth Area 3 (2000-2010)	3,072	988	0.32
Growth Area 4 (2000-2010)	2,209	969	0.44
Growth Area Average			0.21

- Roughly 8,800 acres of land needed to accommodate the county's projected population growth by 2040.** The county is projected to add approximately 41,880 people by the year 2040 (Based on a population projection prepared by WVU). Assuming 0.21 acres per person, this growth will require 8,800 acres of land to be developed. The projections should be viewed with the consideration that the future growth and development of the community may not follow historic or current patterns of development. This growth could occur within currently undeveloped areas of the county, and/or occur through redevelopment of land.

Environmental Features

- Natural features of the area are both an asset and a challenge.** The Morgantown area's picturesque terrain of hills and valleys and its water features such as the Monongahela River, Decker's Creek and Cheat Lake provide both an ideal setting for outdoor recreation and attractive sites for development. **Map 9** shows the area's most notable environmental features including the Monongahela River, Cheat Lake, Decker's Creek and other minor streams, as well as how they relate to the county's peaks and valleys.
- Topography is a challenge to development.** There is very limited land in the city that is undeveloped and the land that remains is generally constrained by steep slopes. Throughout the county, topography has an impact on development. Steep slopes reduce the developable area of a piece of land, or require major engineering interventions to accommodate structures – both of which increase the cost of development. Topography is a major obstacle for certain types of development including industrial uses and large format commercial centers, which require large sites and space for large footprint buildings. **Map 10** shows topographic constraints to development in the Morgantown area. Generally, any area with average slope of greater than 31 percent (17 degrees) is considered extremely difficult to develop. Within Morgantown, sites with slopes greater than 16 percent (9 degrees) require additional

zoning requirements such as larger minimum lot size and streets with curb and gutter (see 1321 Design Standards; and 1325 Hillside Areas). **Map 10** gives an indication of the amount of land that has some degree of topographic constraint. In Morgantown, the determination of the actual slope of each site must be made by a professional survey and considered as part of site plan review. In unincorporated areas, there are effectively no regulatory restrictions regarding slope. In these areas the degree to which a site is developable mainly depends on the determination of an individual developer with respect to the costs of building on that land.

- **Floodplain areas are the primary constraint to development in unincorporated areas.** In unincorporated areas of the county that do not have any zoning, the main regulatory constraints to development are floodplains. Structures within flood hazard areas, as defined by the Federal Emergency Management Agency (FEMA), are required to carry flood insurance. Sites in flood hazard areas are also subject to local regulations that may impose requirements such as avoiding flood-prone areas completely or in some way mitigating environmental impacts. **Map 10** shows the 100-year flood zones that exist around Morgantown. In general, development should avoid flood hazard areas.

Community Design

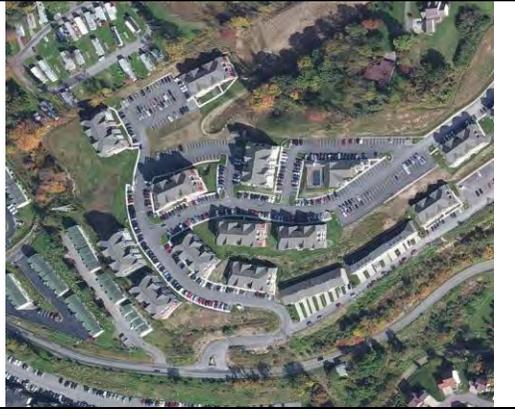
This section summarizes the community's urban form characteristics and describes context zones within Morgantown and immediately surrounding areas. The urban form characteristics analyzed in this section include the roadway network, pattern of uses, and pattern of development (block length, lot size, building size) which work in combination to define the context zones. The purpose of this analysis is to examine the different types of development in the community and these development patterns have on community character and level of mobility. The final plan will reference this analysis when considering the character and form of future development. The context zones are described below. **Map 11** shows where these zones occur. For the purpose of this analysis, areas outside of Morgantown are included to depict development patterns regardless of jurisdictional boundaries. The area approximately encompasses the Morgantown Utility Board's stormwater management area, south to I-68.

Core

The Core is the zone of densest development within the city and is generally defined as Downtown Morgantown. The form is characterized by a gridded street pattern with short walkable block lengths and buildings generally ranging from two to twelve stories that are located close to each other and to the street. A mixed use district, the core contains a range of retail, office, institutional and residential activities, with many buildings containing multiple types of uses within them. This is the most walkable district with the pattern and mix of uses supporting a high degree of pedestrian mobility.



<p>Corridor</p> <p>Corridors are linear districts defined by development along arterial or collector roadways. These areas are auto-oriented and are dominated by commercial uses. There are a range of conditions that differ among the area's corridors but they all share some general characteristics, including long blocks, buildings setback from the street and parking areas facing the street. The corridors are generally not pedestrian friendly due to lack of sidewalks, long block lengths and many vehicle access points (curb cuts) which create conflicts for pedestrians.</p>	
<p>Commercial Node</p> <p>Commercial nodes exist in various locations throughout the planning area. These large-scale, primarily retail developments have large single-story buildings that are set back from the roadway and surrounded by surface parking. They are located along arterial roadways and have limited points of entry. These nodes include Mountaineer Mall, Suncrest Town Center*, Walmart, and Glenmark Center*.</p> <p>* Sites outside of Morgantown's city limits</p>	
<p>Neighborhood 1</p> <p>The neighborhood 1 district has the highest density of buildings on the smallest lots. The district is in close proximity to the core and contains a mix of housing types. The blocks are small along a gridded street pattern.</p>	
<p>Neighborhood 2</p> <p>The second neighborhood classification has a relatively lower density than neighborhood 1 with longer blocks and slightly larger lots. The street pattern is generally a modified grid with more variety of block sizes, but still retaining a high degree of connectivity. This district has less diversity of housing stock, primarily containing single-family homes or single-family structures that have been divided into multiple dwellings. The neighborhoods have multiple entry points with walkable access to transit, although many of these areas lack sidewalks.</p>	

<p>Neighborhood 3</p> <p>The third neighborhood classification has the lowest residential densities in the planning area. These neighborhoods are mostly connected to the existing city street pattern but have more suburban character with limited access points (in some cases only one), large lot sizes, curvilinear streets and are almost exclusively single-family residential. These neighborhoods occur primarily at the edges of the city, and their street pattern is strongly influenced by topography.</p>	
<p>Neighborhood 4</p> <p>The fourth neighborhood category is the most suburban with single-type residential developments that are disconnected from the fabric of adjacent areas. Residential density varies but each development typically has one type of residential product such as large-scale apartment complexes, semi-detached condos, mobile home parks and single-family developments. These homogenous pods of development are primarily located at the city's edge or in unincorporated areas such as West Run.</p>	
<p>University District</p> <p>This designation is used for the campuses of West Virginia University. This includes the Downtown, Evansdale, and Health Sciences Campus, but does not include the University's agricultural campuses (which are considered rural in character).</p>	
<p>Special District</p> <p>Large special-use districts throughout the city that do not conform to other designations. The Airport, East Oak Grove Cemetery, and the Federal Corrections Institute.</p>	

<p>Rural Rural areas are the least intensely developed. These include isolated residential or commercial uses and farming operations.</p>	
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B. ECONOMIC DEVELOPMENT

The following are key points from the economic overview prepared by Randall Gross / Development Economics. The full report (attached) serves as a background on economic conditions, strengths and weaknesses of the area.

- **The Monongalia County economy is driven by health and education assets**, which are concentrated there. West Virginia University (WVU), along with major hospitals and related health and social services, together generate almost 40% of the county's 51,725 jobs (in 2011).
- **Monongalia County added approximately 12,600 jobs between 1998 and 2011, yielding a growth rate of 43.6% (or about 3.35% per annum).** This growth far surpassed the state's employment growth rate of 0.4% per annum during this period. In fact, the Morgantown area has become a major growth node for the state of West Virginia. The most recent data suggest that the job growth in the Morgantown Metro Area has exceeded the rate of job creation at the national level.
- **Growth has not been concentrated in any one industry but has been spread across much of the local economy.** Growth rates in seven major industries exceeded the average for the county as a whole. The fastest growth was experienced in professional, scientific and technical services, which saw an increase in employment of nearly 160% between 1998 and 2011. The presence of a large pharmaceutical company, together with research at WVU and government facilities like the National Energy Technology Laboratory and the Centers for Disease Control, have no doubt contributed to spin-off growth in the region's professional, scientific and technical jobs base.
- **Recession-resistant.** The metro area unemployment rate of 5.5%, though higher than the 3.2% rate recorded in 1st Quarter 2008, was still well below both the state (7.8%) and national (8.3%) averages. In fact, the Morgantown MSA had the 36th lowest unemployment rate of 372 metropolitan areas nationwide and 9th lowest among metro areas in the South. While housing markets have fallen precipitously around the country, Morgantown housing prices have generally held steady through the national recession. The area's relatively stable economic performance no doubt reflects the strength of its core employment in education and health care, along with the dominance of a large and growing locally-based pharmaceutical company. The re-birth of the mining industry has no doubt contributed to an even faster local recovery from the 2008-2009 national recession.
- **Economic Development Strengths.** The presence of West Virginia University, which provides stability, attracts the "best and brightest" from the state and beyond, and invests in innovation that attracts entrepreneurial activity. The concentration of highly-skilled and educated professionals in the Morgantown area is fairly unique within the state and even within the 13-county workforce region. As such, the Morgantown area attracts industry in need of such skills. The university is pro-active in establishing and encouraging entrepreneurship through its various incubators, R&D park and other programs which help strengthen the region's base for economic development. WVU is also an anchor for marketing the region's I-79 High Tech Corridor, which also includes federal government research facilities and innovative private companies like Mylan Pharmaceuticals. The clustering of these activities does provide the region with a solid base for recruiting technology companies.

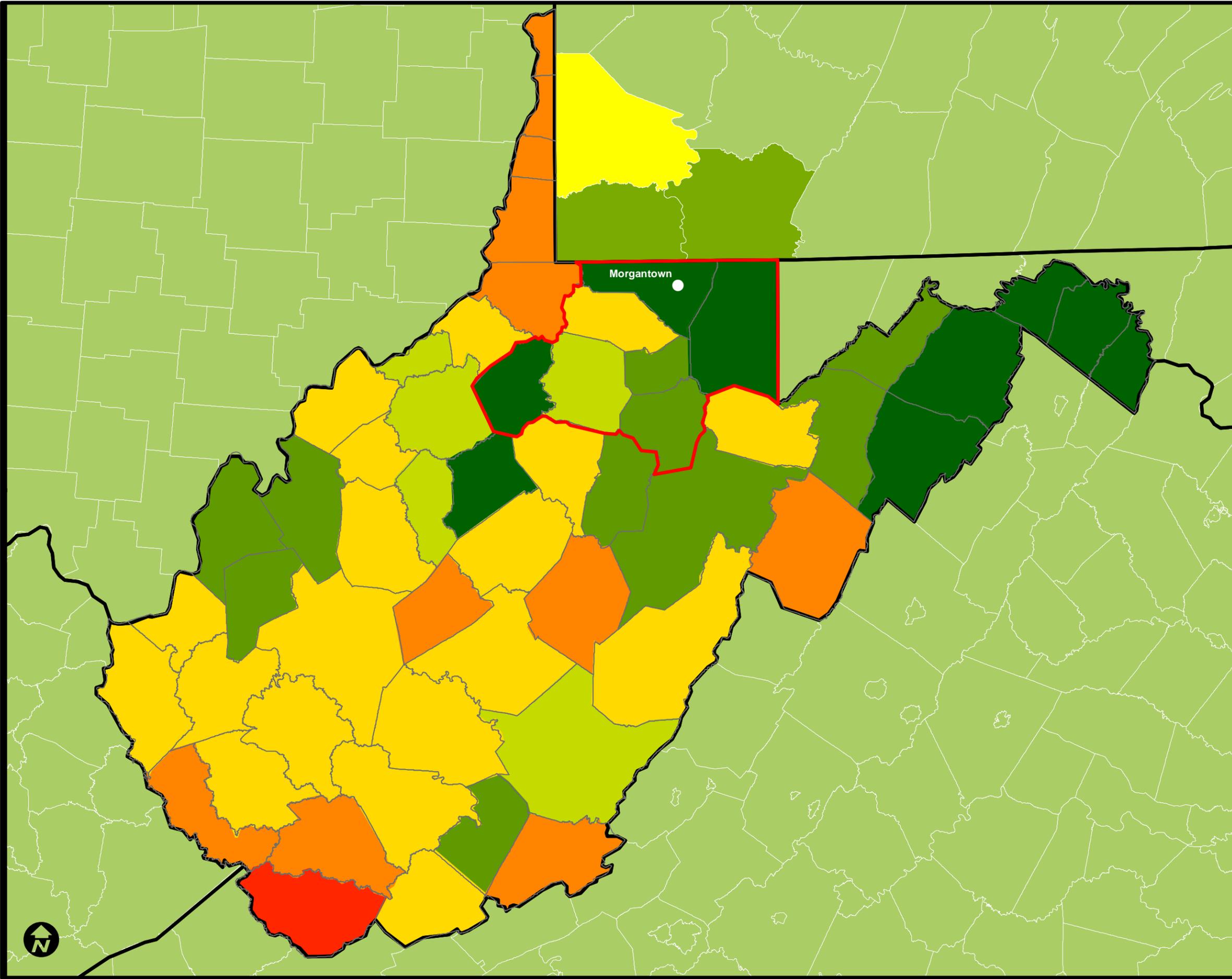
Other strengths include Morgantown's strategic location just 1½ hours south of Pittsburgh, accessible north and south by I-79 and east by I-68, also provides a competitive advantage for economic growth. Morgantown is part of an urban corridor linked closely with growing cities like Clarksburg and Fairmont in north-central West Virginia. The area also has access to natural resources, including shale reserves for natural gas production throughout western Pennsylvania and northern West Virginia. The surrounding area also has unparalleled natural beauty and a strong reputation for outdoor sports and recreation that increasingly attracts sports enthusiasts and tourists from around the country. The natural beauty and available recreation assets in the region contribute to the quality of life that is attractive to young entrepreneurs and emerging technology companies.

- **Economic Development Challenges.** Critical challenges include the cost of development, which is driven up by a scarcity of developable land and lack of infrastructure. While the interstate system is effective in moving commuters from one part of the region to another, intra-city travel is challenging due to the antiquated road conditions. Traffic congestion is a serious complaint of business and residents alike. Winding mountain roads with steep drop-offs within an urban, inner-city context (especially in a heavy snowfall) contribute to the overall impression that driving is difficult within Morgantown. If not for the WVU's PRT and Mountain Line Transit (bus), there would likely be even more serious road conditions.

C. TRANSPORTATION

The following are highlights of the transportation existing conditions report for Monongalia County prepared by Burgess & Niple as part of the Long Range Transportation Plan effort, which is underway concurrent to the comprehensive plan process. The complete report will be attached to the second technical report.

- **19.5 miles or 5.1 percent of the county's roadways are operating at levels above their efficient capacity.** 18 separate corridors were identified as operating with capacity deficiencies. These include US 19, SR 705, US 119 and others.
- **Crash Statistics.** The City of Morgantown has averaged 3 to 4 accidents per day on its roadways between June 2008 and December 2011. Patterson Drive at the Monongahela Blvd. intersection had the highest incident rate with 188 crashes happened in this intersection over the study period.
- **The Mountain Line Transit Authority (MLTA) offers a weekday bus service and is planning to increase service frequency and ridership.** Ridership on the system is expected to increase by 15 percent between 2013/2014, and 6 percent between 2014/2015. This would increase ridership by 373,395 passengers.
- **WVU also provides transit alternatives for its students and faculty with the unique PRT line and multiple shuttles.** The PRT Facilities Plan outlines a strategy for improvements to the PRT along with costs and funding.
- **57 percent of the total population of the county has access to transit services.** More than 12,000 jobs, and 27,540 people are within a ¼ mile of a bus stop or ½ mile of a PRT station.
- **Despite shortcomings in the city's pedestrian infrastructure, Morgantown has a higher percentage of residents walking to work than any other community in the state.** 16.8 percent of commuters walk to work daily. Yet, sidewalks are limited or non-existent in many areas of the city. Also many of the city's sidewalks are not sufficiently maintained and have fallen into disrepair, and others are not fully ADA-compliant.
- **The Pedestrian Safety Board was established in 2007,** to promote a walkable environment throughout the city by developing safe, attractive and accessible walkways that connect neighborhoods and destinations. The board produced the Morgantown Pedestrian Safety Plan which established nine goals for pedestrian accessibility in Morgantown.
- **The city currently has limited bicycle infrastructure, yet Morgantown has taken significant steps in the past few years to support progress towards improving bicycling in the city.** The lack of infrastructure is due, in part, to the challenges with the City's hilly geography and limited rights-of-way on roadways. Efforts to improve bicycling include the creation of a Bicycle Board, the development of the Greater Morgantown Bicycle Plan, and the adoption of a "Complete Streets" policy.



MAP 1 County Population Change: West Virginia 2000-2010

 Mountaineer Region

County Population Change
2000-2010

-  Greater than -10% decline
-  -5% to -10% decline
-  0 to -5% decline
-  0 to 3% growth
-  3 to 10% growth
-  10% or greater growth

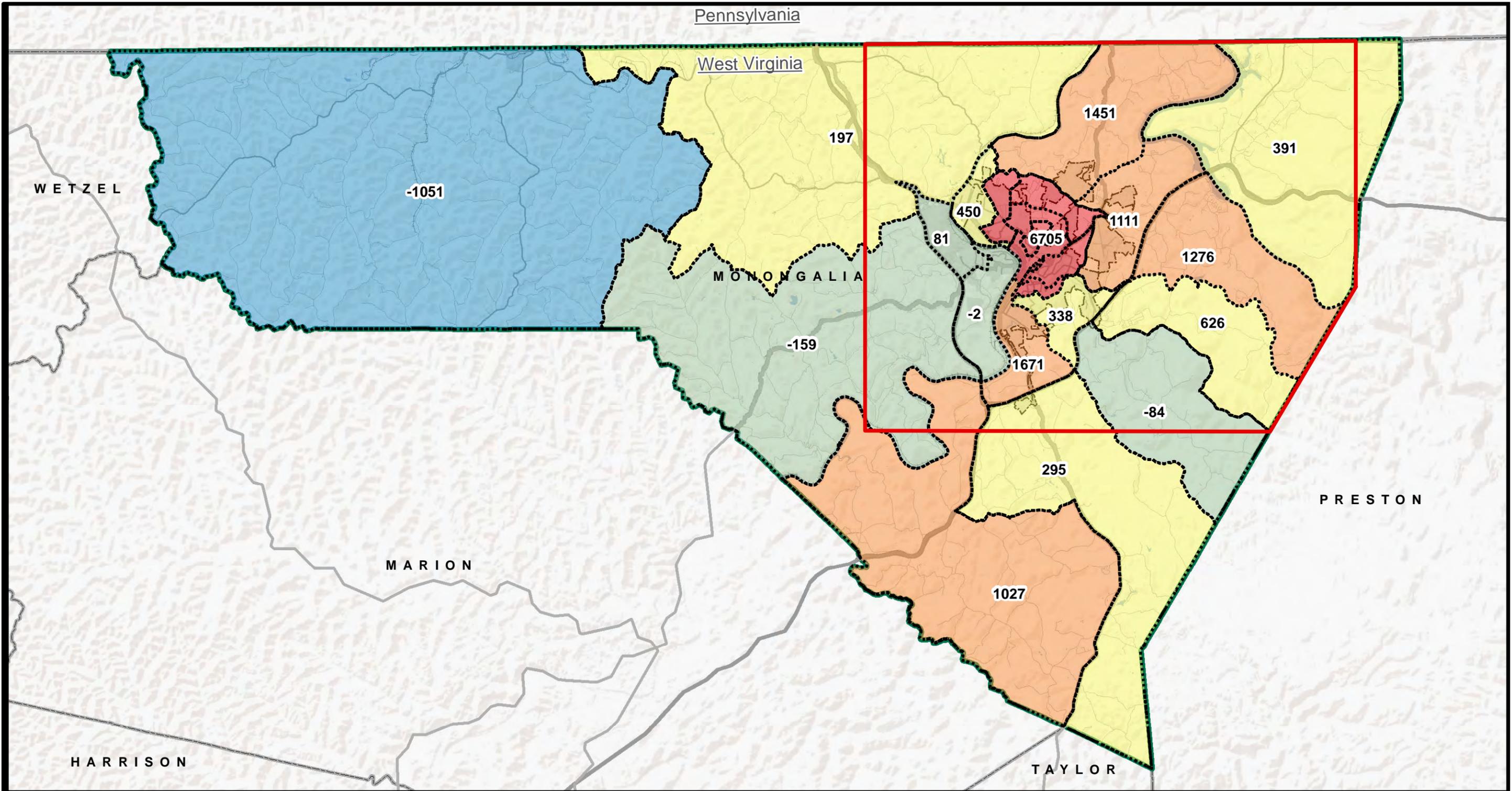
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Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Revised : 4/6/2012





MAP 2 Population Change 2000-2010

Revised : 4/9/2012

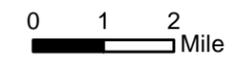
Change in Population

- 1051
- 1050 - 81
- 82 - 626
- 627 - 1671
- 1672 - 6705

- 2010 Census Tract Boundaries
- Morgantown Boundary
- Monongalia County Boundary

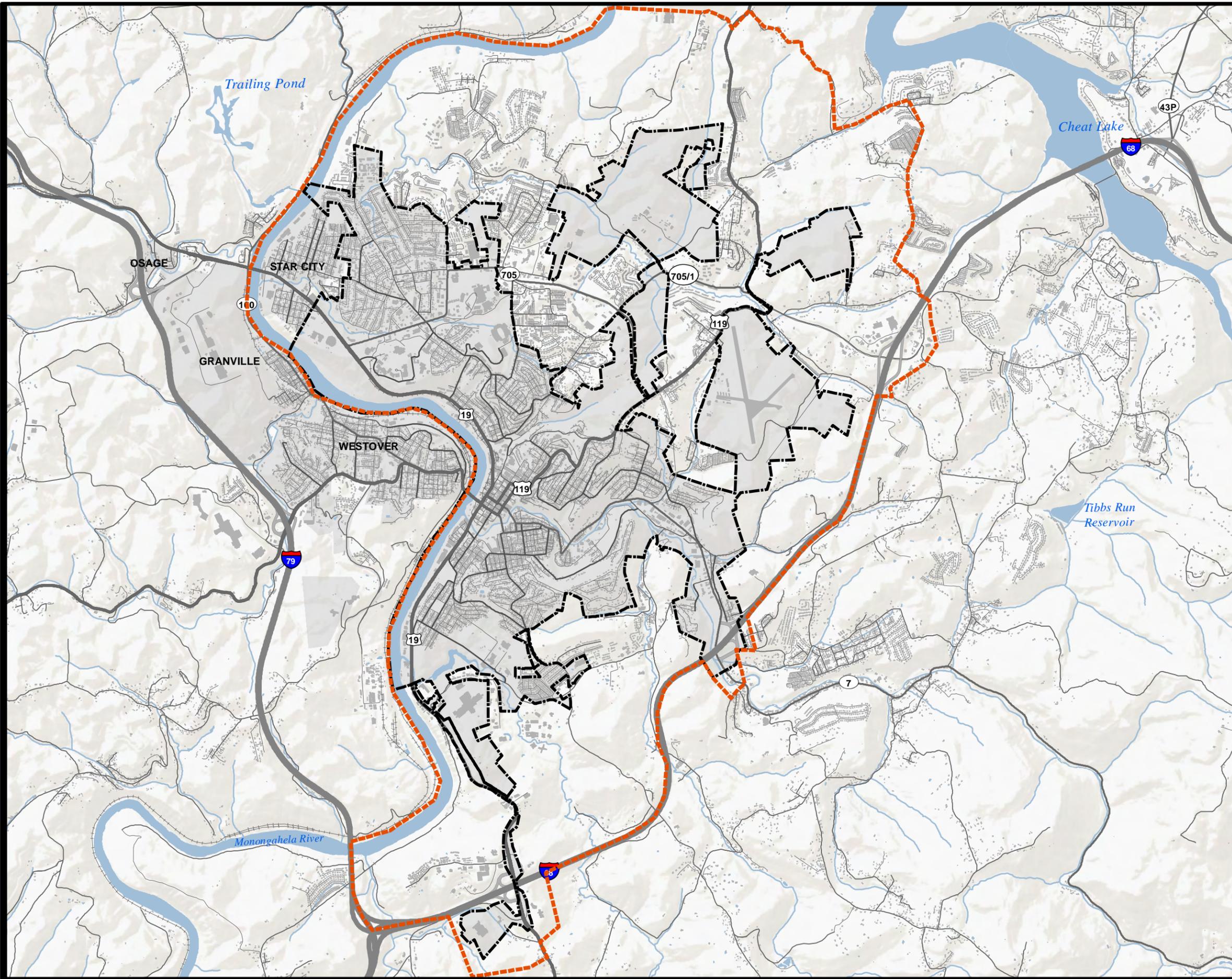
- Interstate
- US Routes
- State Routes
- Collector
- Local Roads

SCALE : 1:165,000



Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 Units: Meter

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MAP 3 City of Morgantown Context

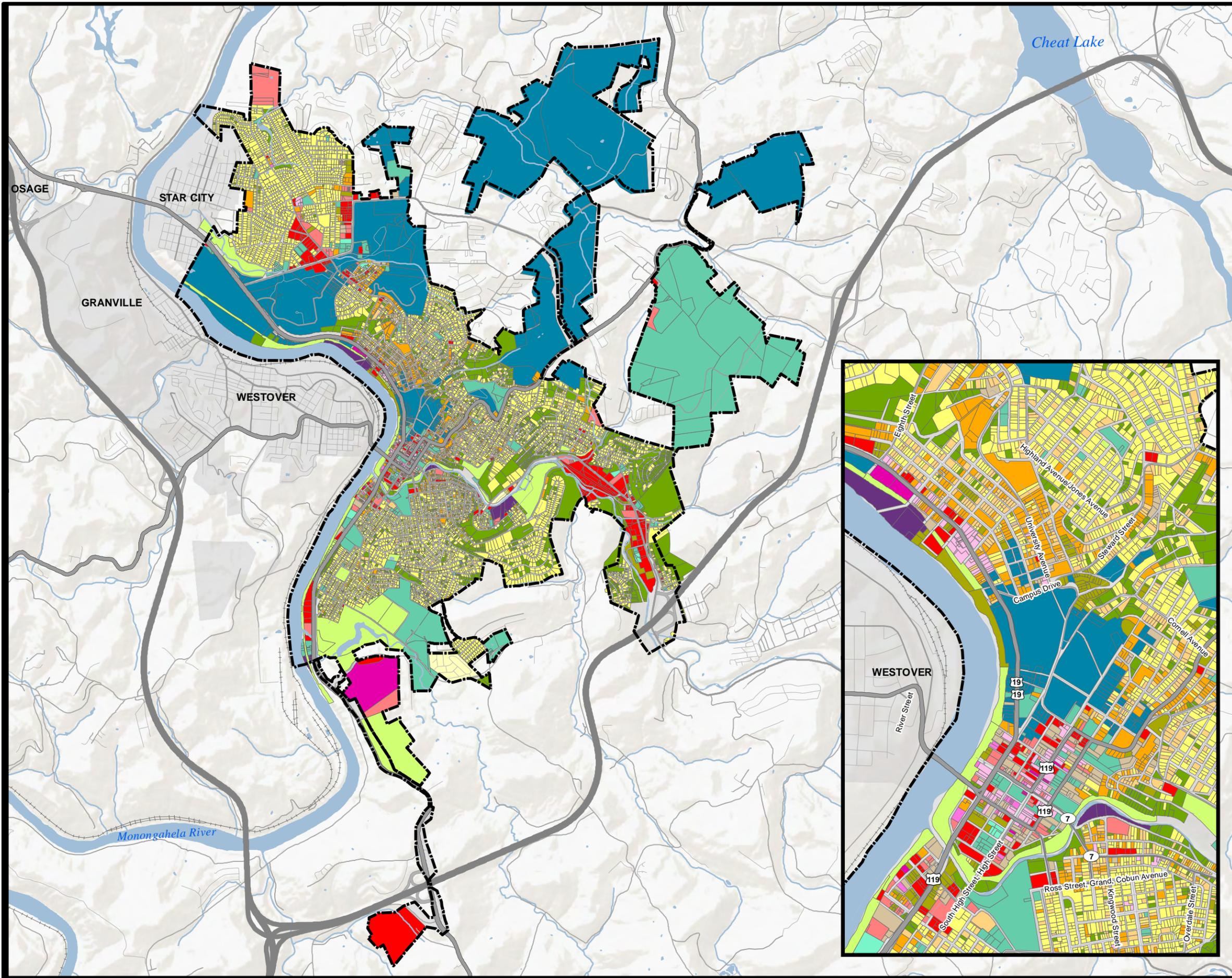
- Planning Boundaries
- Morgantown Boundary
- Interstate
- US Routes
- State Routes
- Collector
- Local Roads
- Railroads
- Buildings
- Water Bodies
- Streams
- Incorporated Areas

SCALE : 1:50,000

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Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Revised : 4/6/2012



MAP 4 City of Morgantown Existing Land Use

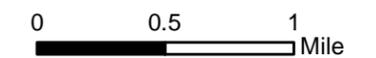
- Morgantown Boundary
- Interstate
- US Routes
- State Routes
- Collector
- Local Roads
- Railroads
- Water Bodies
- Streams

Land Use 2012

- Retail
- Office
- Mixed Commercial
- Mixed-Use - Residential / Office
- Mixed-Use - Residential / Retail
- Hotel / Accomodation
- Industrial
- Parking
- Public / Semi-Public
- WVU
- Residential - Multi-Family
- Residential - Two-Family
- Residential - Single-Family
- Residential - Mobile Home
- Park / Recreation
- Vacant / Open Space
- Vacant / Underutilized
- Incorporated Areas

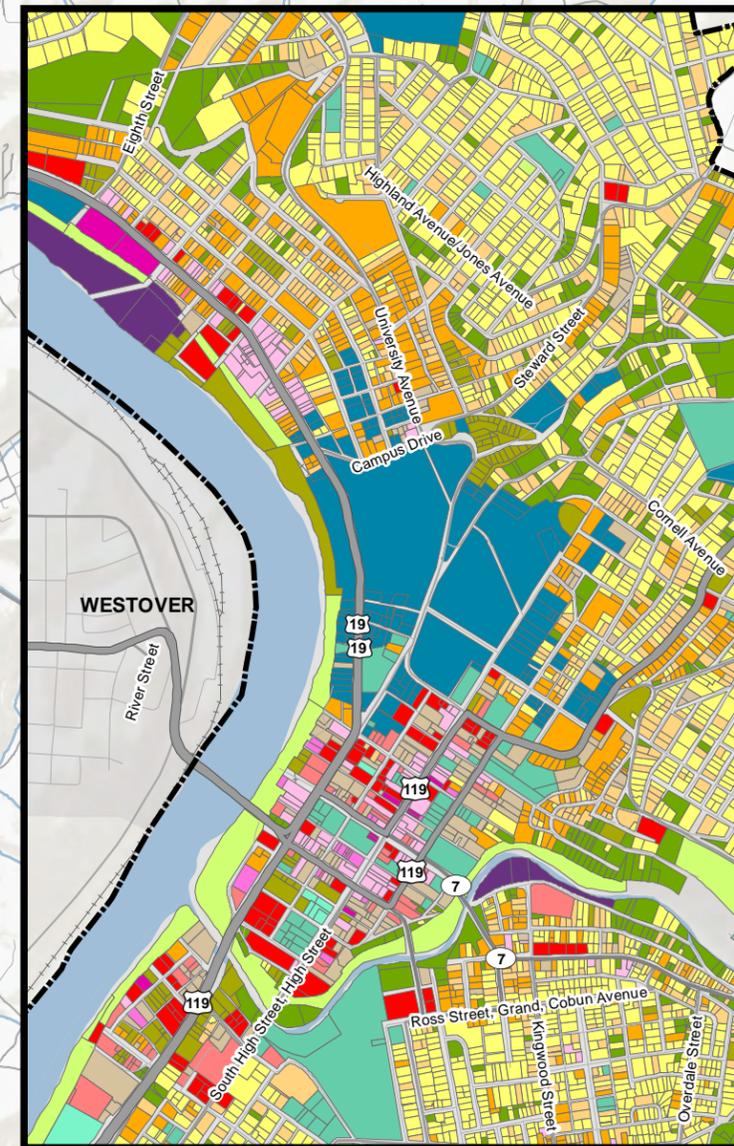
Note: This map represents an approximation of existing land use by parcels within the city. Land use was determined through observation by means of a windshield survey. Uses were not verified with property owners or tax records.

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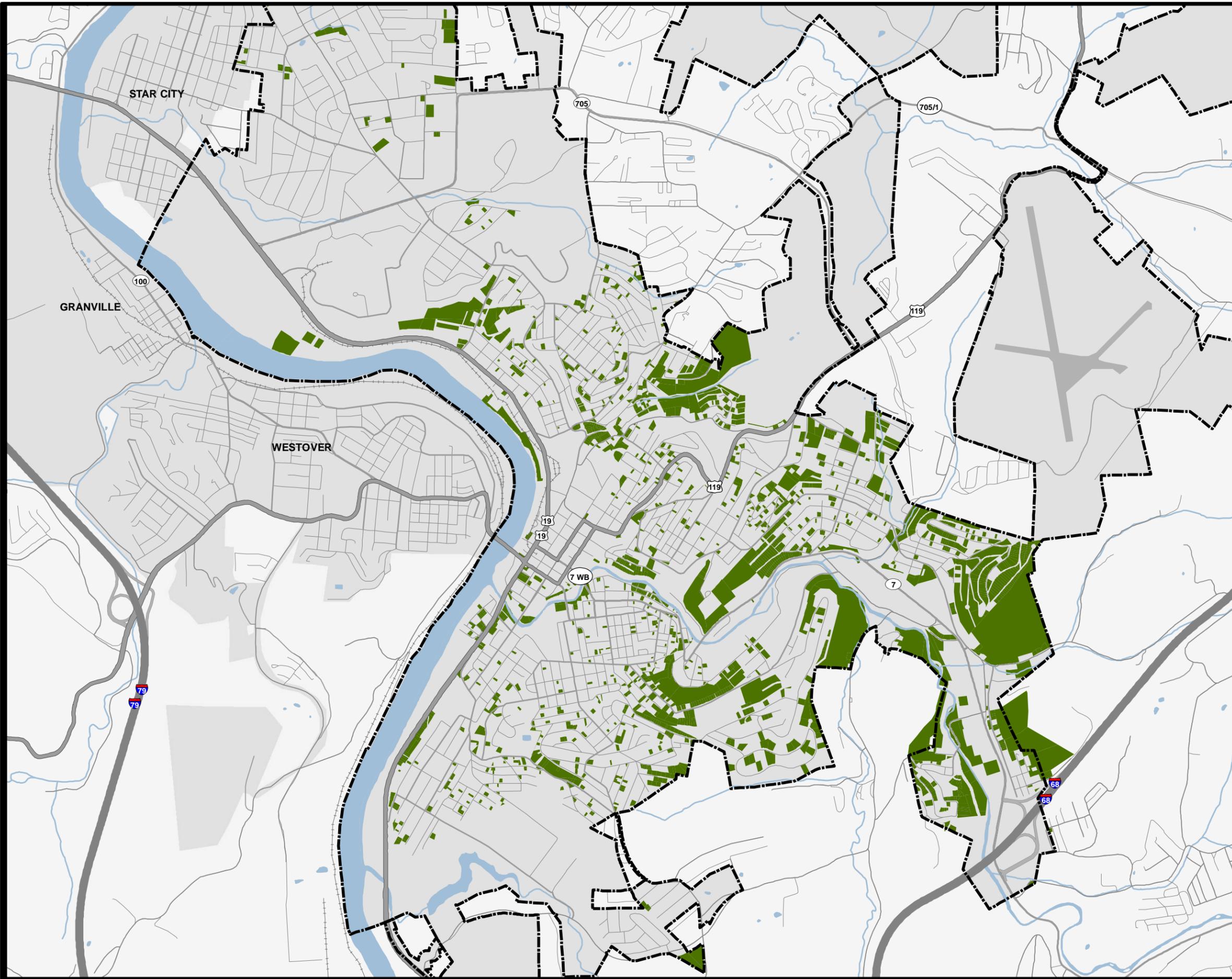


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Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Revised : 4/9/2012



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MAP 5

Vacant Land

City of Morgantown

- Vacant or Underutilized Parcels
- Morgantown Boundary
- Interstate
- US Routes
- State Routes
- Collector
- Local Roads
- Railroads
- Water Bodies
- Streams
- Incorporated Areas

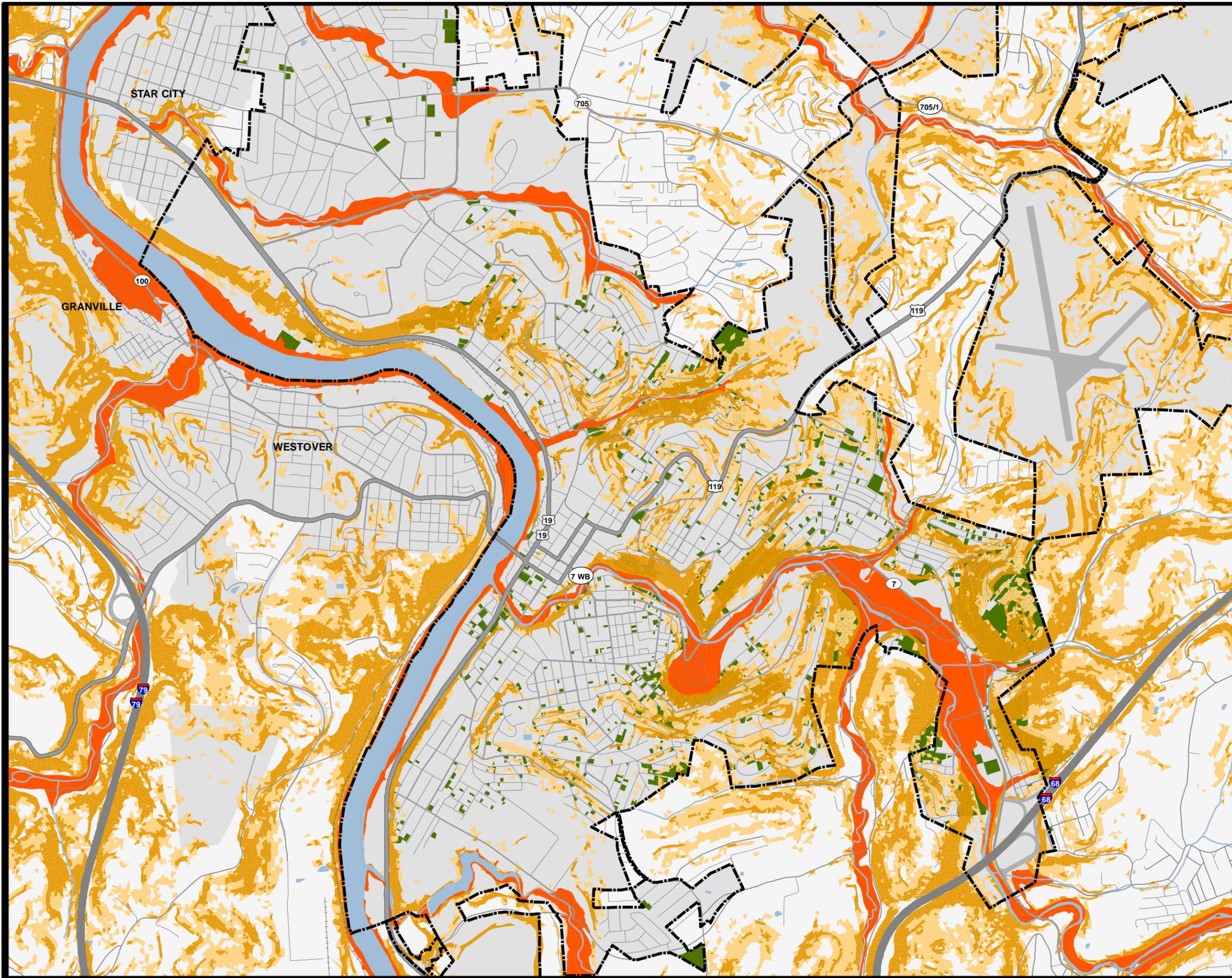
Note: Land uses shown on this map represent an approximation of existing land use within the city. Land use was determined through observation by means of a windshield survey. Uses were not verified with property owners or tax records.

SCALE : 1:25,000

Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Revised : 4/9/2012

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MAP 6 Vacant Land and Land Constraints City of Morgantown

- Vacant or Underutilized Parcels
 - Morgantown Boundary
 - Interstate
 - US Routes
 - State Routes
 - Collector
 - Local Roads
 - Railroads
 - Water Bodies
 - Streams
 - Incorporated Areas
 - 100-year flood zone
- Slope**
- 35-45 degrees (70-100%)
 - 45-90 degrees (100% or greater)

Note: Land uses shown on this map represent an approximation of existing land use within the city. Land use was determined through observation by means of a windshield survey. Uses were not verified with property owners or tax records.

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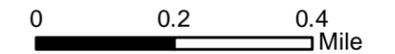
Revised : 4/9/2012

MAP 7 Developments Since 2000

-  Morgantown Boundary
-  Major Developments Since 2000
-  Water Bodies
-  Streams

Note: Development areas were identified with assistance from city staff and by comparing aerial photography from 2002 and 2010. These areas were used to calculate the recent rate of land consumption per capita. Only areas within Morgantown or immediately surrounding were considered. Developments south of I-68 or west of the Monongalia River are not shown.

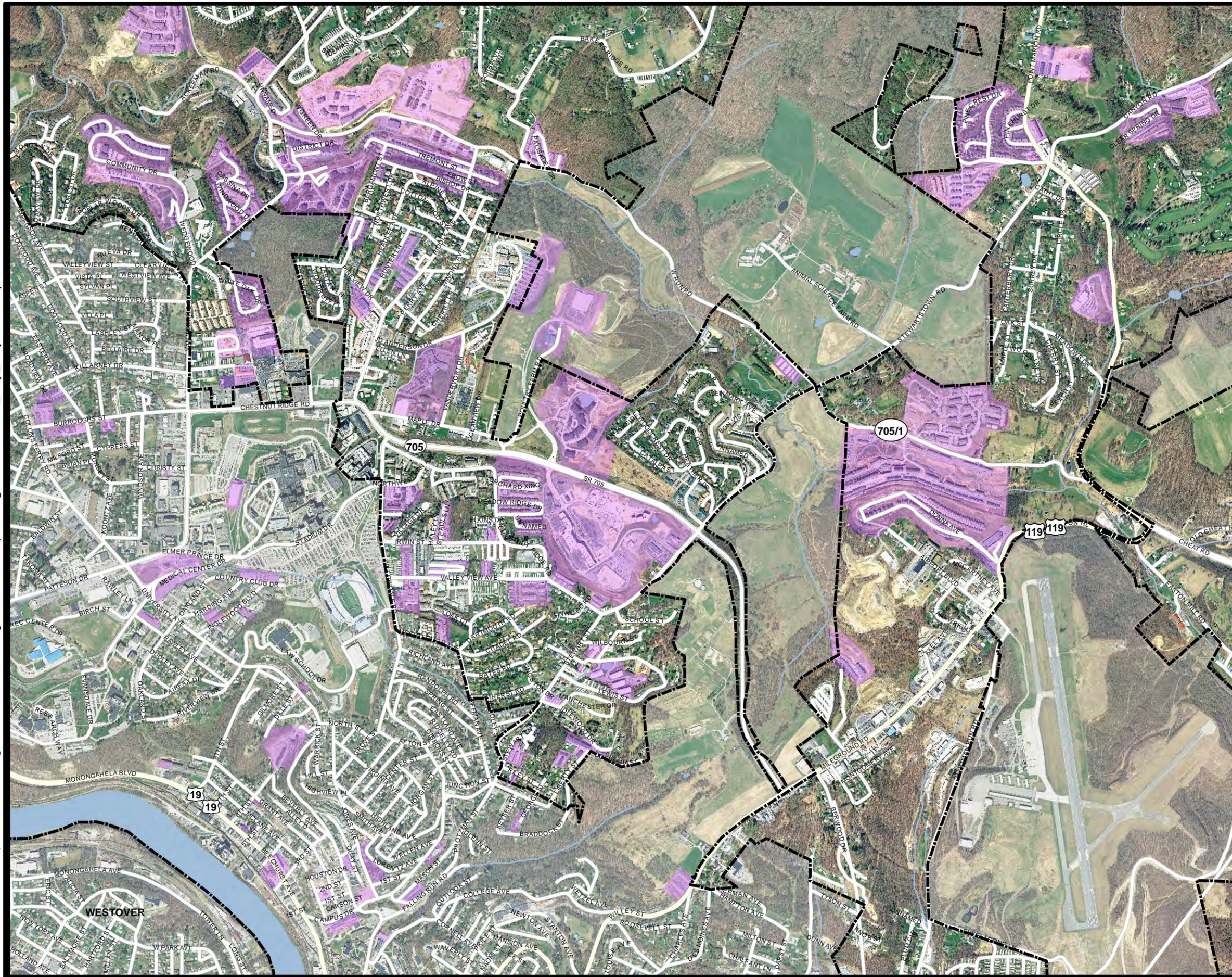
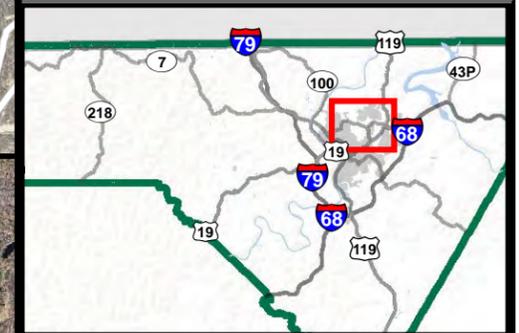
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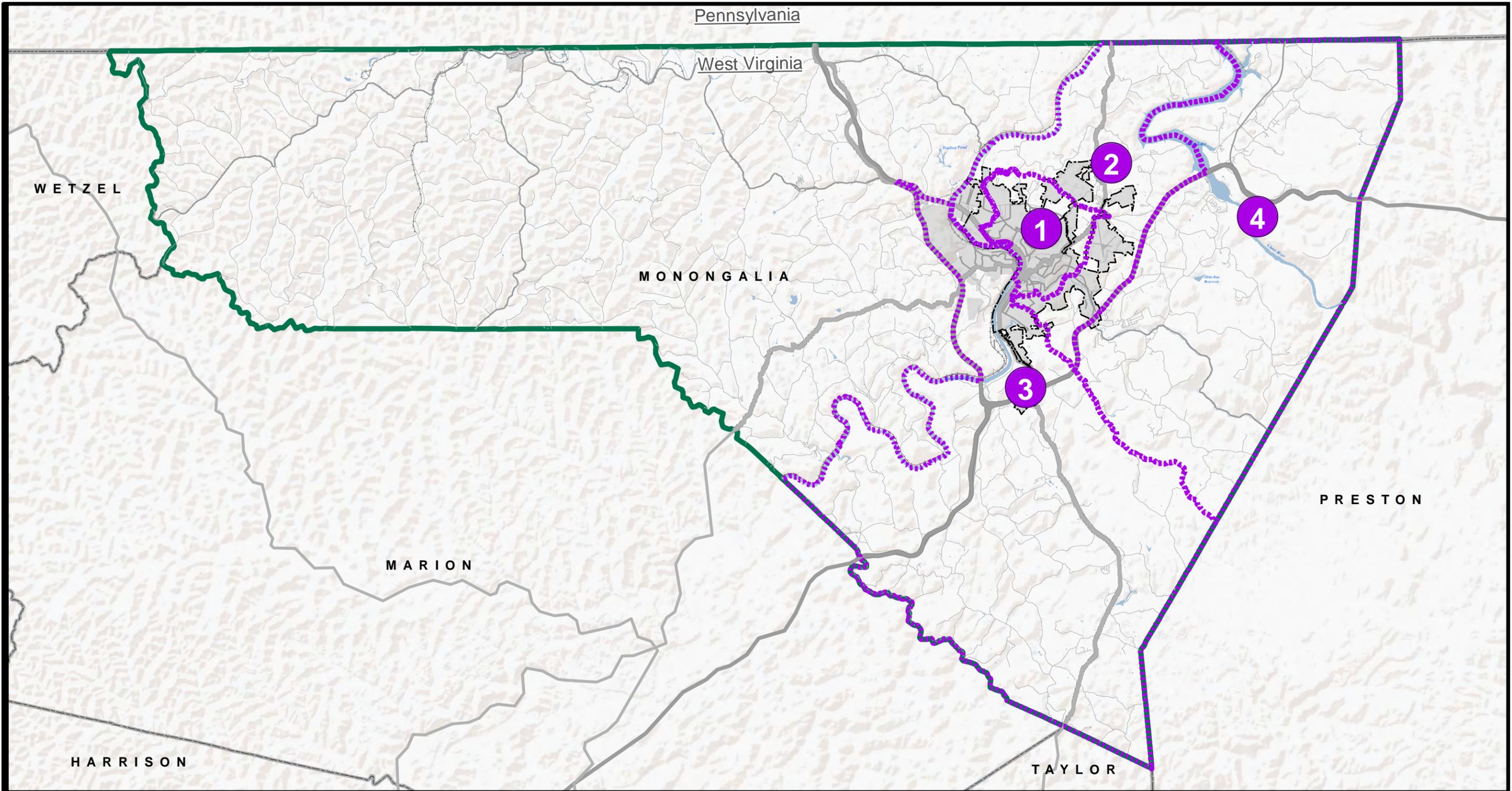
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 Units: Meter

Revised : 3/19/2012

Monongalia County Context



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MAP 8 Growth Measurement Areas 2000-2010

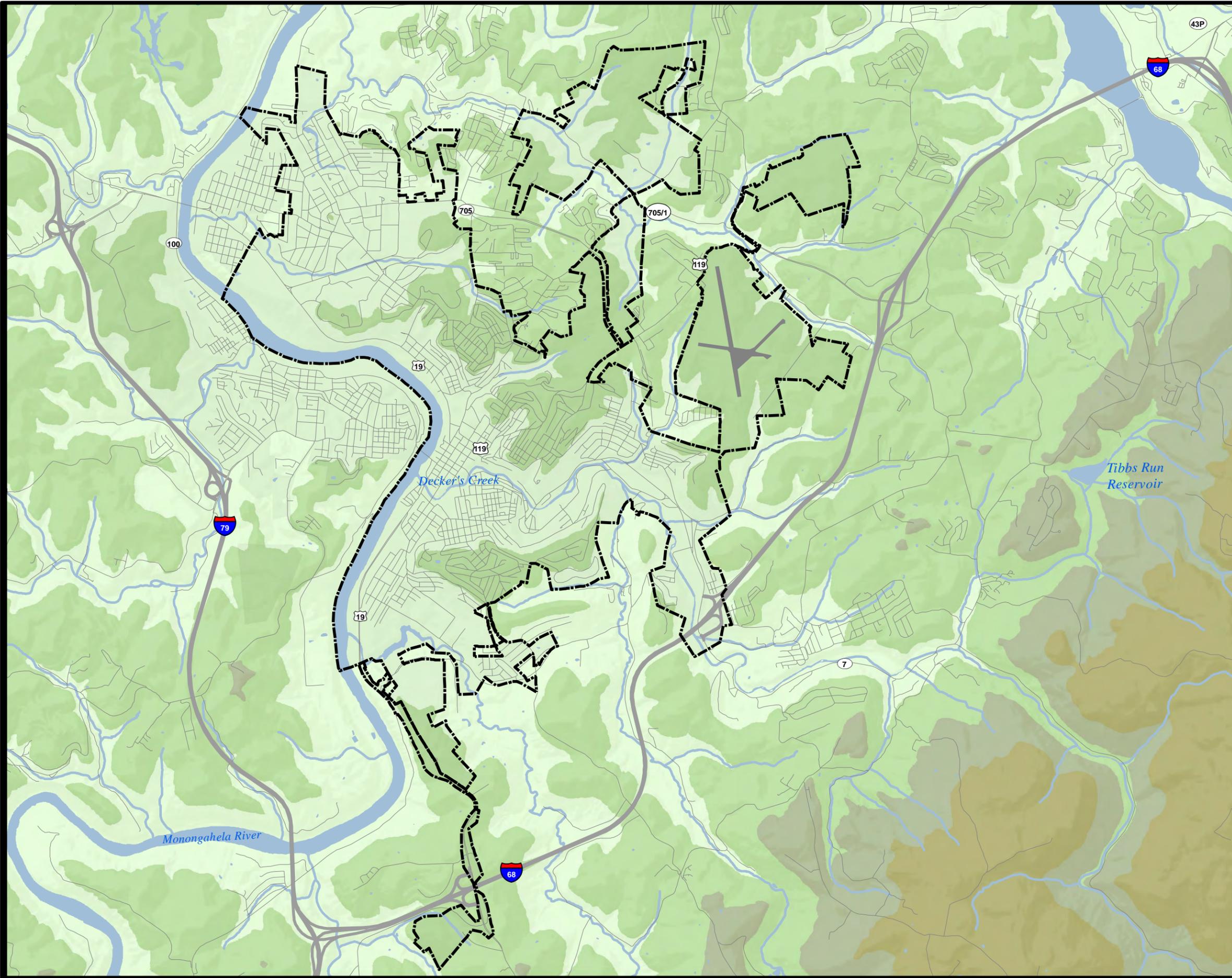
-  Growth Measurement Areas
-  Morgantown Boundary
-  Monongalia County Boundary
-  Interstate
-  US Routes
-  State Routes
-  Collector
-  Local Roads

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Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Revised : 4/10/2012



MAP 9 Environmental Context

- Morgantown Boundary
 - Interstate
 - Roads
 - Streams
 - Monongalia County Boundary
- Window Size: 16,000

Elevation (feet)

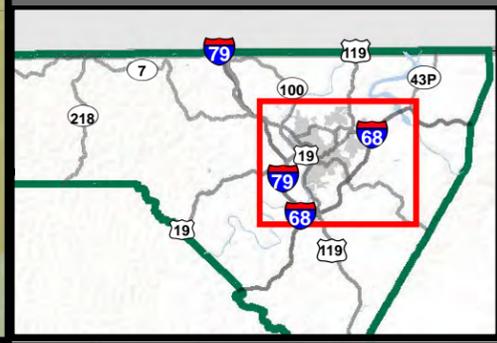
	2266.667 - 2560
	1973.333 - 2266.667
	1680 - 1973.333
	1386.667 - 1680
	1093.333 - 1386.667
	800 - 1093.333

SCALE : 1:45,000

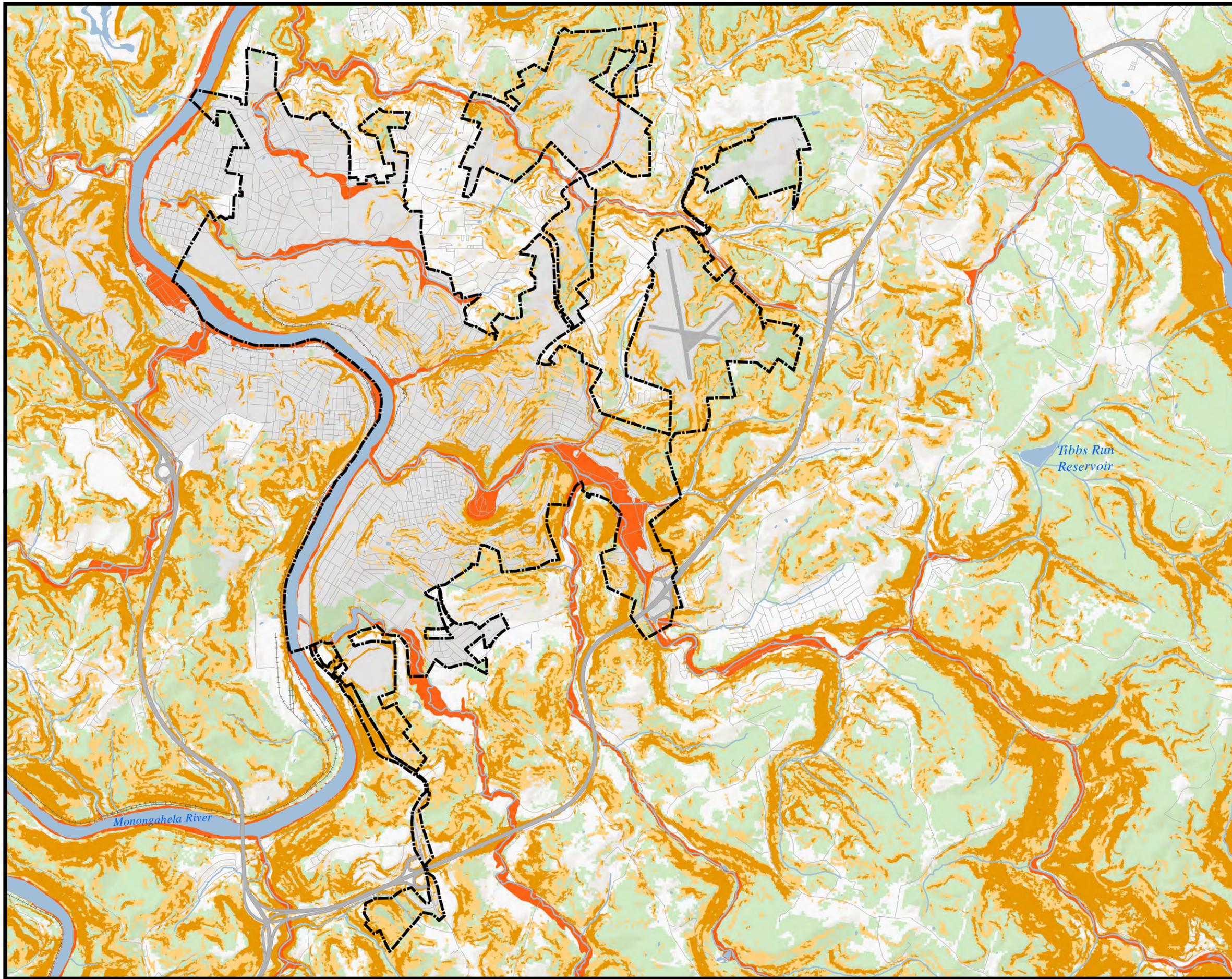
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Monongalia County Context



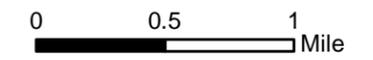
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MAP 10 Environmental Constraints: Floodplain and Forest

-  Morgantown Boundary
-  Interstate
-  Roads
-  Railroads
-  Water Bodies
-  Streams
-  Forested Areas
-  100-year flood zone
- Slope**
-  35-45 degrees (70-100%)
-  45-90 degrees (100% or greater)

SCALE : 1:45,000



Coordinate System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Datum: North American 1983
Units: Meter

Revised : 4/9/2012

