

2016-2040 METROPOLITAN TRANSPORTATION PLAN



**Bowling Green-Warren County
Metropolitan Planning Organization**

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NOVEMBER 2015

FY 2016-2040 Metropolitan Transportation Plan



November 2015

Bowling Green – Warren County
Metropolitan Transportation Organization

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**RESOLUTION OF THE BOWLING GREEN – WARREN COUNTY
METROPOLITAN PLANNING ORGANIZATION POLICY
COMMITTEE APPROVING THE
2016-2040 METROPOLITAN TRANSPORTATION PLAN**

WHEREAS, Section 134, Title 23, U.S.C. requires a continuing, comprehensive transportation planning process be carried out cooperatively in areas of more than 50,000 population; and

WHEREAS, Section 134, Title 23, U.S.C. further requires that the urban transportation planning process shall include the development of a Metropolitan Transportation Plan, a fiscally constrained plan identifying transportation facilities that function within the MPO area as well as addressing transportation improvement projects and other relevant factors over a horizon of at least 20 years; and

WHEREAS, the 2016-2040 Metropolitan Transportation Plan was developed by the Bowling Green-Warren County Metropolitan Planning Organization (MPO) and reviewed by the Kentucky Transportation Cabinet and appropriate federal, state and local agencies; and

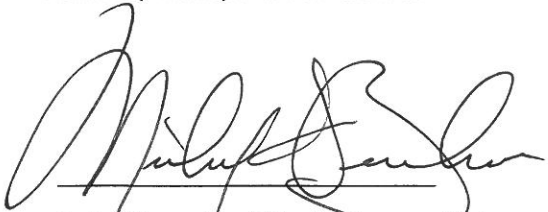
WHEREAS, the transportation planning process is being carried on in conformance with all federal requirements and has been so certified; and

WHEREAS, the Bowling Green-Warren County urbanized area has been found to be in attainment of the National Air Quality Standards; and

WHEREAS, the Policy Committee is the official decision-making body for the Metropolitan Planning Organization for the Bowling Green-Warren County Metropolitan Planning Organization, who is responsible for developing the Metropolitan Transportation Plan; and

WHEREAS, the Technical Advisory Committee of the MPO has endorsed and recommended the Metropolitan Transportation Plan, FY 2016-2040, to the Policy Committee; and

THEREFORE, BE IT RESOLVED, that the MPO Policy Committee at their public meeting of November 9, 2015 approves the *2016-2040 Metropolitan Transportation Plan* for the Bowling Green-Warren County Urban Area and submits the 2016-2040 Metropolitan Transportation Plan to the Kentucky Transportation Cabinet.



Judge/Executive Mike Buchanan, Chairman
MPO Policy Committee

11-9-15

Date



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CHAPTER 1

INTRODUCTION: THE PLANNING FRAMEWORK

INTRODUCTION

A safe and efficient transportation system for the movement of people and goods is essential to support a vibrant and vigorous community. The purpose of this plan is to identify the existing and proposed transportation facilities and services that are necessary to meet the transportation needs of Bowling Green and Warren County by the year 2040. The recommendations for transportation projects have been shaped by key community issues, transportation goals and initiatives, future land use developments, population trends, and employment patterns. Coordination with public agencies along with input from the public and planning participants have influenced the direction of this plan. Project recommendations have been developed through a prioritizing process, directed by the State of Kentucky, based on need and availability of funds.

A. DESCRIPTION OF THE STUDY AREA

The Bowling Green-Warren County Metropolitan Planning Organization (MPO) was officially established in 2003. The City of Bowling Green and Warren County are situated on the Barren River in south central Kentucky, approximately 114 miles south of Louisville, Kentucky and approximately 60 miles north of Nashville, Tennessee (see **Figure 1.1**). The MPO planning area encompasses all of Warren County including the cities of Bowling Green, Plum Springs, Oakland, Smiths Grove and Woodburn, and contains approximately 550 square miles (352,000 acres). The region has a rich history, strong community character, a major university, thriving healthcare facilities, and a balanced economic base. As a result, population growth and employment expansion in the area is expected to continue as it has for several decades.

Bowling Green-Warren County serves as a regional hub providing job opportunities, retail and commercial services, medical services, entertainment, and higher education.

The principal transportation elements within Bowling Green-Warren County include:

- I-65, William H. Natcher, and Louis B. Nunn Parkway corridors,
- State and local roadways,
- Two railway systems,
- Bowling Green-Warren County Regional Airport,
- Two transit systems: GO bg Transit and Western Kentucky University,
- Freight movement, and
- Pedestrian, bicycle, and greenway systems consisting almost exclusively of sidewalks with a few trail systems and bikeways.

B. METROPOLITAN PLANNING ORGANIZATION (MPO)

The Federal Surface Transportation Assistance Act of 1973 required the formation of a Metropolitan Planning Organization (MPO) for any urbanized area with a population greater than 50,000. MPOs were created in order to ensure that existing and future expenditures for transportation projects and programs are based on a comprehensive, cooperative, and continuing (3C) planning process. Federal funding for transportation projects and programs are channeled through this planning process.

On June 3, 2003, the Governor of Kentucky designated the Bowling Green-Warren County MPO. Its boundary includes the Bowling Green urban area as well as the balance of Warren County. The MPO is the transportation policy-making organization for Bowling Green and Warren County.

The Technical Advisory Committee is made up of representatives from organizations that have a direct involvement in the planning or operation of transportation facilities throughout Warren County. This committee's purpose is to advise the MPO on technical issues affecting the transportation system of Warren County. The Technical Advisory Committee makes recommendations to the Policy Committee.

The Policy Committee is the governing body responsible for directing the transportation planning process for the MPO area. This group reviews the transportation plans and programs, and annually endorses a course of action for implementing these plans. The Policy Committee (PC) consists of three voting members including the Mayor of Bowling Green, Warren County Judge/Executive and the Secretary of the Kentucky Transportation Cabinet, as well as two non-voting, ex-officio members which include the Division Administrator for the Federal Highway Administration and the Regional Administrator for the Federal Transit Administration. The MPO Policy Committee has one standing subcommittee that is used throughout the metropolitan transportation planning process.

The City-County Planning Commission of Warren County provides staff services to the Bowling Green-Warren County MPO. A listing of current members of the MPO Policy and Technical Advisory Committees is included in **Appendix A**.

Air Quality

As of July 1, 2015, the Bowling Green MPO has no EPA designated air quality conformity issues. Warren County and surrounding counties are in-attainment for the 2008 Ozone Standard as well as the 1997 and 2012 PM_{2.5} standards.

While Edmonson County was designated as maintenance for the 1-hour ozone standard, it is currently classified as in-attainment. The 1-hour ozone standard was officially revoked in June 2005; areas were reclassified as attainment.

The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of at-risk populations such as people with pre-existing heart or lung disease (such as asthmatics), children, and older adults. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. The Clean Air Act requires periodic review of the science upon which the standards are based and the standards themselves (<http://www.epa.gov/ttn/naaqs/>).

In November 2014, EPA recommended strengthening the National Ambient Air Quality Standards (NAAQS) for ground-level ozone, based on extensive scientific evidence about ozone's effects. EPA proposes to lower the standard from the current value of 0.075 ppm to a value within the range of 0.060 ppm to 0.070 ppm.

Areas will have two years after official designations are made to show conformity. It is also proposed that the designations be based on data collected during the three-year period 2014 - 2016. Based on 2012 - 2014 data for the Bowling Green area (the most current three-year period

for which data is available), if the standard is set at 0.070 ppm, the area would have no air quality conformity issues. If the standard is set at 0.065 ppm, then Warren and Edmonson Counties may be designated as nonattainment. If the standard is set at 0.060 ppm, then Warren, Edmonson, and Simpson Counties may be designated as nonattainment.

C. SCOPE OF THE PLAN

To ensure continuity and to account for changes over time, the Metropolitan Transportation Plan must be reviewed and updated at least every five years. The 2040 Metropolitan Transportation Plan is a multi-modal plan with a 25-year horizon, 2016 – 2040, that addresses:

- Current and forecasted land uses,
- Projected socioeconomic trends,
- Linkages between transportation planning and land use,
- Projected transportation demand by persons and goods,
- Identification of needed projects which will maintain and preserve the existing transportation system,
- Recommendations for improving roads (differentiating between roads eligible for federal funding and roads for which funding is primarily a municipal or county responsibility),
- Recommendations for improving the area's public transportation systems,
- Recommendations for improving bicycle and pedestrian travel,
- Recommendations for improving system operation (through operational improvements that include intelligent transportation system (ITS) technologies)
- A financial analysis that prioritizes transportation improvements based on projected revenues.

D. CONTEXT AND ISSUES

Federal Context and the Financially Constrained System

As a federally designated MPO, the Bowling Green-Warren County MPO must coordinate transportation planning for the Bowling Green and Warren County urban area. Through an agreement between the Kentucky Transportation Cabinet (KYTC) and the Bowling Green/Warren County MPO, the MPO provides transportation planning for all of Warren County.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in conjunction with the Moving Ahead for Progress in the 21st Century Act (MAP-21) and other federal regulations provide the primary authoritative direction for the development of the Metropolitan Transportation Plan (MTP). Under this direction, the MTP is developed with financial constraint, spanning a minimum 25 year time frame, and with meaningful public involvement. The system of projects and programs in this Long Range Transportation Plan is limited to current funding sources, and new funding sources that can reasonably be expected to become available during the 25-year planning period.

A companion document to this MTP is the Transportation Improvement Program (TIP). The TIP is a program that describes the schedule for obligating federal funds to state and local projects. The TIP includes funding information for all modes of transportation and is the culmination of the planning process and Metropolitan Transportation Plan. For the Bowling Green-Warren County MPO, the TIP is a six-year project list that is updated every four years and is amended or modified on an as-needed basis to maintain current project information.

Other federal transportation planning requirements that affect the MPO transportation planning process include the Endangered Species Act (ESA), a federal law that mandates protection and recovery for species in immediate and near-immediate danger of extinction. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects that their federally funded activities and programs have on significant historic properties. The Americans with Disabilities Act (ADA) requires that transportation plans address equal access and opportunity for disabled persons. Updated ADA legislation includes provisions that focus on the transportation needs of the elderly, disabled and other special needs populations.

Livability Principles

On June 16, 2009, the U.S. Department of Transportation, U.S. Department of Housing and Urban Development, and the U.S. Environmental Protection Agency inaugurated six “Livability Principles” set forth by an Interagency Partnership for Sustainable Communities. The principles were adopted to help the agencies guide the allocation of funds to communities that manage their financial and physical resources in a manner that creates a dynamic environment that is efficient in its function, livable for its residents, enduring in its viability and results in a sense of well-being of its citizens. The principles are:

1. *Provide more transportation choices.*

Develop safe, reliable and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions and promote public health.

2. *Promote equitable, affordable housing.*

Expand location-and-efficient housing for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation.

3. *Enhance economic competitiveness.*

Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers as well as expanded business access to markets.

4. *Support existing communities.*

Target federal funding toward existing communities – through such strategies as transit-oriented, mixed-use development and land recycling – to increase community revitalization, improve the efficiency of public works investments, and safeguard rural landscapes.

5. *Coordinate and leverage federal policies and investment.*

Align federal policies and funding to remove barriers to collaboration, leverage funding and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

6. *Value communities and neighborhoods.*

Support the growth of healthy, safe and walkable neighborhoods that encourage community involvement and enhance the natural characteristics.

Livability in transportation is defined as tying the quality, location, and modal composition of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing road safety and capacity issues through better planning and design, maximizing and expanding new technologies such as intelligent transportation systems (ITS) and using Travel Demand Management approaches to

system planning and operations. It also includes developing high quality public transportation to foster economic development, and community design that offers residents and workers the full range of transportation choices. And, it involves fully connecting the modal pieces-bikeways, pedestrian facilities, transit services, and roadways-into a truly intermodal, interconnected system.

The Bowling Green-Warren County MPO acknowledges the concepts of livability and sustainability incorporated in the principles and their need in the decision making of the Policy Committee. The concepts have continually been incorporated in our goals and objectives, which guides the MPO's policy and decision making. Although the published principles are new, they reflect Bowling

Green-Warren County's leadership and vision of a community for the future and have instinctively been incorporated in its growth and development.

State Context and the Priority System

In carrying out the requirements of federal legislation, the KYTC requires MPOs to implement an inter-governmental coordination process that involves local, state, and federal agencies. In a MPO with a population under 200,000, this inter-governmental coordination is carried out by requiring that the Metropolitan Transportation Plan and the TIP be coordinated with the Statewide Transportation Plan (STP) and the Statewide Transportation Improvement Program (STIP). The small MPOs do not have discretionary funds specifically designated to the local MPO.

E. TRANSPORTATION PLANNING ISSUES

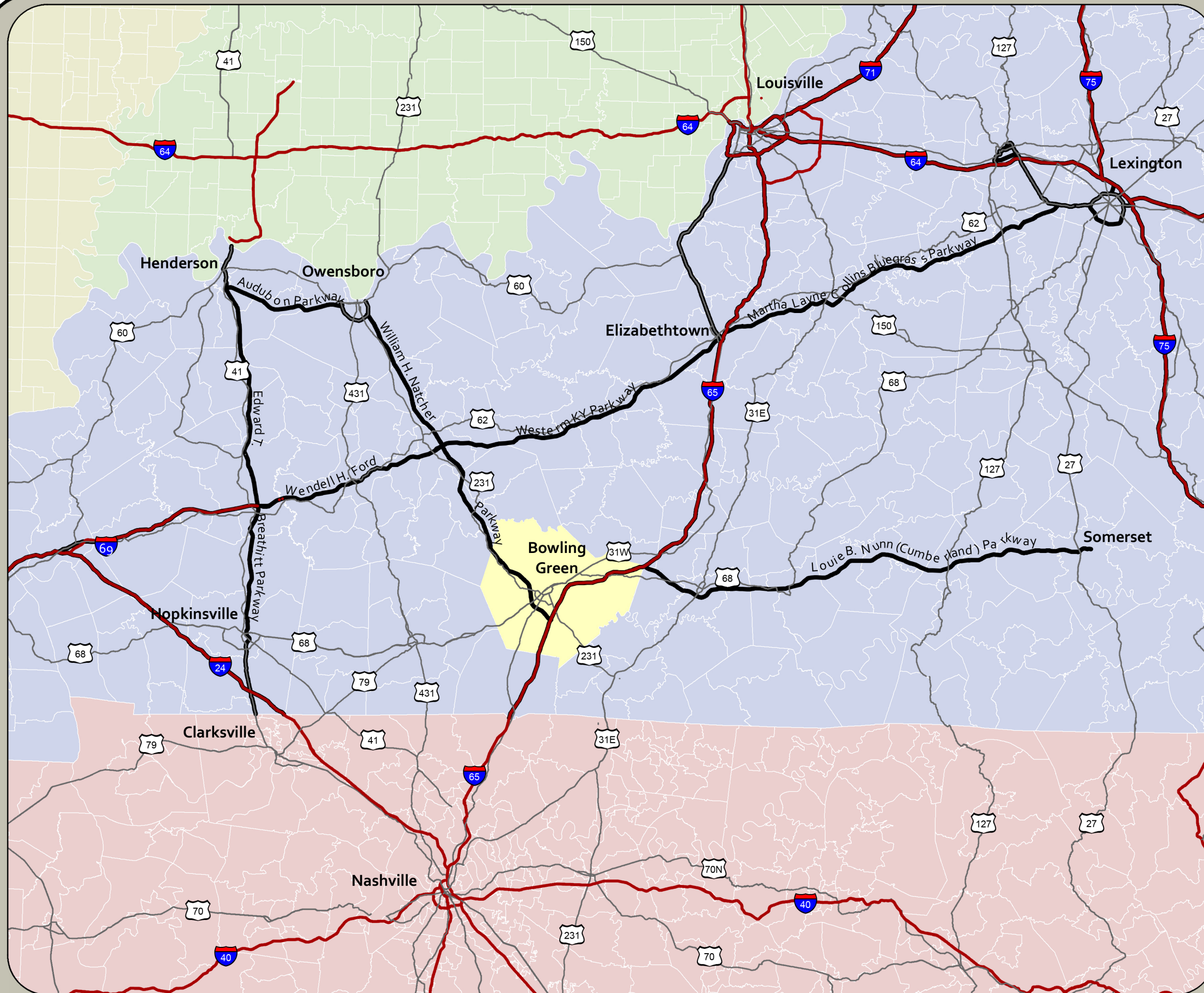
As a growing community, the Bowling Green and Warren County urban area faces numerous land use, transportation and environmental issues. Through the Metropolitan Transportation Plan's community involvement process, other issues were brought forth for consideration in the planning process. Among these issues are¹:

- Warren County has geographic barriers that limit accessibility to all of Warren County and its cities. These barriers are expensive to overcome when developing a cohesive regional highway system.
- Congestion and travel delays are significant issues within the Bowling Green and Warren County planning area. Peak hour and weekend traffic congestion exists on several highways.
- Better connectivity throughout the transportation system is needed to promote intermodal transfers. In many areas, connectivity of the highway system with the transit and pedestrian systems are lacking.
- Warren County needs a comprehensive, balanced approach to land use, transportation and environmental objectives which will maintain and enhance the area's quality of life, minimize the effects of sprawl, and promote the economic competitiveness of the area.
- Gaps in the existing pedestrian and bicycle facilities cause unsafe conditions for walkers and bikers and make intermodal access difficult.
- Much of the urban area lacks access to public transit. Current transit options need to be enhanced through the expansion of the existing public system, the integration of GO bg and Western Kentucky University transit systems, and the enhancement of transit system facilities and rider amenities.

¹ Issues are not listed by importance or priority.

- An enhanced regional transportation network is needed. Extending access and appropriate improvements to I-65 and the Natcher Parkway will promote future development of an I-66 corridor.
- Economic development and freight movement in the region needs to be appropriately accommodated by improving access to I-65 from industrial areas, upgrading turning radii, and adding turn lanes at key intersections within the urban area.
- The preservation of traffic flow capacity and safety along existing and future transportation corridors within the MPO is vitally important. Uncontrolled access to some state and local highways continues to diminish the capacity and safety of these roadways.
- Adequately addressed safety issues within residential neighborhoods, improvement of rail/highway crossings and improvement of the safety of rural county roads are also needed.

Figure 1.1
**Bowling Green-
Warren County
Regional Access**



Road Type

- Interstates
- U.S. Routes
- Kentucky Parkways
- Railroads
- Warren County, KY
- Kentucky Counties
- Tennessee Counties
- Indiana Counties
- Illinois Counties



CHAPTER 2

TRANSPORTATION GOALS AND OBJECTIVES

OVERALL GOAL

To plan for an integrated, multimodal transportation system that is safe, environmentally sound and aesthetically pleasing within a financially responsible manner which addresses existing and future needs for transporting people and goods throughout Bowling Green and Warren County.

More specifically, the goals of the Bowling Green-Warren County Metropolitan Transportation Plan are:

GOAL 1 - MOBILITY

Promote a transportation system that will provide the highest possible level of mobility to all potential users.

OBJECTIVE 1.1

Preserve the mobility and capacity of the existing transportation system.

OBJECTIVE 1.2

Improve and expand the capacity of the transportation system to accommodate the future increase of traffic.

GOAL 2 - ACCESS

Support a balanced transportation system that provides access to all areas of Bowling Green and Warren County and includes convenient and reliable transportation options which are available to both residents and visitors.

OBJECTIVE 2.1

Support maintenance of the existing highway system and the improvements necessary to preserve the function of that system for Bowling Green and Warren County.

OBJECTIVE 2.2

Support the development and maintenance of community (public and semi-public) transit systems throughout Bowling Green and Warren County.

OBJECTIVE 2.3

Support maintenance and improvement of the air transportation system for Bowling Green and Warren County.

OBJECTIVE 2.4

Support maintenance and improvement of the railroad system serving Bowling Green and Warren County.

OBJECTIVE 2.5

Support maintenance and improvement of the pedestrian and bicycle systems throughout Bowling Green and Warren County as recommended in the Greenways Master Plan.

OBJECTIVE 2.6

Support maintenance and development of the water resources in Bowling Green and Warren County for transportation purposes.

GOAL 3 - CONNECTION

Work to enhance the integration and connectivity of the transportation system, across and between modes of travel for people and goods.

OBJECTIVE 3.1

Support the interconnection of the various modes of travel available within Bowling Green and Warren County.

GOAL 4 - SAFETY

Preserve the existing transportation system and improve its overall safety.

OBJECTIVE 4.1

Reduce the number of injuries and fatalities along the transportation system within Bowling Green and Warren County.

GOAL 5 - SECURITY

Protect the existing transportation system and improve its overall ability to function during times of crisis

OBJECTIVE 5.1

Promote the security of the transportation system within Bowling Green and Warren County.

GOAL 6 - ECONOMIC STEWARDSHIP

Work to develop an Intermodal system that supports and strengthens the economic vitality and competitiveness of Bowling Green and Warren County, and which supports economic development initiatives.

OBJECTIVE 6.1

Support the maintenance and enhancement of the movement of freight to markets between and within the community, the region, and the Commonwealth, country, and world.

OBJECTIVE 6.2

Support an intermodal system that promotes the movement of people to jobs.

OBJECTIVE 6.3

Support the maintenance and development of a transportation system that promotes maximum tourism access and enjoyment.

OBJECTIVE 6.4

Support the development of the Kentucky Transpark.

GOAL 7 - ENVIRONMENTAL STEWARDSHIP

Promote a transportation system that provides improvements in the quality of life within Bowling Green and Warren County by protecting or enhancing the natural and human environmental resources of the community.

OBJECTIVE 7.1

Investigate the environmental impact of transportation system changes as to how they may affect the environment and determine how best to avoid, minimize, or mitigate that impact on the environment. (Examples of environmental issues that should be investigated would include the landscape/habitat, water, air, or historic/archeological resources within the scope of the transportation system proposed to be changed.)

OBJECTIVE 7.2

Ensure that consideration is given to how the cultural resources or character of a community will be impacted by a proposed change in the transportation system and how the adverse impact of the system change can be avoided, minimized or mitigated.

CHAPTER 3

SOCIOECONOMIC CONDITIONS AND ENVIRONMENTAL ISSUES

INTRODUCTION

The political boundary of Warren County delineates the Bowling Green-Warren County MPO Planning Area and consists of a nearly 550-square-mile area which includes the cities of Bowling Green, Oakland, Plums Springs, Smiths Grove, and Woodburn. Understanding the existing conditions and future trends of the socioeconomic characteristics, land use, and environmental issues in Warren County is essential to properly develop a community-based transportation plan.

A. SOCIOECONOMIC CHARACTERISTICS

The commuting pattern of the Bowling Green-Warren County MPO area is affected by worker characteristics, the time and convenience of various modes of commuting, and the supply and location of jobs, housing, and community services.

PAST POPULATION TRENDS

As illustrated by **Table 3.1-A**, The Bowling Green-Warren County MPO area has experienced moderate but steady population growth in the past four decades. During the forty-three-year period, Warren County experienced a 106% increase in population, with the majority of this increase occurring in the unincorporated area of the county. With the most recent estimates, the split of the urban/rural composition is approaching 50/50.

The largest growth in the five cities occurred in the city of Bowling Green with a 25,235 or 70% increase. The remaining four cities had a total population of 1,782, which represents a 346 or 24% increase from the 1970 total of 1,436.

Table 3.1-B illustrates the percentage of population by incorporated and unincorporated areas.

TABLE 3.1-A POPULATION BY DECADE							
JURISDICTION	1970	1980	1990	2000	2010	2013	PERCENTAGE CHANGE 1970- 2013
Warren County	57,432	71,828	76,673	95,522	113,792	118,370	106%
Unincorporated area	19,743	29,624	34,423	44,412	53,978	55,100	179%
Incorporated area	37,689	42,204	42,250	51,110	59,814	63,270	68%
Bowling Green	36,253	40,450	40,641	49,296	58,067	61,488	70%
Oakland	144	264	202	260	225	227	58%
Plum Springs	185	393	361	447	453	473	156%
Smiths Grove	756	767	703	784	714	717	-5%
Woodburn	351	330	343	323	355	365	4%

Source: Kentucky Data Center, US Census Years 1970-2010 and US Census Bureau American Community Survey 2013

TABLE 3.1-B PERCENTAGE OF POPULATION BY INCORPORATED AND UNINCORPORATED AREA						
JURISDICTION	1970	1980	1990	2000	2010	2013
Unincorporated area	34%	41%	45%	46%	47%	47%
Incorporated area	66%	59%	55%	54%	53%	53%

POPULATION FORECAST

During the planning period Warren County is projected to experience an increase of 57,844 residents, or a growth of 46% by 2040, as presented in **Table 3.2-A**. By 2025, the majority of Warren County's population is projected to reside in incorporated areas of the county. By 2040, the city of Bowling Green is expected to experience an increase of 29,517, or 46% in residents. This is in comparison to an increase of 27,438, or 46% in the unincorporated areas for the same period. The annual population growth rates for Warren County and its cities are projected to fluctuate between 1.64% and 1.86% until 2025 and then drop to 1.53% in the late 2020s. Projections of population growth and components of change can be found in **Table 3.3**.

TABLE 3.2-A PROJECTED POPULATION GROWTH 2015-2040						
JURISDICTION	2015	2020	2025	2030	2035	2040
Warren County	125,085	137,250	148,966	160,772	172,025	182,929
Unincorporated area	59,335	65,107	70,662	76,263	81,601	86,773
Incorporated area	65,750	72,143	78,304	84,509	90,424	96,156
Bowling Green	63,830	70,037	76,016	82,040	87,783	93,347
Oakland	247	271	295	318	340	362
Plum Springs	498	546	593	640	685	728
Smiths Grove	785	861	935	1,009	1,079	1,148
Woodburn	390	428	465	502	537	571

Source: Kentucky Data Center, Estimates and Projections Released December 1, 2011

TABLE 3.2-B PERCENTAGE OF POPULATION BY INCORPORATED AND UNINCORPORATED AREA						
JURISDICTION	2015	2020	2025	2030	2035	2040
Unincorporated area	47%	47%	47%	47%	47%	47%
Incorporated area	53%	53%	53%	53%	53%	53%

TABLE 3.3 PROJECTIONS OF POPULATION GROWTH AND COMPONENTS OF CHANGE					
WARREN	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Population growth	12,165	11,716	11,806	11,253	10,904
Percent change	9.73%	8.54%	7.93%	7.00%	6.34%
Births	8,119	8,763	9,526	10,945	11,555
Deaths	4,999	5,932	7,062	8,281	9,403
Net migration	9,045	9,345	9,821	9,761	9,860

Source: Kentucky Data Center, Census 2010 Data

PAST HOUSEHOLD TRENDS

As presented in **Table 3.4-A**, during the past forty-three years the number of households in Warren County have increased by 29,713, or 205%. The majority of this growth occurred in the unincorporated area with an increase of 16,979 units, or a 480% increase. This is in comparison to the incorporated area increasing by 12,734 units, or 116%, the majority of which occurred in Bowling Green. **Table 3.4-B** illustrates the percentage of households by incorporated and unincorporated areas. **Table 3.4-A** shows that in 1970 the average household in Warren County contained 3.95 people. Since then, households have decreased in size to 2.5 people in 2013. Judging by **Table 3.4-A**, Bowling Green has followed a similar trend to that of Warren County since 1970, but has had smaller-sized households than those of the county. In 1970, Bowling Green's household size was 3.3 and in 2013 it was 2.3.

TABLE 3.4-A NUMBER OF HOUSEHOLDS AND PERSONS PER HOUSEHOLD												
JURISDICTION	HOUSEHOLDS						PERSONS PER HOUSEHOLD					
	1970	1980	1990	2000	2010	2013	1970	1980	1990	2000	2010	2013
Warren County	14,527	24,833	28,819	35,365	43,674	44,240	3.95	2.8	2.5	2.5	2.5	2.5
Unincorporated area	3,539	9,893	12,243	15,403	20,260	20,518	5.6	3.0	2.8	2.5	2.5	2.6
Incorporated area	10,988	14,940	16,576	19,962	23,414	23,722	3.4	2.8	2.7	2.5	2.5	2.3
Bowling Green	10,988	14,313	15,973	19,277	22,735	23,013	3.3	2.8	2.3	2.3	2.3	2.3
Oakland	NA	96	81	102	87	58	NA	2.8	2.5	2.6	2.6	2.8
Plum Springs	NA	131	130	177	183	204	NA	3.0	2.8	2.5	2.5	2.6
Smiths Grove	NA	297	287	298	289	284	NA	2.6	2.5	2.6	2.5	2.4
Woodburn	NA	103	105	108	120	163	NA	3.2	2.6	2.6	2.5	2.1

Source: Kentucky Data Center, US Census Years 1970-2010 and US Census Bureau American Community Survey 2013

TABLE 3.4-B PERCENTAGE OF HOUSEHOLDS BY INCORPORATED AND UNINCORPORATED AREA						
JURISDICTION	1970	1980	1990	2000	2010	2013
Unincorporated area	24%	40%	42%	44%	46%	46%
Incorporated area	76%	60%	58%	56%	54%	54%

Source: Kentucky Data Center, Census 2010 Data and US Census Bureau American Community Survey 2013

HOUSEHOLD FORECAST

The number of households in the Bowling Green-Warren County MPO area is projected to continue to grow throughout the planning period of the 2040 Metropolitan Transportation Plan (MTP) and is illustrated in **Table 3.5**. The total number of households in Warren County is projected to increase by 25,905 over the twenty-five-year period.

TABLE 3.5 PROJECTED NUMBER OF HOUSEHOLDS 2015-2040						
JURISDICTION	HOUSEHOLDS					
	2015	2020	2025	2030	2035	2040
Warren County	48,823	54,299	59,812	65,099	70,092	74,728

Source: Kentucky Data Center, Census 2010 Data

EMPLOYMENT AND LABOR FORCE ANALYSIS AND FORECAST

Employment has a major effect on transportation systems. The more employment that is present within the area, the more an area will generate peak hour travel. **Table 3.6** shows the estimated change in the amount of non-retail (low trip rate jobs, such as manufacturing, industrial, mining, etc.), service (medium trip rate jobs, such as attorney services, public services, universities, etc.), and retail (high trip rate jobs, such as restaurants, service stations, banks, etc.) between 2020 and 2040. Employment is expected to continue to grow between 2020 and 2040. Over this twenty-year period, total employment is expected to increase by 44,518 workers, or 125%.

TABLE 3.6 BOWLING GREEN-WARREN COUNTY EMPLOYMENT FORECASTS*			
EMPLOYMENT CATEGORY	2020	2030	2040
Non-retail	6,110	9,165	13,747
Service	17,135	25,657	38,486
Retail	12,423	18,635	27,953
TOTAL	35,668	53,457	80,186

Source: Kentucky Transportation Cabinet

*Note: The KTC numbers do not duplicate doctors who might work out of more than one office, nor do the numbers include non-profit businesses.

B. TITLE VI

In 1994, President Bill Clinton issued an Executive Order to address environmental justice in minority and low-income populations. The order focused attention on Title VI of the Civil Rights Act of 1964, which states, “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” The order provided that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” In support of the order, the United States Department of Transportation (DOT) issued an Order on Environmental Justice in 1997, followed by a Federal Highway Administration (FHWA) Order on Environmental Justice in 1998.

Over the years, the US DOT and the FHWA have encouraged a proactive approach to the implementation of Title VI, aimed at preventing discrimination in its programs, policies, and activities. This proactive approach can reduce conflicts and also reinforce compliance with other related requirements, such as the National Environmental Policy Act (NEPA) of 1969, which addresses social and economic impacts, and public involvement in statewide and metropolitan planning and project development. The socioeconomic data related to Title VI can be found in **Table 3.7**.

A critical element in developing the 2040 MTP was the equitable distribution of services, facilities, and resources within the Bowling Green-Warren County MPO planning area. The distribution should not regard income, race, literacy, English proficiency or other socioeconomic factors, in addition to geographic distribution.

IDENTIFICATION OF WHICH POPULATION SEGMENTS WERE RELEVANT GROUPS

The relevant population groups targeted by Title VI guidelines are minority and low-income populations. However, to meet the directions of the Kentucky Transportation Cabinet, the Bowling Green-Warren County MPO will also apply Title VI to the elderly population, people with disabilities, youth (population under 18 years of age), no car households, low income, people with low literacy, and people with limited English proficiency.

ANALYSIS

The total population of the Bowling Green-Warren County MPO urbanized area was 113,792, based on the US Census Bureau American Community Survey 2013. Of the total population in the planning area, 95,614, or 83% are white, while 10,737, or 9% are black or African American. Bowling Green has a black or African American population of 8,977, or 15%. All other races in the planning area represent 7.87% of the total population. The male to female breakdown in the area is nearly 50/50.

TABLE 3.7
TITLE VI-RELATED SOCIOECONOMIC DATA – 2013

	WARREN COUNTY	BOWLING GREEN	KENTUCKY	UNITED STATES
Total Population	115,438	59,618	4,361,333	311,536,594
By Race (Table P7)				
White	95,614	44,390	3,835,013	230,592,579
% White	82.83%	74.46%	87.93%	74.02%
Black or African American	10,737	8,977	341,576	39,167,010
% Black or African American	9.30%	15.06%	7.83%	11.61%
American Indian/Alaska Native	310	72	8,811	2,540,309
% American Indian/Alaska Native	0.27%	0.12%	0.20%	0.82%
Asian	3,191	2,392	51,411	15,231,962
% Asian	2.76%	4.01%	1.18%	4.89%
Native Hawaiian/other Pacific Islander	26	12	2,019	526,347
% Native Hawaiian/other Pacific Islander	0.02%	0.02%	0.05%	0.17%
Some other race	3,356	2,491	41,980	14,746,054
% Some other race	2.91%	4.18%	0.96%	4.73%
Two or more races	2,204	1,284	80,523	8,732,333
% Two or more races	1.91%	2.15%	1.85%	2.80%
Persons of Hispanic or Latino origin	5,462	3,817	136,340	51,786,591
% Persons of Hispanic or Latino origin	4.70%	6.40%	3.13%	16.62%
Total minority population	19,824	15,228	526,320	80,944,015
% minority population	17.17%	25.54%	12.07%	25.98%
By Female (Table P8)				
Total population age 18 years+	89,302	47,424	3,340,703	237,659,116
Total female population age 18 years+	46,287	24,740	1,718,859	122,195,422
% Female age 18 years+	51.83%	52.17%	51.45%	51.42%
Limited English proficiency: Speak English “not well” for population age 18 years+ (Table P19)				
Total population age 18 years+	89,302	47,424	3,340,703	237,659,116
Speak English “not well” age 18 years+	1,557	1,155	27,411	8,503,133
% Speak English “not well” age 18 years+	1.77%	2.49%	0.84%	3.65%
Low literacy: Less than 9th grade education for population age 25 years+ (Table P37)				

Total population age 25 years+	70,414	32,748	2,920,579	206,587,852
Less than 9 th grade education age 25 years+	4,224	2,751	210,282	12,188,680
% Less than 9 th grade education age 25 years+	6.00%	8.40%	7.20%	5.90%
Persons with disabilities for civilian non-institutionalized population age 18 years+ (Table P42)				
Total population age 18 years+	89,302	47,424	3,340,703	237,659,116
Total disabilities age 18 years+	14,580	7,563	661,323	34,196,057
% with disabilities age 18 years+	16.54%	16.32%	20.32%	14.69%
Low income: Less than poverty level in 2012 for population age 18 years+ (Table P87)				
Total population age 18 years+	89,302	47,424	3,340,703	237,659,116
Income in 2012 below poverty level age 18 years+	15,254	12,284	540,374	31,183,374
% income in 2012 below poverty level age 18 years+	17.30%	26.50%	16.60%	13.40%
Occupied housing units with no vehicle				
Total occupied housing units	44,240	23,013	1,694,996	115,610,216
Occupied housing units with no vehicle	2,784	2,377	131,126	10,483,077
% Occupied housing units with no vehicle	6.29%	10.33%	7.74%	9.07%

Source: US Census Bureau American Community Survey 2013

C. LAND USE AND PHYSICAL CONSIDERATIONS

LAND USE TRENDS

Warren County is classified into the following land use categories: agricultural, commercial, industrial, multi-family residential, single family residential, public, public-institutional and vacant land uses. The descriptions for each of these land use classifications are found below:

- **Agricultural:** This category refers to land over five (5) acres being used for agricultural purposes, even if it is not currently in farm production, as well as wooded areas. There may also be a residence on the property.
- **Commercial:** This land use category includes retail/wholesale businesses of various sizes, including but not limited to strip centers, “big box” stores, hotels, restaurants, banks and pharmacies.
- **Industrial:** Industrial land uses include factories and warehouses, but also includes businesses that store things outside like, contractor related services, auto repair shops and

trucking companies. The more intensive industrial businesses may have emitted vibrations, noises, smoke or fumes.

- **Multi-Family Residential:** The multi-family residential land use category represents parcels with structures containing more than one unit, such as duplexes and apartment complexes. It also includes residential structures where more than two unrelated people reside, like a boarding house.
- **Single Family Residential:** This category represents properties under five (5) acres containing a single family residence. This category also includes mobile home parks, since each mobile home is on its own lot within the mobile home park.
- **Public:** Public land uses include public parks, public schools and public buildings.
- **Public-Institutional:** This land use designation is used for churches and private schools as well as civic organizations like VFW posts, masonic lodges and rotary clubs.
- **Vacant:** The vacant category encompasses lots with no development, including vacant lots within subdivisions, less than five (5) acres in size.

The abovementioned land use types impact transportation in Bowling Green and Warren County in various ways. Areas of residential land use, both single and multi-family, generate travel by producing trips to work, school, shopping areas, and recreational destinations. Commercial, industrial, public and public-institutional uses generate travel by attracting trips. The travel that occurs between trip generators takes place on one of the transportation modes available to the traveler. In addition to land use factors, accurate demographic data and projections of future trends are imperative to understanding current conditions and forecasting travel in the future.

Over the past 60 years, employment centers, shopping areas, public services and residential neighborhoods have dispersed from Bowling Green's urban center across much of the county, creating greater separation between land uses and various destinations. This separation causes trips to be longer, which in turn increases vehicle miles of travel (VMT) and congestion.

The area has also become regionalized, with more movement between the Bowling Green-Warren County urbanized area and adjoining counties. This regionalization has placed an increasing demand on the area's arterials to function in multiple ways and serve different uses and travel needs.

FUTURE LAND USE

A number of factors affect the travel frequency and destination choices of users of transportation facilities. Included in these factors are land use development patterns, travel lengths, mode availability, perceived travel costs, and trip purpose. Socioeconomic data have proven to be invaluable tools for estimating the travel behavior of the driving public. Also, the level of traffic generated on a particular roadway is directly related to the land use of either adjoining properties or neighborhoods. Different types of land use generate different levels of traffic. Large residential neighborhoods generate a vastly different level of traffic than a

commercial area dominated by fast food restaurants, grocery stores or by a regional mall. As a result, the type of land use and intensity of development along a roadway corridor will have a direct impact on the amount of traffic generated. In the Bowling Green-Warren County urbanized area, development has increased dramatically since the 1950s. The largest concentration of development in the county is located in and adjacent to Bowling Green. Development has increased along the major arterials connecting Bowling Green with adjacent counties that have experienced economic growth. This has been especially true for US 231 to Scottsville. The improved road has increased accessibility and mobility and has become a desirable area for development. Likewise, the interstate has exerted influence for the development and growth to occur along the corridor. Consideration of future land use in Bowling Green and Warren County is a crucial factor when determining future transportation needs for the community. **Figure 3.2** displays the future land use map for Warren County.

DEVELOPMENT DENSITIES AND TRANSPORTATION NEEDS

Residential and employment densities vary widely among the county, with the highest densities associated with the older area of Bowling Green. Densities are important because of the way that they affect transportation needs for residents of the Bowling Green-Warren County urbanized area. Low-density development by definition is more dispersed and requires the use of an automobile for many trips. Higher residential densities on the order of 4.0 or greater units per acre qualify for fixed route transit. Additionally, highest residential densities of 8.0 or greater units per acre can accommodate significant transit services operating at half hour headways.

LAND FORMS AND BARRIERS

In addition to land use, there are several natural and manmade features that influence land development and transportation facilities in Warren County. They are as follows:

- The Barren River, Green River, Gasper River, Bays Fork, Drakes Creek and Jennings Creek, create barriers to development throughout Bowling Green and Warren County.
- Barren River has a particularly limiting effect on access and growth between north and south Warren County because most roadways do not cross the river.
- The CSX railroad dissects Warren County, running from the northeast, southward through county. Also, R.J. Corman railroad travels from the CSX line at Memphis Junction in southern Bowling Green southwest through Warren County into Logan County.
- Karst terrain occupies a significant area of Warren County and impacts development patterns throughout most of Warren County. Karst areas are frequently comprised of crater-like areas of sinkholes, limestone masts, sharp hillsides, underground streams and caves and present special challenges to development. The most distinguishing characteristic of karst landscapes is the concentration of water flow in underground channels. Karst aquifers are open in nature and lack thick soil covers. For this reason, such

aquifers are highly vulnerable to contamination. Additionally, considerable amounts of water that enter karst aquifers come from storm water runoff that flows straight into the system at sinking streams and sinkholes. Therefore, pollutants associated with agricultural and urban land use are washed directly into the karst aquifer. These include things like animal waste, pesticides, fertilizers, grease, metals, gasoline and other contaminants. Unfortunately, many karst areas must and will be used for agricultural and urban land uses. For these reasons, cave entrances, depressions and sinkholes influence where development can occur.

- The Dripping Springs Escarpment creates a challenging land barrier in the northern part of the county.
- The Bowling Green Warren County Airport, located in the center of Bowling Green's primary commercial area has exercised significant influence on development patterns in eastern Bowling Green.
- Mammoth Cave National Park is a regional attraction that while not located in Warren County impacts the surrounding area's development activities. The National Park has received recognition as an international treasure being named a World Heritage Site in 1981 and part of an International Biosphere Reserve in 1990. The Biosphere Reserve was established to help protect the cave system while facilitating development in the surrounding area. Subsurface water quality and air quality in the Park are closely monitored affecting development in the region, including Warren County.

As part of the transportation plan development process, the Bowling Green-Warren County MPO coordinates with the appropriate federal, state and tribal wildlife, land management and regulatory agencies (i.e. U.S. Department of Agriculture, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency) to discuss environmental mitigation activities at the corridor and regional level. Letters were sent to the appropriate federal, state and tribal agencies responsible for wildlife and land management to determine areas to carry out potential environmental mitigation activities. Federal, state and local plans or maps have been reviewed to identify conservation areas and historic resources and to determine appropriate policy level mitigation strategies. There were no significant issues identified from the plans and maps reviewed (via agency online websites including the following: Warren County Historical Society, Kentucky Heritage Council, Kentucky Environmental and Public Protection Cabinet, and Warren County Conservation District).

D. TRANSPORTATION AND LAND USE RELATIONSHIP

ACCESSIBILITY AND LAND USE

Historically, the introduction of new transportation technologies has led to significant changes in the pattern and extent of land use within Warren County. Early reliance on walking resulted in a pattern of dense cities with dense residential areas surrounding commercial, residential, industrial, and warehousing areas centered on the railroad. Streetcars and trolley systems

caused early forms of suburban development. Finally, the introduction of the automobile and then the interstate and parkway systems allowed expansion of residential and commercial development into formerly rural areas. Increasingly, over the next 25 years, housing affordability, lifestyle preferences, public housing, and tax policies will be key factors in land use decisions.

TRANSIT AND LAND USE

The low residential densities of some urban development makes fixed route transit difficult to extend outward into the outer fringe of the urbanized area and to the rural Warren County. The transit plan discusses several strategies that would promote public ridership. **See Chapter 3.**

AVIATION AND LAND USE

The 2015-2030 Bowling Green-Warren County Regional Airport Master Plan provides two forms of land use planning information: airport property and areas adjacent to the airport property, which may be affected by the airport and its operations. Included in the 2015-2030 airport master plan are construction of an 80-foot-by-80-foot corporate hangar and a 100-foot-by-100-foot hangar; a terminal; land acquisition for a runway, runway safety area, and approach; and construction of an air traffic control tower. The first five years of the plan consist of 16 projects, totaling \$27,227,500. The population growth of the airport's catchment area – Warren, Butler, Edmonson, Barren, Allen, Simpson, and Logan counties – significantly affects the needs of the Bowling Green-Warren County Regional Airport, according to the airport master plan.

TRANSPARK AND TRANSPORTATION

The Kentucky Transpark, a high-tech commerce and business park located on U.S. 31W and US 68/80 on the north side of Bowling Green, is more than 900 acres of industrial development property. The Transpark can accommodate heavy and light industrial manufacturing operations and also offers planned unit development sites for commercial establishments. The official groundbreaking for the Transpark was held in August 2003.

Bowling Green Metalforming, a subsidiary of Cosma International Group of Magna International, Inc., was first to locate in the Transpark in 2004. The company initially constructed a 900,000-square-foot facility bringing 1,100 new jobs and a capital investment of more than \$200 million to Bowling Green. Now, the more than one million-square-foot facility on nearly 133 acres employs 955 people. The plant will expand its operations in 2015, adding 450 employees and investing \$261 million.

In 2007, Cannon Automotive Solutions, Inc. located in the Transpark, heralding the creation of 130 jobs and an economic investment of \$13.1 million. Cannon, a subsidiary of The Electromac Group, is approximately 60,000 square feet on 13.2 acres of land and employs 37 people. American Howa Kentucky, Inc. held its grand opening in 2008 for an 84,000-square-foot facility on 24 acres of land at the Transpark, creating 61 new jobs and an economic investment of \$10.55 million. Howa expanded in 2008 with an investment of \$12 million. Howa expanded again in 2010, bringing a capital investment of \$11.5 million and 86 jobs. The company now has 168 employees in an approximately 100,000-square-foot facility on 27.2 acres.

Shiloh Industries joined the Transpark in 2010 with an 81,000-square-foot facility on nearly 14 acres. Shiloh employs 63 people. In 2013, ALPLA located in the Transpark on almost 17 acres in an 81,000-square-foot facility with 44 employees.

Bilstein North America announced its location to the Transpark in 2013 and will begin construction in fall 2015 on 64.5 acres. Bilstein is scheduled to begin operations by fall 2016 and hire 90 employees. Constellium-UACJ announced its location to the park in 2014 and plans to be operational by fall 2015. That facility will be 250,000 square feet, will employ 80 people, and bring an investment of \$155.8 million.

In addition to industry, the Transpark is also home to educational facilities, including South Central Community & Technical College, a community college campus focused on industrial training to serve the industries in Warren County and the surrounding area; Warren County Area Technology Center, a facility that provides industry-based education to high school students to transition them from high school directly to work or post-secondary education; and Green River Regional Education Cooperative, which provides professional development services, curriculum development, and instructional strategies to area kindergarten through 12th grade school systems.

With a campus-like setting, the Transpark has both bike and walking trails along with green space and water features throughout. The Restrictive Covenants and Binding Elements of the Transpark ensure that new landscaping, lighting, signage, and other features exceed current requirements of Warren County Subdivision Regulations, the Warren County Comprehensive Plan and the Greenbelt Master Plan. Because of the attractiveness of the northeast park of Bowling Green and the rural area surrounding the Transpark, there has been renewed interest in residential development, with several single- and multi-family residential developments proposed or in the process of being developed. Commercial developments have also been proposed in that area to provide services to workers in the Transpark. The newly constructed Bristow Elementary School has also helped spur development in the area.

To accommodate the growing industry, employment, and residences, an Interstate-65 connector road is under construction and is scheduled to be completed by the end of 2016. A new 40 megawatt (MW) substation that is expandable to 80 MW is also being installed. Commonwealth Boulevard within the Transpark is being extended.

BOWLING GREEN REDEVELOPMENT AREA AND TRANSPORTATION

The city of Bowling Green developed a strategy to revitalize downtown in 2002. The city secured Tax Increment Financing (TIF) funds for the redevelopment of the city's downtown area between Western Kentucky University and the other side of Barren River, and generally south of Kentucky Street, north of Center Street, and east of 8th Avenue. This area is the former center of commerce in Bowling Green and the heart of the Central Business District of the city.

The county formed the Warren County Downtown Economic Development Authority, a non-profit corporation to oversee the project, which is projected to cost approximately \$236 million dollars, including \$100 million in bonds. The bonds will be repaid using TIF strategy, with 80 percent of the increase in future tax revenue going toward bond repayment. The collected funds will be held in escrow until at least \$200 million has been invested.

The TIF District, which is driving the redevelopment of downtown Bowling Green, includes the Bowling Green Ballpark, the Southern Kentucky Performing Arts Center (SKYPAC), Circus Square Park, and a parking garage with a commercial wrap that can accommodate restaurants. Future plans include retail shops, and residences. Successful redevelopment of this urban core will affect transportation by drawing traffic once again downtown, which has implications for transit and pedestrian modes. The TIF design guidelines (developed by Looney Ricks Kiss

Architects, Inc.) recommend bike lanes, pedestrian crosswalks, and special paving in some areas. Possibilities could include porous pavement, textured crosswalks and bus stops.

WKU is an integral part in the TIF District and the gateway to downtown Bowling Green. TIF projects with WKU have included the WKU Augenstein Alumni Center with conference space, Hyatt Place Bowling Green, WKU apartments and houses on the Greek Row. Future projects include a multi-use wrap that houses the WKU Police Department, WKU Bookstore Annex, spa, and WKU Student Life Foundation Apartments.

In terms of transportation elements for this development, 14th Street was replaced with an access road between Center and Kentucky streets. Bus stops have been included to facilitate daily fixed route service, tours, and special events. A traffic study of the area recommended an evaluation of warrants for a traffic signal at the intersection of Kentucky and 13th Street upon completion of the development of this block.

E. ENVIRONMENTAL MITIGATION

Transportation affects our quality of life. With this in mind, the development and operation of our transportation system must be balanced in such a way as to provide access to the resources that we need while minimizing negative impacts on our environmental resources. The KYTC recognizes the relationship between the elements of the natural environment as well as those of the human environment.

In the development and operation of the transportation system, the KYTC must consider the natural environmental issues which include water, air, noise, and land as well as those animals and plants that are considered threatened or endangered species. Additionally, the KYTC must consider the diversity of human environmental issues, which include but are not limited to the following: community activity centers (e.g., schools, churches, and hospitals); Resource Conservation and Recovery Act (RCRA) sites (e.g., underground chemical/petroleum tanks); and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites such as areas of former industrial activity that require the removal of hazardous materials. Other human environmental considerations include archeology sites, historic sites, socioeconomic impacts and environmental justice.

The KYTC makes every effort to identify environmental resources and avoid negatively impacting those resources. When impacts to environmental resources cannot be avoided, efforts are made to minimize impacts. Finally, where impacts cannot be avoided or acceptably minimized, mitigation activities are pursued. The means of mitigation vary upon the site and situation. Mitigation can be at the site of the impact (e.g., noise barriers to protect homes and businesses from highway noise, vegetative screening to protect the view of the road from a historic property, or clean-up of hazardous materials). KYTC follows its established Noise Policy in assessing the noise impacts of its projects on adjacent properties. When impacts are determined to exceed established threshold criteria and when economically justifiable, mitigation measures are incorporated within developing projects. These measures may include the construction of noise walls, installation of insulating materials in affected buildings, or minimization techniques such as alignment adjustment, lowering of grades into cut sections, construction of berms, etc.

Alternatively, mitigation has proven to be more effective off-site rather than on-site when impacting ecological habitat or water quality. Because ecosystems are large scale, it is best to accumulate the mitigation funding from several smaller impacts. This allows the culmination of

smaller scale mitigation efforts to have greater potential of impacting ecological diversity and health. The KYTC partners with other federal and state agencies to develop stream and wetland banks. The KYTC mitigation efforts also fund research as well as create, enhance, and preserve habitat for endangered species in Kentucky. Lands selected for these mitigation activities are then protected by preservation easements or are owned and managed by appropriate agencies for the long-term health of Kentucky's natural ecosystems and water quality. These activities and programs offset the unavoidable impacts to streams, wetlands and ecosystems that may result from highway construction projects.

Early in the project development process, the KYTC project teams invite public officials and other stakeholders to identify and address potential impacts to environmental resources. When impacts are unavoidable, mitigation and minimization measures including, but not limited to, documentation of affected structures, enhancement and/or preservation initiatives, etc., are undertaken. Concerns for the loss of historic bridges have prompted KYTC to initiate an update of the statewide Historic Bridge Inventory. The KYTC has also developed a web-based portal so that those interested in historic preservation can easily request to become Section 106 consulting parties. This opportunity can be accessed via KYTC's environmental analysis webpage¹. Stakeholder involvement greatly enhances the KYTC's understanding of the circumstances surrounding individual projects and local priorities.

The KYTC DEA executes these duties through the review, preparation, and oversight of environmental documents, contracts, or actions as required by state and federal environmental laws and regulations. The DEA also provides a single point of contact through the District Environmental Coordinator to the general public and to the KYTC personnel for environmental guidance, information, and concerns. Policies and procedures are regularly evaluated to identify more efficient ways to incorporate environmental considerations into practice. The KYTC strives for constructive relationships with regulatory agencies to facilitate meaningful review and project approvals. These relationships are formalized through interagency agreements and built on trust. These valuable partnerships mutually enhance the mission of each participating agency, resulting in improved outcomes for the citizens of the Commonwealth.

¹ <http://transportation.ky.gov/environmental-analysis/pages/consulting-party-projects>

Figure 3.1

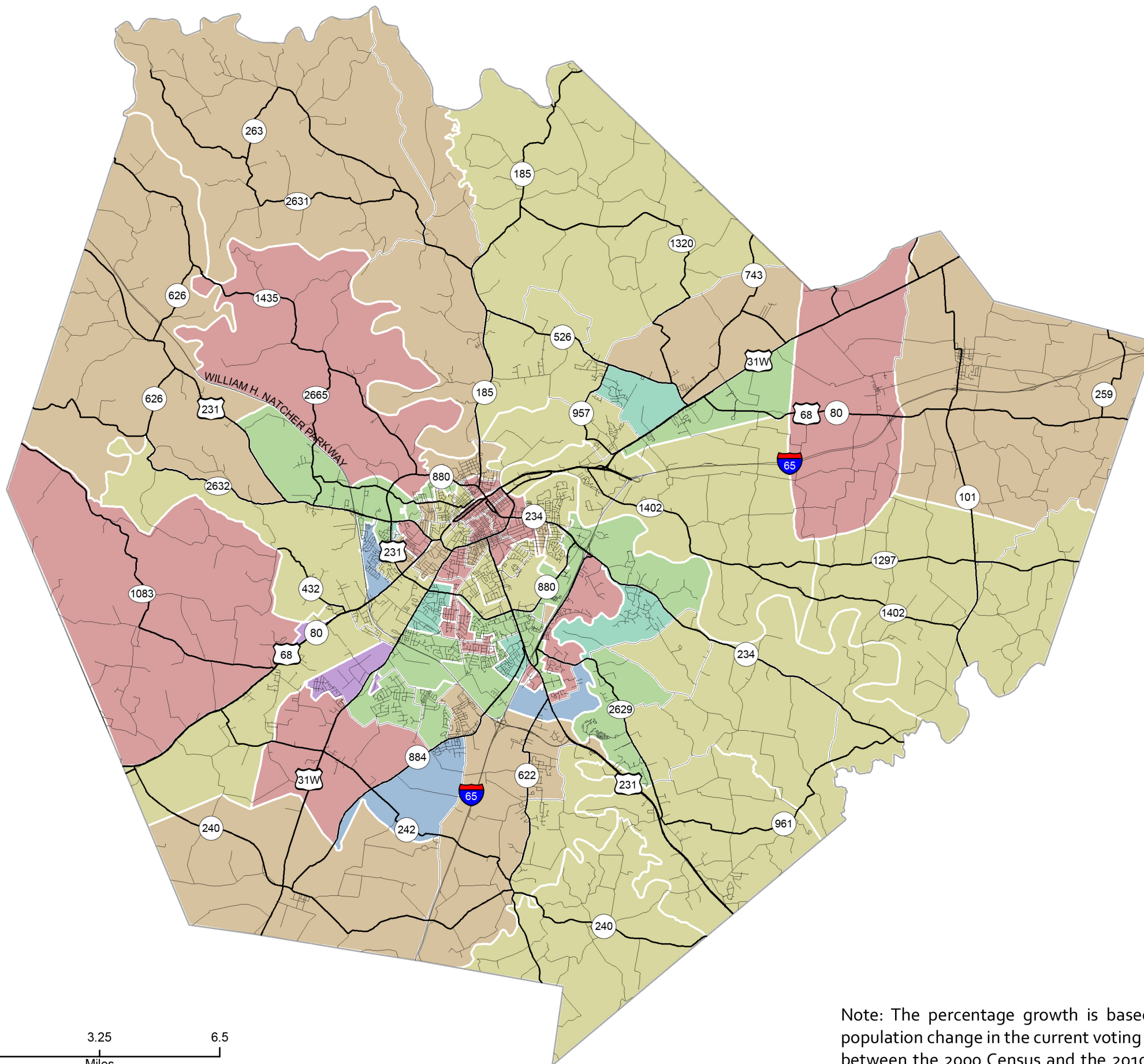
 Warren County

 Population

 Growth by

 Voting

 Precinct



Growth (%)

	-100 to -1
	0 to 7
	8 to 32
	40 - 81
	94 to 156
	273 to 325
	1916 to 2067

Note: The percentage growth is based on the

 population change in the current voting precincts

 between the 2000 Census and the 2010 Census.



0

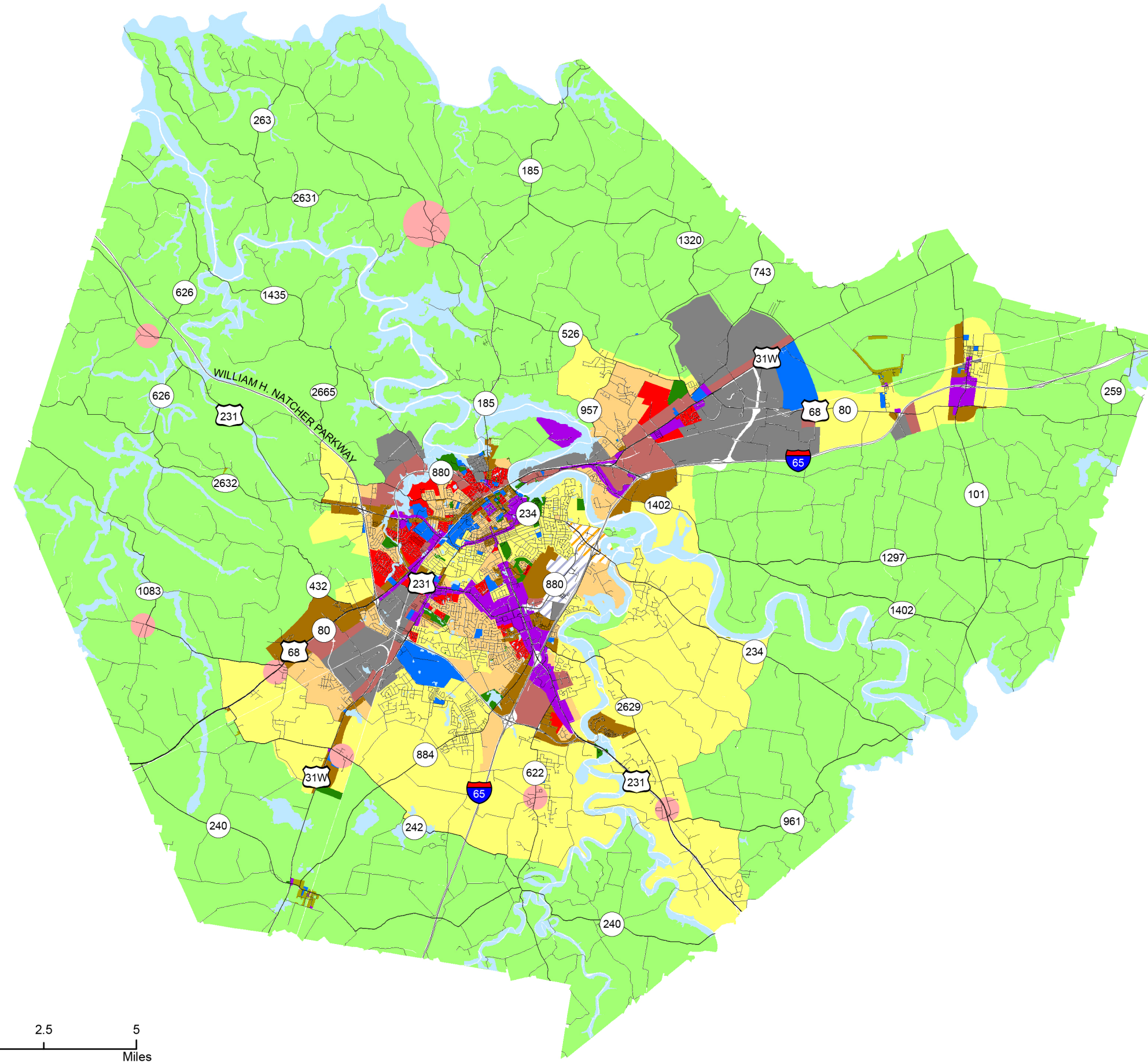
 3.25

 6.5

 Miles



Figure 3.2 Warren County Future Land Use Map



- Agriculture
- Rural Density Residential
- Low Density Residential
- Moderate Density Residential
- High Density Residential
- Mixed Use / Residential
- Mixed Use / Commercial
- Commercial
- Industrial
- Institutional / Governmental
- Open Space, Parks & Recreation
- Rural Village
- Cemetery Road Overlay
- Lovers Lane Overlay
- Floodplain

0 2.5 5
Miles



CHAPTER 4

EXISTING TRANSPORTATION SYSTEM

INTRODUCTION

In order to accurately reflect the transportation needs of the Bowling Green-Warren County MPO area, an assessment of what currently exists must be compiled. The following information is a summary of the existing transportation services within the Bowling Green-Warren County MPO. There are currently air, rail, freight, transit, pedestrian, and bicycle facilities available in addition to the highway network. This description of the existing transportation system is intended to serve as a reference or baseline for policy and decision makers.

A. COMMUTING PATTERNS

The US Census Bureau estimated there to be 58,208 people working in Warren County in 2012, with 79.4% (46,204 persons) of these workers residing within the county and 20.6% (12,004 persons) residing outside of Warren County and commuting for work. As the number of commuters into Warren County steadily increases, the viability of Warren County being a regional economic center will continue to rise.

According to the 2012 US Census Bureau estimates, Warren County housed 46,204 workers. Of the workers living within the county, 70% (32,323 persons) lived and worked in Warren County, leaving 30% (13,881 persons) of Warren County residents commuting to other counties for work.

While Warren County attracted workers from 84 Kentucky counties, 7 Louisiana parishes, and 516 counties overall in 2012, 41 of these counties provided 100 or more workers. The primary commuting shed for Warren County in 2012 consisted of seven core counties that each provided 1,000 or more workers. These counties were: Barren (2,274), Allen (2,085), Edmonson (1,924), Logan (1,756), Jefferson (1,695), Simpson (1,406), and Butler (1,325). In addition to the primary commuting shed, Warren County attracted more than 500 workers from these counties: Daviess (756) and Hardin (695).

Warren County residents commuted to work to 439 counties outside Warren County. Among those 439 counties, 26 provided employment to 100 or more Warren County residents each. Jefferson and Simpson counties attracted more than 1,000 Warren County residents (1,776 and 1,276, respectively). Five counties attracted more than 500 Warren County residents: Barren (807); Fayette (706); Logan (637); Davidson, TN (622); and Daviess (618). **Tables 4.1-A and 4.1-B** below illustrate the commuting patterns into Warren County.

TABLE 4.1-A Top Counties Where Warren County Workers Resided in 2012		
County	Workers	Percent of All Jobs (58,208)
Warren	32,323	55.5%
Barren	2,274	3.9%
Allen	2,085	3.6%
Edmonson	1,924	3.3%
Logan	1,756	3.0%
Jefferson	1,695	2.9%
Simpson	1,406	2.4%
Butler	1,325	2.3%
Daviess	756	1.3%
Hardin	695	1.2%
Hart	499	0.9%

Source: US Census Bureau, Center for Economic Studies

TABLE 4.1-B Top Counties Where Warren County Residents Worked in 2012		
County	Workers	Percent of Outside Jobs (46,204)
Warren	32,323	70.0%
Jefferson	1,776	3.8%
Simpson	1,276	2.8%
Barren	807	1.7%
Fayette	706	1.5%
Logan	637	1.4%
Davidson, TN	622	1.3%
Daviess	618	1.3%
Ohio	473	1.0%
Chrisitan	463	1.0%
Hardin	419	0.9%

Source: US Census Bureau, Center for Economic Studies

ACCESS TO VEHICLES

In 2013, there were 2,784 households in Warren County that did not have access to a vehicle. This represents nearly 6.3% of the total households in county. Within Bowling Green, there were more than 2,300 households, or 10.3% of the city's total households without access to a vehicle.

B. EXISTING HIGHWAY SYSTEM

The highway system is the backbone of the Bowling Green-Warren County MPO transportation system. The system consists of 1,425 miles of public roads and streets and provides a means for access and mobility for its daily users. It also provides the infrastructure for pedestrian, bicyclists, and transit service.

Not all streets or highways perform the same function, nor are they funded from a single source of revenues. In fact, there are several ways to describe the existing highway system that is found in the Bowling Green-Warren County MPO area. Included in the narrative below is a description of the various systems used at the state or local level to categorize the roadways of Warren County, as well as, the characteristics of these roadways.

URBAN OR RURAL

Because urban and rural areas have fundamentally different characteristics as to street density, spacing, highway network, and travel patterns, it is basic that each street, road or highway is divided into either urban or rural. Presented below is a brief description of the two classes:

For the purpose of classification in Warren County, urban areas are defined as census-designated, contiguous built up areas, with a population of at least 5,000 people. Roads within the urban area are classified as an urban roads, highways, or streets. Roads or streets outside the urban area are classified as rural. The functional classifications are described similarly whether in urban or rural areas. However, the differences in the nature and intensity of development between rural and urban areas cause the rural system to have roadway characteristics that are somewhat different from the correspondingly named urban systems. Those distinctions have been noted in the functional classification descriptions below.

FUNCTIONAL CLASSIFICATION

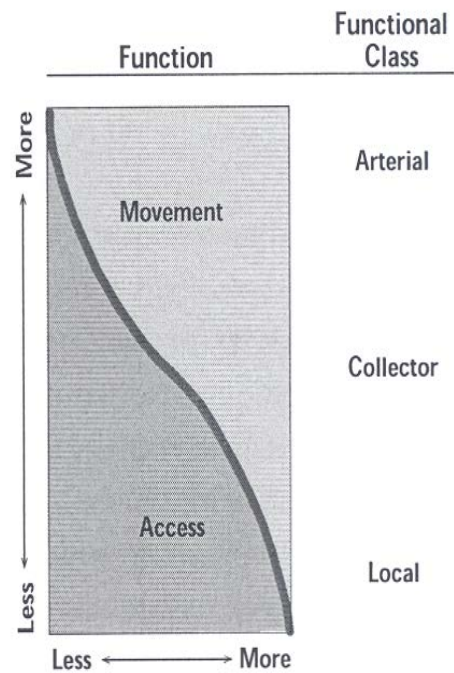
INTERSTATE AND PARKWAY

A type of principal arterial but with controlled access. These roads have four or more lanes that move large volumes of traffic. Access to an interstate or parkway and other streets is accomplished by grade separated interchanges.

PRINCIPAL ARTERIAL

Roads that serve longer inter-regional trips or major centers of metropolitan areas are called principal arterials. They serve urban areas but can also provide mobility through rural areas. Ideally, a principal arterial should be used only for traffic movement and should not provide for vehicle access to adjacent properties. Interruption of traffic flow should be permitted only at street intersections.

Functional Class Hierarchy



MINOR ARTERIAL

A minor arterial road is one that interconnects larger towns and other major traffic generators which are capable of attracting travel over moderately long distances. Minor arterials, spaced at intervals consistent with population density, ensure that all developed urban areas are within a reasonable distance of an arterial highway. Within the larger urban area, the minor arterial street interconnects and augments the principal arterial system. The minor arterial provides service to trips of moderate length and a somewhat lower level of travel mobility than a principal arterial.

MAJOR COLLECTOR

A collector carries moderate traffic volumes and provides a balance between access to adjacent properties and traffic circulation within residential, commercial, and industrial areas. In smaller urban areas, a collector street(s) may include the street grid, which forms a logical scheme for traffic circulation in the downtown area. A rural major collector road or urban collector street typically links local facilities or minor collectors with the arterial system. The rural major collector also serves towns not directly served by an arterial highway, or other traffic generators of inter-county importance.

MINOR COLLECTOR

A minor collector road is used for moving of vehicles from local roads, providing access to adjacent properties, and serving smaller rural communities, which do not have access to other collector or arterial roads. Minor collector roads typically carry more traffic than local roads, but still have only low volumes of traffic. The minor collector road may penetrate a residential neighborhood, for the purpose of distributing trips from the major collector or arterial into the local street system and properties adjoining its rights-of-way.

LOCAL

The primary function of local roads and streets is to provide access to adjacent properties. Local streets have the smallest rights-of-way, provide the lowest level of mobility, have the lowest operating speeds, and therefore, generally have the lowest traffic volumes. Local roads and streets comprise the largest portion of the total mileage of the system in either an urban or rural area but carry only a small portion of the total vehicle miles traveled. Through traffic should be discouraged on local roads and streets. All roads/streets not designated within this document as either arterial or collectors are local.

Table 4.2 below displays the mileage by functional classification for public roads in Warren County. This classification system conforms to the system enacted by the KYTC. **Figures 4.1** and **4.2** at the end of this chapter, graphically show the location of the functional classified roads in Warren County and the City of Bowling Green.

TABLE 4.2 MILEAGE BY FUNCTIONAL CLASSIFICATION FOR PUBLIC ROADS WARREN COUNTY 2015	
ROAD/STREET CLASSIFICATION	MILEAGE
Rural	
Interstate	21.66
Freeway/Expressway	10.72
Principal Arterial	10.53
Minor Arterial	7.16
Major Collector	74.01
Minor Collector	136.00
Local	637.75
Rural Sub-total	897.82
Urban	
Interstate	7.52
Freeway/Expressway	9.52
Principal Arterial	17.45
Minor Arterial	34.74
Major Collector	40.99
Minor Collector	2.04
Local	441.34
Urban Sub-total	553.61
Total	1,451.43

MAINTENANCE OF HIGHWAY OR STREET SYSTEM

In 2015 there were over 1,450 miles of public streets and highways serving Warren County. The KYTC is presently responsible for the repair and maintenance of over 415 miles of Warren County's roads. The remaining 1,010 miles of public roadways are under the responsibility of Warren County, the incorporated cities of Bowling Green, Plum Springs, Oakland, Smiths Grove, and Woodburn. Additionally, there are slightly less than 71 miles of privately owned and maintained roads. **Table 4.3** below shows the existing roadway mileage in Warren County.

The KYTC maintains the federal and state highways. The maintenance of city streets in Bowling Green is primarily the responsibility of the Bowling Green Public Works Department. Maintenance responsibilities include, but are not limited to, street/sidewalk maintenance and repair, ice and snow removal, traffic control, greenways, and rights-of-way vegetation control. The cities of Plum Springs, Oakland, Smiths Grove, and Woodburn have informal agreements concerning the maintenance of streets with Warren County. These agreements cover limited ice and snow removal, minor street maintenance, open ditch maintenance and rights-of-way vegetation control. Street overlay and pavement work in all four cities is contracted with private contractor.

County roads are maintained by the Warren County Public Works Department and provide limited ice and snow removal, unpaved road maintenance, open ditch maintenance and rights-of-way vegetation control. Road paving is contracted with private contractor.

TABLE 4.3 EXISTING ROADWAY MILEAGE IN WARREN COUNTY	
AGENCY	MILEAGE
Kentucky (KYTC)	415.56
Warren County and Municipalities	1009.66
Private	70.85
Total	1,496.07

SPECIAL ROADWAY CORRIDORS

This section describes roadway corridors, which have special designation, serve a special purpose, or can be characterized by the nature of their use. Examples of these corridors are statewide bikeways or scenic byways. There is one scenic highway and two state bikeways; local bikeways have been established through the Greenways network and also through touring routes from local cyclist club annual events.

The Duncan Hines Scenic Byway is an 82-mile route beginning in Bowling Green at the former home of Duncan Hines; it then travels along US 31W to KY 101 in Warren County reaching the Edmonson County line, then following KY 70 and KY 259, crossing the Green River by ferry in Mammoth Cave National Park. This scenic route runs through small towns throughout Warren and Edmonson counties, allowing a look into the rural Kentucky landscape.

The two state bikeways, Midland and Mammoth Cave, are part of the Kentucky statewide bike trails system and both routes use existing state and county roads. The Midland Bikeway enters Warren County on KY 422 in the County's northeastern corner and passes through Smiths Grove and Oakland and then on to KY 1402, to KY 961 and KY 240 at Boyce. The Midland Bikeway then takes KY 242 through Richpond and Rockfield then on KY 1083 north to the Warren and Butler County line. The Mammoth Cave Bikeway enters southern Warren County on KY 622 to KY 240 near the Boyce Community then east where it crosses US 231 near Alvaton. From US 231 the Mammoth Cave Bikeway travels on the same route as the Midland Bikeway until it exits Warren County at the Edmonson County line.

The local bikeway route begins in north Warren County near US 31W and travels east through Oakland and Smiths Grove before traveling north into Edmonson County and on to Mammoth Cave. This route returns to its point of origin via KY 743 in Warren County.

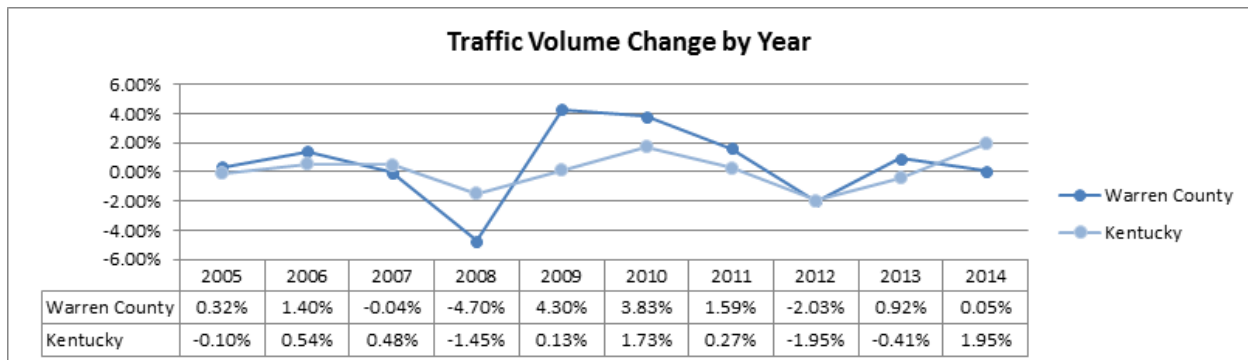
C. TRAFFIC VOLUME DATA

The most recent average daily traffic (ADT) volumes on Kentucky highways within Warren County are shown in **Figures 4.3** and **4.4**. An examination of traffic volumes reveals traffic on

roadways in Warren County is strongly influenced by inter-urban or through traffic. I-65 and the Natcher and Nunn Parkways are the primary routes for through traffic. US 68/KY 80 and US 231 also carry a significant amount of through traffic. The primary destination for intra-county or local traffic volumes is Bowling Green, thus, the traffic volumes on major routes of local interest are highest as they approach Bowling Green.

Over the past ten years (2005-2014), annual traffic volumes in Warren County have increased, on average, by 0.56%, compared with an average increase in Kentucky of only 0.12%. With the recession in 2008, Warren County experienced a significant drop in traffic volume as all facets of the economy were affected, forcing people to travel less. In Warren County, the largest average annual increase occurred between 2008 and 2009, at a rate of 4.3%, while statewide, the largest average annual increase occurred between 2013 and 2014 at a rate of 1.95%. It is important to note, however, that increasing traffic volumes have been observed in more recent years, as the five year average for Warren County has climbed to an increase in 0.9% annually, and statewide, 0.3% annually. **Table 4.4** depicts the change in traffic volume (percentage), by year, for the years 2005 to 2014.

Table 4.4 Traffic Volume by Year



D. SAFETY

Between January 1, 2014 and December 31, 2014, 4,247 traffic crashes were reported in Warren County according to the Kentucky State Police's Kentucky Collision Analysis database. See **Figure 4.5** and **Figure 4.6** at the end of this chapter for crash sites for 2014. An analysis of the 2014 Critical Rate Factor data revealed that there were 17 road segments in Warren County with a Critical Rate Factor of 0.90 or greater. (If a segment has a Critical Rate Factor greater than 1.00, it indicates that the segment is a high crash segment and that crashes at this location may not be occurring randomly. Also, if a Critical Rate Factor ranges from 0.90 to 0.99, the segment is considered to be a potentially high crash segment.) **Table 4.5** below lists these sections and shows the Critical Rate Factor.

TABLE 4.5 WARREN COUNTY (2014) ROAD SEGMENTS WITH CRF > 0.90				
ROUTE	ROUTE DESCRIPTION	BEGIN MILE POINT (BMP)	END MILE POINT (EMP)	CRITICAL RATE FACTOR (CRF)
US-231	Morgantown Road - west of the William H. Natcher Parkway, from Mark Trail to West Villa Drive.	15.15	15.62	2.14
WN-9007	William H. Natcher Parkway Extension - from Scottsville Road to I-65.	0	2.08	1.95
KY-234	East 6th Avenue - from Fairview Avenue to US 68 (Veterans Memorial Lane) and US 68X (Kentucky Street/Adams Street) intersection.	13.11	13.65	1.93
US-231	Campbell Lane - from US 231X (Scottsville Road) to Westpark Drive.	10.46	11.31	1.6
US-31W	US 31W Bypass - from roundabout at Loving Way to US 231X (Broadway Avenue).	11.82	12.81	1.55
US-231	Scottsville Road - between US 231 (Campbell Lane)/KY 880 (Lovers Lane) and I-65 Interchange.	9.06	10.46	1.52
US-231	Morgantown Road - west from the William H. Natcher Parkway ramp to Mark Trail.	14.86	15.15	1.51
KY-234	East 7th Avenue - from intersection of US 68 (Veterans Memorial Lane) and US 68X (Kentucky Street/Adams Street) to beginning of Fairview Avenue.	13.11	13.65	1.5
US-31W	US 31W Bypass - from US 231X (Scottsville Road) to KY 3225 (Old Louisville Road).	12.81	14.42	1.39
KY-884	Three Springs Road - from Long Road/Dillard Road to Smallhouse Road.	5.52	7.92	1.17
KY-185	KY 185 - from intersection with KY 1320 (Penns Chapel Road) to Butler County line.	8.51	11.91	1.14
KY-2665	Clay Street - from West 12th Avenue to West Main Avenue.	7.73	8.12	1.12
KY-2665	Glen Lily Road - from North Sunset Drive to Clay Street.	6.46	7.73	1.12
US-231	Morgantown Road - from Willoughby Lane to William H. Natcher Parkway.	14.58	14.86	1.09
KY-957	Plum Springs Road - from Grogan Street to KY 526 (Mt. Olivet Road).	0.73	3.33	1.06
KY-884	Three Springs Road - from Smallhouse Road to US 231 (Scottsville Road).	7.92	9.63	0.97
KY-622	Plano Road - from KY 240 (Woodburn-Allen Springs Road) to Meadow Hill Drive.	2.65	5.1	0.92

INCIDENT MANAGEMENT

The KYTC District 3 Incident Management Team was formed June 2006 with a mission to improve the safety of first responders and motorists, and reduce delays on our roadways by providing oversight and direction for Kentucky's Highway Incident Management Program. The Incident Management Team consists of local and regional response agencies, i.e. fire, law enforcement, rescue, highway department etc. The goals of this team are to increase responder and motorist safety, preserve mobility, and decrease the negative economic impacts due to incidents. This group meets quarterly to discuss interstate and other highway incidents in a stress-free environment. Discussion includes, but is not limited to, highway construction projects, implementation of new highway safety programs and new safety devices, and successes and challenges at incident scenes.

The Safety Assistance for Freeway Emergencies (SAFE) Patrol is designed to aid motorists and assist with incident management. The SAFE Patrol is located in the Kentucky Office of Highway Safety Division of Incident Management. It is a part of a comprehensive incident management initiative to improve safety and reduce delay caused by nonrecurring congestion and improve operations of the freeway system. The service is free of charge (however, if a wrecker is required, the motorist is responsible for payment) and operates from 6:00 a.m. to 10:00 p.m., seven (7) days a week. Operators assist motorists by providing the following services free of charge:

- Gasoline and oil for those in need,
- Add air to tires and change flat tires,
- Provide a "jump" for dead batteries, and
- Other minor automotive repairs.

SAFE Patrol operators also assist law enforcement by directing traffic at incident scenes to keep traffic moving or assist in setting up necessary detour routes; remove debris from the roadway; monitor infrastructure for suspicious devices, people or activity; check and tag abandoned vehicles; and monitor weather changes. SAFE Patrol operates on I-65 and the William H. Natcher Parkway in the Bowling Green-Warren County MPO area.

E. SECURITY

Improving safety and security remains the public's highest concern for the MPO's transportation system. Coordination among all agencies is necessary to address the many factors related to improving safety and security. Some of those factors include: increasing the use of safety equipment, improving driver skills and driver awareness, improving road and pavement conditions, decreasing congestion through innovative traffic control methods, monitoring and addressing roadway conditions during inclement weather, deployment of Intelligent Transportation Systems (ITS) to facilitate traffic flow, and timely communication to the public.

The roles for the Bowling Green-Warren County MPO regarding transportation security can include facilitator or participant in the development of a security action plan for identifying, prioritizing, and assessing risks for the region's transportation network during a threat of, or immediately following, an emergency or disaster incident. Such events of concern in this region include winter storms, flooding, tornadoes, earthquakes, public health emergencies, hazardous

materials releases, and national security emergencies. This action plan encompasses all aspects of the transportation system for both motorized and non-motorized users.

The deployment and maintenance of Intelligent Transportation System (ITS) components within the MPO area is the major structural element in support of that security action plan. This element is comprised of cameras for monitoring transportation facilities and dynamic message signs that convey critical information to the traveling public on the interstates and major highways within the MPO area.

Participation in the District 3 Incident Management Team and having active participation with the MPO Technical Advisory Committee (TAC) of emergency management and public safety staff members also supports the continued development of the security action plan.

F. BRIDGES AND OTHER STRUCTURES

Bridges comprise an important element of the roadway network. Inadequate bridges can cause various capacity problems, such as routing of heavy trucks and school buses, as well as safety problems. The KYTC regularly inspects bridges on public roads, evaluates their condition, and computes load limits and sufficiency ratings. Sufficiency ratings are based on the bridge's age, type, structure, condition, and traffic. The ratings are ranked from 0-100.

Within Warren County there are approximately 99 bridges. Of these bridges, 76 are maintained by the KYTC, 22 maintained by Warren County, and one (1) is maintained by the City of Bowling Green. There are 69 bridges with a sufficiency rating of 80% or better, leaving the remaining 30 below the 80%. Bridges must have a sufficiency rating below 80% to be eligible to receive federal assistance for replacement or rehabilitation. **Figure 4.7** shows the location of bridges in Warren County.

G. INTELLIGENT TRANSPORTATION SYSTEM (ITS)

Intelligent Transportation Systems, or ITS, encompasses a broad range of diverse technologies applied to existing highway facilities to improve safety, increase capacity, reduce congestion, and enhance mobility while minimizing environmental impacts, without necessarily having to physically alter existing highway infrastructure. These technologies are combined to form transportation management systems that will allow the responsible agencies within the Bowling Green-Warren County MPO area to actively manage the transportation network more efficiently. Generally, ITS applications can be categorized into one of eight general categories. These categories are Commercial Vehicle Operations; Incident Detection/Notification; Traffic Management; Safety; Road/Weather Information Systems; Transit; Traveler/Tourist Information; and Planning, Outreach and Delivery. A Bowling Green Incident Management System has been implemented which includes several components including reference markers, emergency management signal pre-emption, coordinated traffic signals, roadway weather information systems (RWIS), automated vehicle location (AVL), radar detection units, and flip down detour signs. ITS initiatives within District 3 and Warren County are coordinated through the Statewide ITS Architecture. Each of these general categories and specific applications will be reviewed below:

TRAFFIC MANAGEMENT

- In the Scottsville Road corridor an integrated signal system has been installed. Coordinated signal systems are also operational on KY 234 (Cemetery Road), US 31W (Nashville Road), and US 231 (Campbell Lane).
- On I-65 and two important access roads, seven permanent Dynamic Message Signs (DMS) have been installed within Warren County. The permanent DMS are augmented by portable Variable Message Signs (VMS) when needed. The major goals of the permanent DMS is to provide real-time traffic information to help motorists avoid congestion and aid safety. Currently, only the KYTC Traffic Operations Center has control of DMS system.
- KYTC has implemented an alternative routing system focused on I-65. Because of traffic volumes on I-65, crashes or other emergencies that occur along this roadway result in enormous vehicle delay and congestion. In response to the need to handle these crashes and emergencies, detour routes have been developed. The KYTC District 3 office has designated parallel routes, and an emergency management handbook has been prepared and distributed to all local emergency response agencies. Strategically located signage on I-65 and Natcher Parkway has been modified to permit hinged detour route signs to be permanently installed. These signs permit highway personnel to rapidly implement the emergency detour signage program, which helps alleviate the congestion caused by a crash or emergency. Additional permanent directional/alternate route signage has been installed on these routes.

SAFETY

- An emergency Vehicle Signal Pre-emption System has been implemented at over 60 intersections in Bowling Green. Warren County Fire Departments do not utilize the City of Bowling Green's system.
- A Smart Work Zone System utilizing mobile and permanent variable message signs (VMS) are used to announce detours or "construction ahead with possible delays" signs on I-65 and where other major construction projects occur. In addition, portable speed awareness radar trailers are used by the KYTC district office and local law enforcement agencies to reduce speed of vehicles and to make the motoring public aware of vehicle speeds in real time.

ROAD/WEATHER INFORMATION SYSTEMS

- KYTC maintains a 511-information system that provides motorists pre-trip and current highway and weather conditions. KYTC has installed one Road Weather Information System (RWIS) site in northern Warren County along I-65. The objective of this project is to create a statewide network of RWIS in order to collect information on changing weather and roadway conditions. Sensors detect wind speed and direction, air temperature, relative humidity, subsurface temperature, and surface temperature. In addition, a rain gauge and snapshot video camera are located at this site.

VEHICLE LOCATION SYSTEM

- Transit: GO bg utilizes a coordinated demand response system for its para-transit clients throughout Warren County. Western Kentucky University (WKU) is continuously implementing vehicle location systems and transit operations software in conjunction with its transit modernization program.

Two other regional uses of ITS technology that affect motorists and freight movement through Warren County are found on I-65 in adjacent Simpson County. At the weigh station on I-65 north in Franklin, approximately 20 miles south of Bowling Green, the KYTC operates a Commercial Vehicle Electronic Screening through a mainline automated clearance system. The KYTC also participates in the North American Pre-clearance and Safety System (NORPASS). NORPASS is a partnership between the motor carriers and state agencies to enhance the safety and efficiency of commercial vehicle operations. For those qualifying motor carriers, transponder devices are issued for each vehicle registered with NORPASS. These transponders are located in each truck and have unique identification numbers built into the transponder. The weigh station at Franklin has the ability to read the signal from the transponder with a roadside reader and through a screening database resident in a weigh station computer. The Franklin weigh station also has equipment that permits it to weigh the truck on the mainline at highway speed. This capacity permits the truck to remain on the highway and without having to stop at the weigh station.

H. MULTI-MODAL TRANSPORTATION

AVIATION

The Bowling Green-Warren County Regional Airport is the area's only Level III airport. A Level III airport serves as a business airport with a regional impact capable of accommodating corporate jet activities. The site of the Bowling Green-Warren County Regional Airport was established on the outskirts of the City of Bowling Green in 1934 as a military airfield. Since that time, the airport has grown to serve the ever-changing needs of the surrounding community. The city has now expanded and surrounds the airport with commercial and residential development. The existing airport is now "boxed in" without any practical way of expanding.

The Bowling Green-Warren County Regional Airport covers an area of 525 acres, which contains two runways:

- Runway 3/21: 6,500 x 150 ft. (1,981 x 46 m), Surface: Asphalt
- Runway 12/30: 3,955 x 150 ft. (1,202 x 46 m), Surface: Asphalt

FREIGHT

In May 2015, the KYTC distributed three (3) surveys, posted on the KYTC website, asking for input regarding Kentucky's freight system's performance, inventory, and the development of a state freight advisory committee. The purpose of the survey is to allow users of the freight system to communicate comments, concerns, and ideas to Kentucky's transportation officials.

The KYTC website provides a copy of the 2006 (minor updates in 2007) Kentucky Statewide Intermodal Freight Plan which states that “The primary goal of Kentucky’s Intermodal Freight Plan is to facilitate the safe, efficient movement of goods and freight through Kentucky in an environmentally and fiscally responsible manner. The plan focuses on addressing highway congestion and bottlenecks while promoting other modes to divert freight traffic from highways.”

Several freight maps are also available on the KYTC website, www.transportation.ky.gov/Planning/Pages/Freight-Planning, which allows Warren County to be placed in the larger statewide context. Maps which have useful information about Warren County include the Intermodal Freight Network Map, Airports Map, Railroads Map, Highway Freight Network Map, National Highway System Map, National Truck Network Map, and Truck Weight maps.

RAIL

The rail transportation system serving the MPO area consists of one major (Class 1) railroad, CSX Transportation, Inc., and one local railroad, R. J. Corman, Memphis line. CSX has connections with the major rail and truck lines in commercial centers around the nation. While intermodal service is becoming increasingly important to many distributors, there is presently no such facility within the area. Rail passenger service is currently not available in Warren County or the surrounding area.

TRANSIT

The City of Bowling Green and Warren County is a rapidly growing community with a changing infrastructure and community character. Western Kentucky University (WKU) is a growing university with an enrollment of 20,178 students in the 2013-2014 school year. With the expanding WKU enrollment and Bowling Green’s continued population growth, the public transit systems are seeing an increase in ridership. Presently, there are two fixed-route transit services operating within the Bowling Green Warren County MPO area, GO bg Transit System and the WKU Transit System, known as Topper Transit.

Fixed route transit service relies upon direct pedestrian connections between bus stops, origins, and destinations. Transit service reacts to the density of development within the city, location of transportation corridors and activity centers, and the design of developments along the corridors and centers it serves. Public transit systems generally include both transit and para-transit components. Para-transit is designed to carry passengers from their origins to specific destinations (often door-to-door) by immediate request or by prior reservation. Some additional special transit services are available in Warren County targeted to specific clients, such as the elderly or disabled residents.

Since their formation in 2008, the GO bg Transit Advisory Committee has been instrumental in allowing many businesses, community organizations, government agencies, and civic entities to offer input into current and future public transit needs. Currently, fixed-route transit service operates routes and schedules established through a public participation process. GO bg and WKU para-transit service complements fixed-route service by closely matching service areas and operational hours. In conjunction with the fixed-route transit services, private para-transit companies provide door-to-door service throughout the community.

GO bg Transit System

The Bowling Green Public Transit System has shown growth potential through the expansion of routes and services within the approximately 57 square miles of the Bowling Green-Warren County Urbanized Area. During Fiscal Year 2014, a total of 117,082 trips were made. During the first six months of Fiscal Year 2015, the system provided 62,560 trips, which is an 11% increase from the previous year. The GO bg transit system currently operates five (5) fixed-routes, a Go-to-Work shuttle, ADA door-to-door service for individuals with disabilities, four (4) daily shuttles Monday-Friday and designated holidays, and a shopping shuttle consisting of two (2) routes operating the second Saturday of each month. **Figure 4.8** at the end of this chapter shows the location of the fixed GO bg Transit routes.

Western Kentucky University Transit System

WKU is a growing institution that is currently bound by Adams Street and University Drive to the west, University Drive to the south, Normal Street and Chestnut Street to the east, and College Heights Boulevard and Alumni Avenue to the north. Since established residential areas surround the institution, the potential for physical expansion is limited. In the University's 20-year Master Plan, the majority of expansion is planned east of Normal Street, though some expansion will occur north of College Heights Boulevard and south of University Drive.

The WKU transit system currently serves the Bowling Green main and south campuses as well as nearby commercial and residential areas. In FY15, three day routes and two evening routes carried over 725,000 riders which represent a 25% growth over FY14. There are service expansions planned for FY16 to accommodate additional park and ride lots. On-demand para-transit service is available to disabled customers during the week. During the summer semester and other low enrollment periods, service is reduced.

The University also has a desire to create a pedestrian friendly campus, which preserves green space and provides areas for outdoor classrooms. This will involve limiting personal vehicles to the periphery of campus and utilizing park-and-ride locations where possible. Therefore, to accommodate growth in the student body, emphasis will be placed on providing transportation services to students to reduce the need for students to bring cars to campus. This will reduce traffic congestion on campus, allow use of valuable acreage for educational purposes, and contain the costs of building and maintaining expensive parking structures.

The 1990 Campus Master Plan states that WKU's transit program should be "viewed not only as connecting parking to the campus, but also connecting off-campus activities with on-campus activities." This applies to transporting on-campus students to off-campus employment, shopping, and entertainment venues as well as transporting off-campus students or citizens to campus to attend classes, lectures, performances, or exhibits. By accepting a FTA 5309 grant to improve the transit program, WKU is required to accept the general public on its routes. WKU will work closely with GO bg Transit to ensure the services provided by one complements services provided by the other for the betterment of Bowling Green and WKU.

BICYCLE AND PEDESTRIAN FACILITIES

Warren County adopted a Greenbelt Master Plan in 1999 that provided guidance for the development of more than twenty miles of greenways throughout Warren County. The Greenways Commission of Bowling Green and Warren County was created in 2001 by joint action of the City and County governments. In 2014, the Greenways Commission updated the

original Greenbelt Master Plan by adopting the Greenways Master Plan 2014, which will be referenced throughout this section of the MTP. The primary goal of the new plan is to improve connectivity between existing greenway trails and to continue to provide safe and convenient bicycle and pedestrian trails between schools, work, recreation areas, neighborhoods, natural areas and other daily destinations. Within Bowling Green and Warren County, the bikeways are composed of three elements: shared roadways (bicycle and motorized vehicles share the roadways), bicycle lanes (a part of the roadway), and bicycle paths (separated trails from the roadway). The total mileage of designated bicycle lanes or streets with “Share the Road” signs is currently not available. **Figure 4.9** at the end of this chapter shows the location of greenway and bicycle facilities and **Figure 4.10** displays the existing sidewalks throughout Bowling Green.

In 2006, the City of Bowling Green, in partnership with the Greenways Commission, Operation Pride and the Bowling Green League of Bicyclists, produced a “Bicycle Bowling Green” brochure with a map showing a bicyclist comfort level rating as well as tips for bicycle safety. The Bicycle Bowling Green map is an update of the 1978 Bicycle Facilities Plan for Bowling Green, which mapped two types of bike routes: residential routes for specific neighborhoods, and recreational routes along some of the suburban and rural roads. The 2006 map connected the 1978 routes into a network and evaluated three factors when rating the safety for each route - lane width, traffic volume, and speed limit. Other additional factors evaluated included the condition of pavement, the presence of edge line markings, the presence of on-street parking, and the percentage of heavy vehicles. It was stated that the map will serve as a guide for future installation of bike route signs and/or edge line marking. The map was intended to be a starting point for improving the conditions for bicycling in Bowling Green and recommended that the routes continue to be evaluated by the bicycling community and public.

Since the 2006 map was completed, City of Bowling Green bicycle designations have been made on a case by case basis. For example, portions of Chestnut Street and Scottsville Road have been striped with a bicycle lane. The City has also worked with WKU to design a greenway/bike route from WKU to the Bowling Green Parks & Recreation facility on East 3rd Avenue. As of June 2015, the WKU portion of this route has been completed with the city portion awaiting completion.

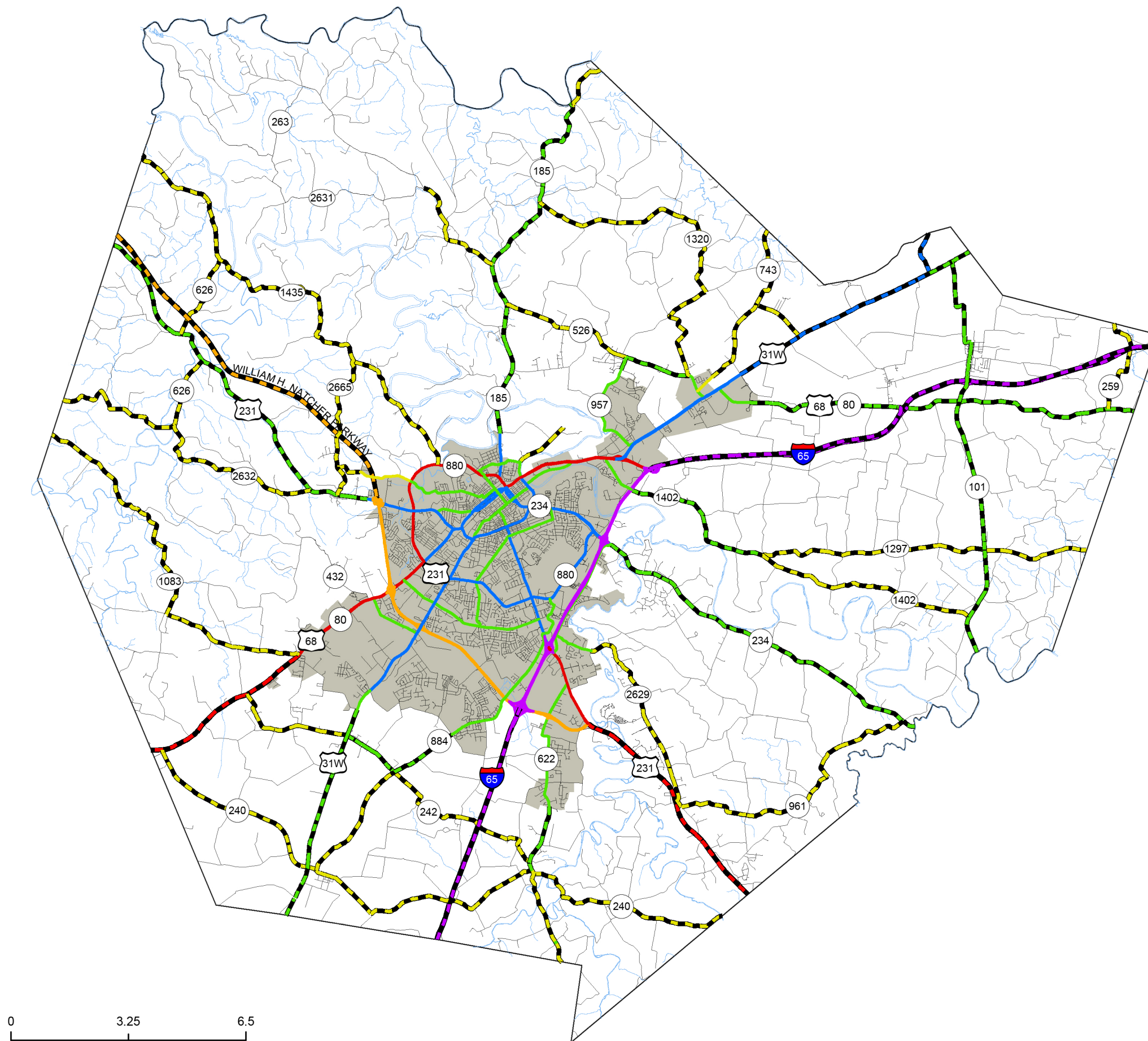
Existing sidewalks are a key element of the Greenways system in that they provide safe connections and links between greenways and neighborhoods, schools, parks and other destinations. In 2007, the City of Bowling Green established a sidewalk program for both residential and commercial areas to coordinate identification, selection, design, funding sources and construction management for new sidewalk projects. Bowling Green Public Works has established a collaborative program made up of city staff, other public agencies, such as utility companies and neighborhood associations, who work together to develop a more “walkable” city. Since 2012, the city’s Sidewalk Construction Program has created 8.4 miles of new sidewalks, with an additional 4 miles pending construction.

New sidewalks are primarily built in conjunction with reconstruction of existing roadways or new roadway projects. The City of Bowling Green allocates \$100,000 annually from its Liquid Fuel Tax funds to the sidewalk maintenance and repair program. However, because of the backlog of existing unserviceable sidewalks and those that are not ADA compliant, these funds have been directed to exclusively upgrade existing sidewalk facilities to bring them into ADA compliance.

In 2006, the Safe Routes to School (SRTS) program resulted in new sidewalks and other initiatives to encourage elementary students to walk to school. Although there is no federal or state funding for the SRTS currently, the program continues to provide excellent guidance on how to provide opportunities for students to walk or ride to school as well as information on public health, the environment, and traffic congestion. In Bowling Green, the program resulted in valuable infrastructure that the Greenways can connect to in the future.

The Warren County Subdivision Regulations require sidewalks on both sides of the street along arterial roads and major and minor collectors; on both sides of the street on certain roads in residential subdivisions connected to sewers and on both sides of the street in commercial developments. Although sidewalks are not required in the Warren County Subdivision Regulations in residential subdivisions that are on septic systems, new developments often have binding elements requiring sidewalks on at least one side of the street. Typically, state roadways extending outside the urbanized area do not include sidewalks.

Figure 4.1 Warren County Highway Functional Classifications



Classification

- Urban Interstate
- Rural Interstate
- Urban Expressway
- Rural Expressway
- Urban Principal Arterial
- Rural Principal Arterial
- Urban Minor Arterial
- Rural Minor Arterial
- Urban Major Collector
- Rural Major Collector
- Urban Minor Collector
- Rural Minor Collector
- Other Roads
- Rivers and Streams
- Urbanized Area

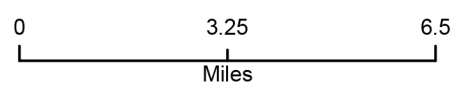


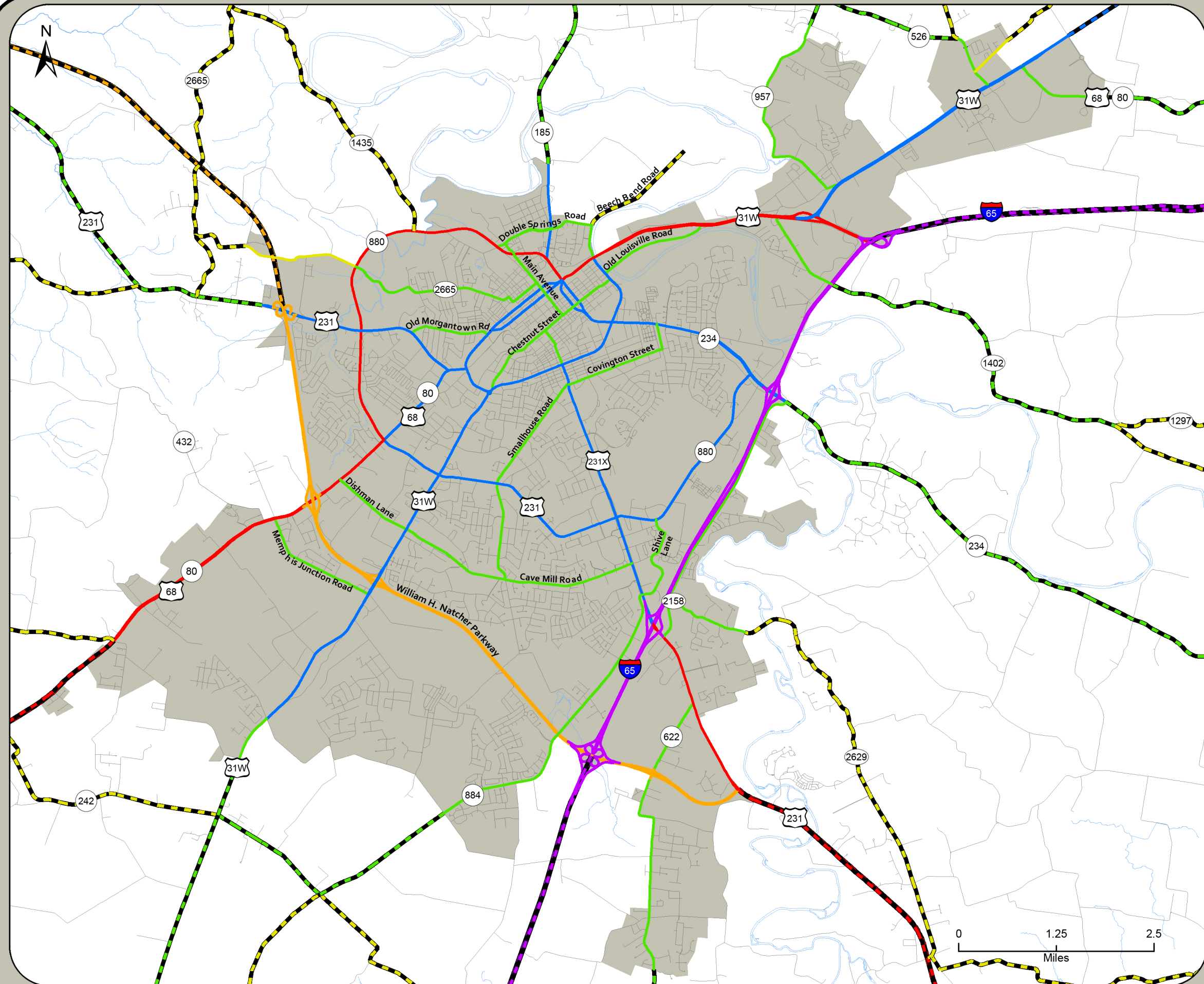
Figure 4.2

Bowling Green

Highway

Functional

Classifications



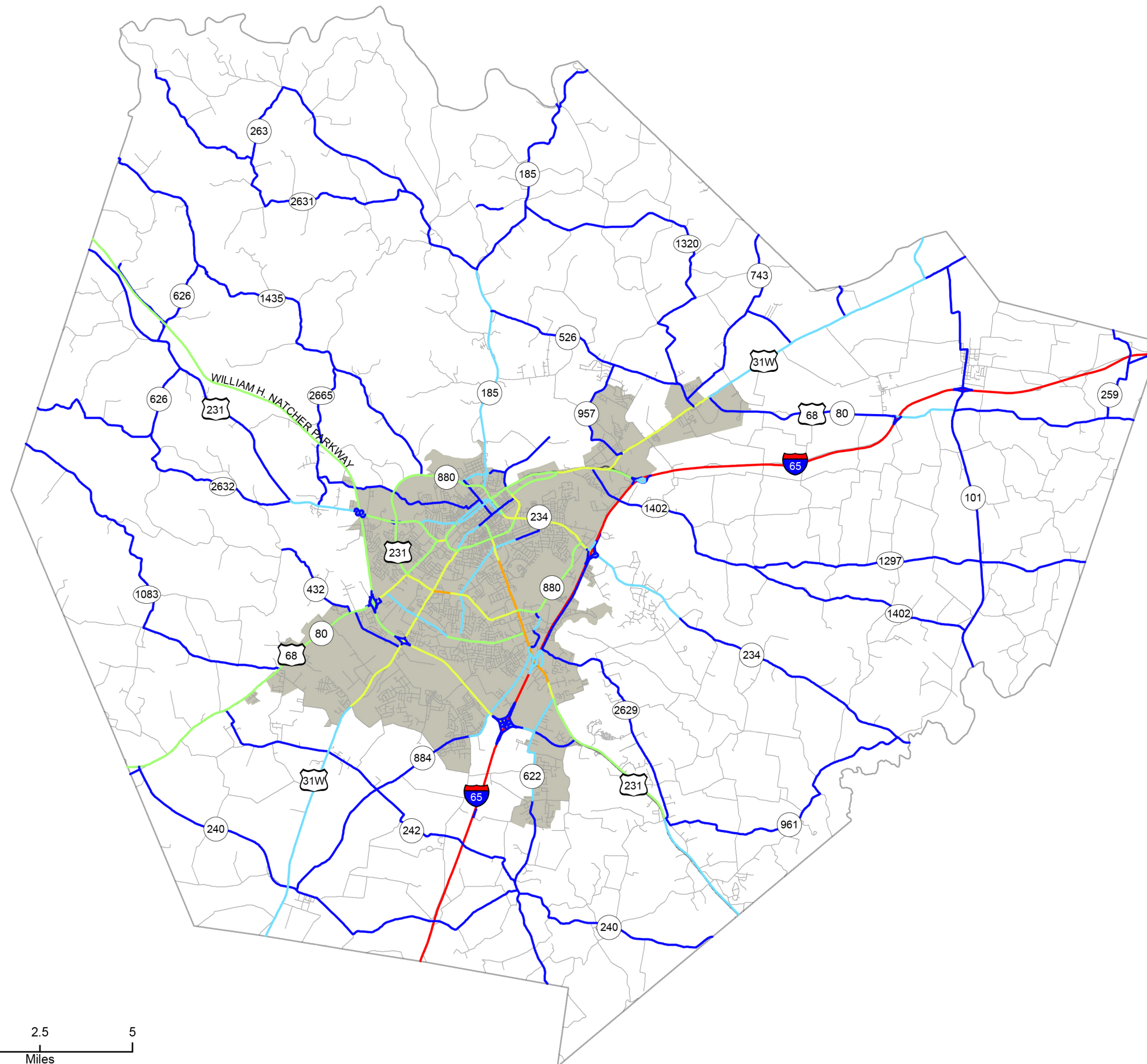
Classification

- Urban Interstate
- Rural Interstate
- Urban Expressway
- Rural Expressway
- Urban Principal Arterial
- Rural Principal Arterial
- Urban Minor Arterial
- Rural Minor Arterial
- Urban Major Collector
- Rural Major Collector
- Urban Minor Collector
- Rural Minor Collector
- Other Roads
- Rivers and Streams
- Urbanized Area



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Figure 4.3
Warren County
Average Daily Traffic



0 2.5 5
Miles



Figure 4.4

 Average Daily Traffic

 BG-WC Urbanized Area

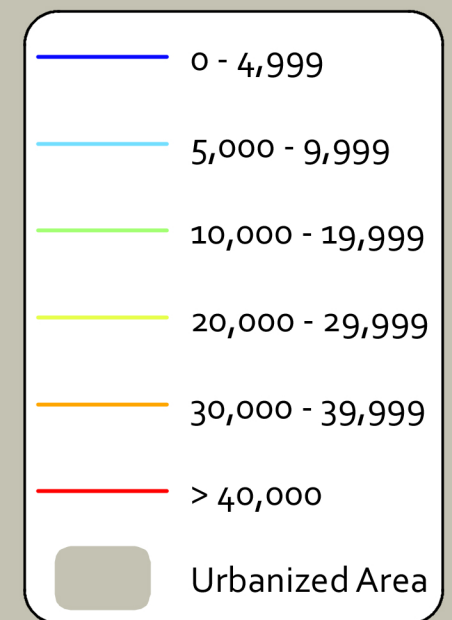
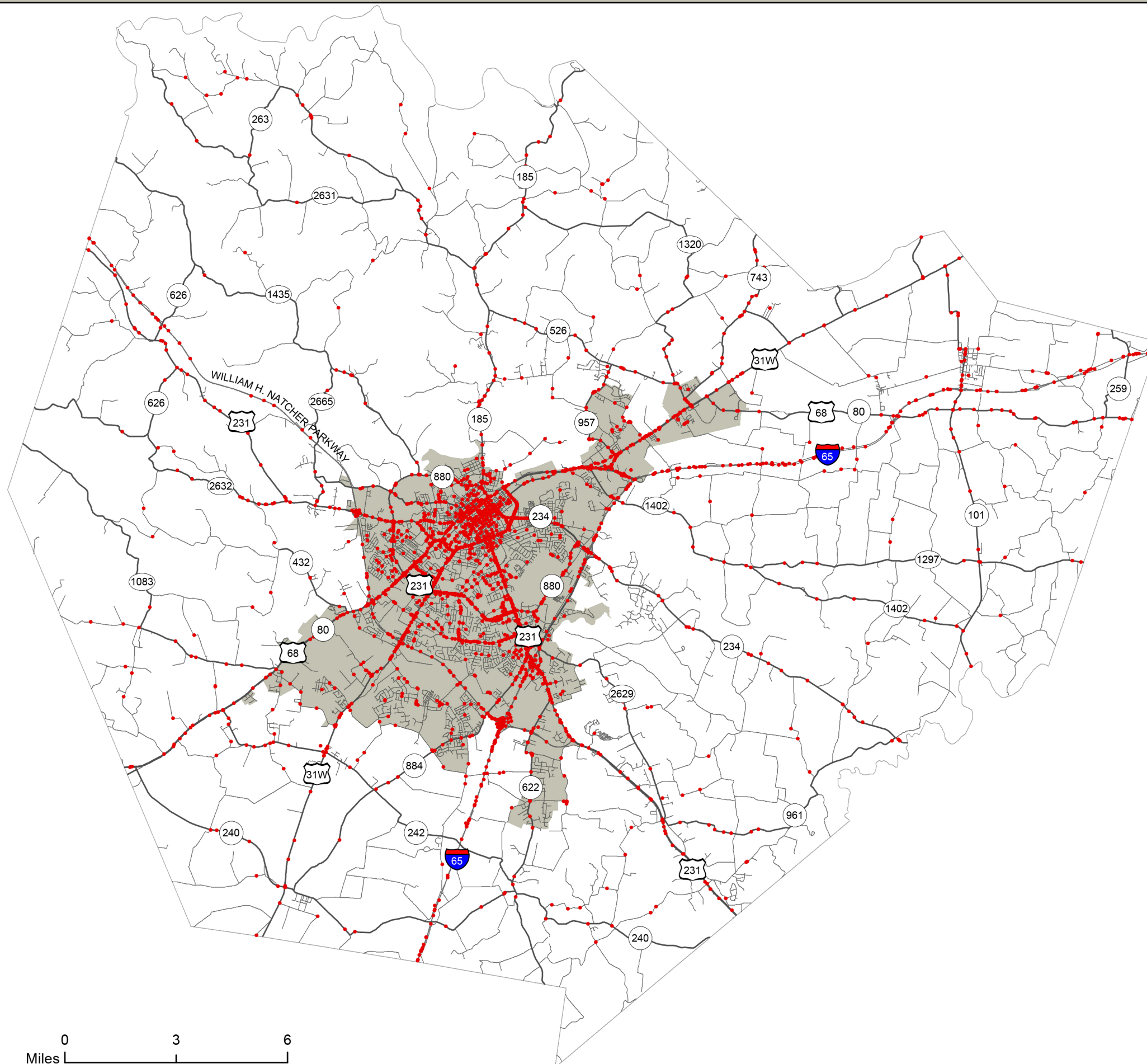


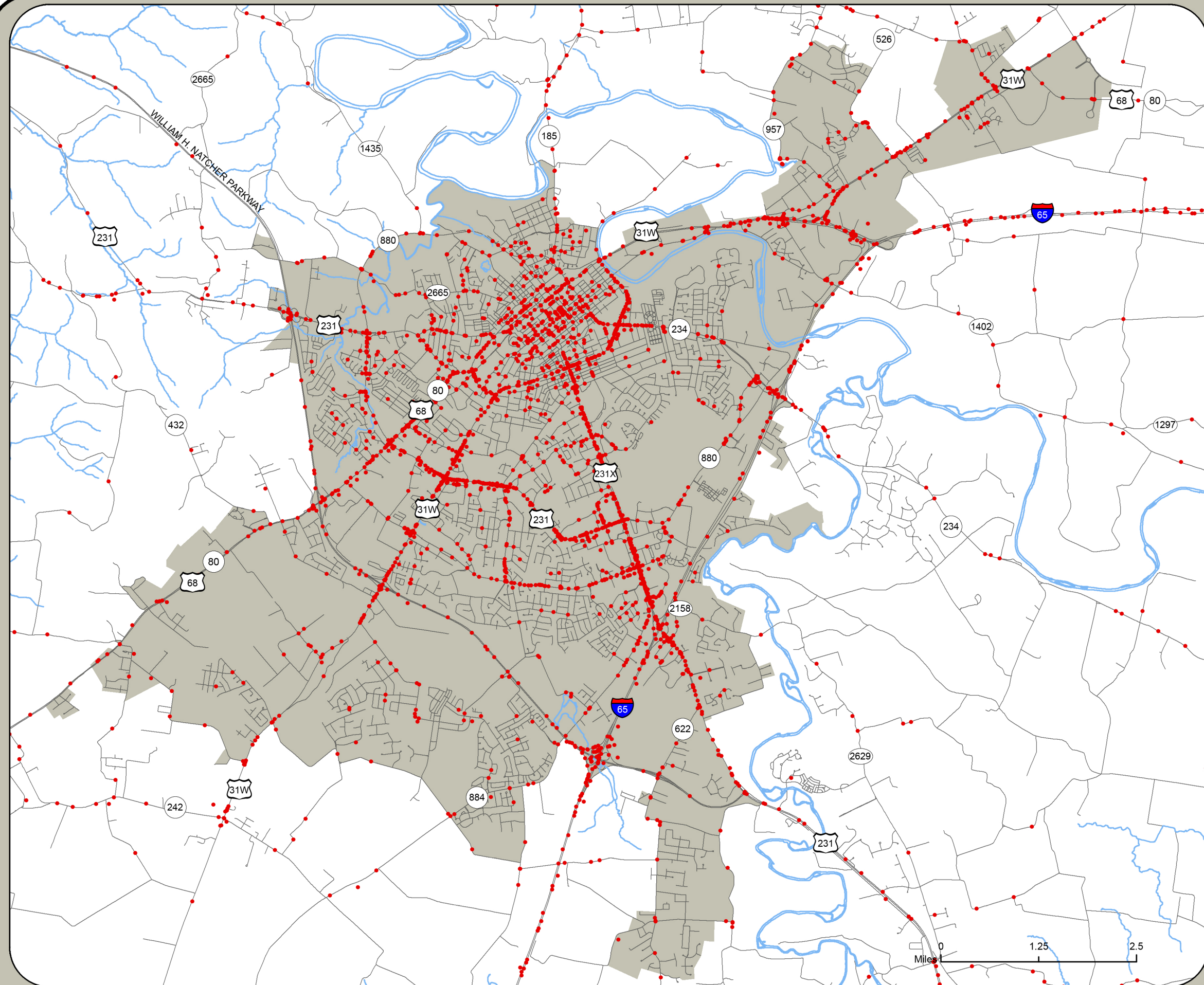
Figure 4.5

Warren County Crash Sites (2014)



The user understands that the entities which comprise the City - County Planning Commission of Warren County make no representations to the accuracy of the information in the mapping data or images contained on this map, but rather, provide said information as is. The user knowingly waives any and all claims for damages against any and all of the entities comprising the City-County Planning Commission of Warren County that might arise from the mapping data. This is not a legal document!

Figure 4.6 Bowling Green Crash Sites (2014)

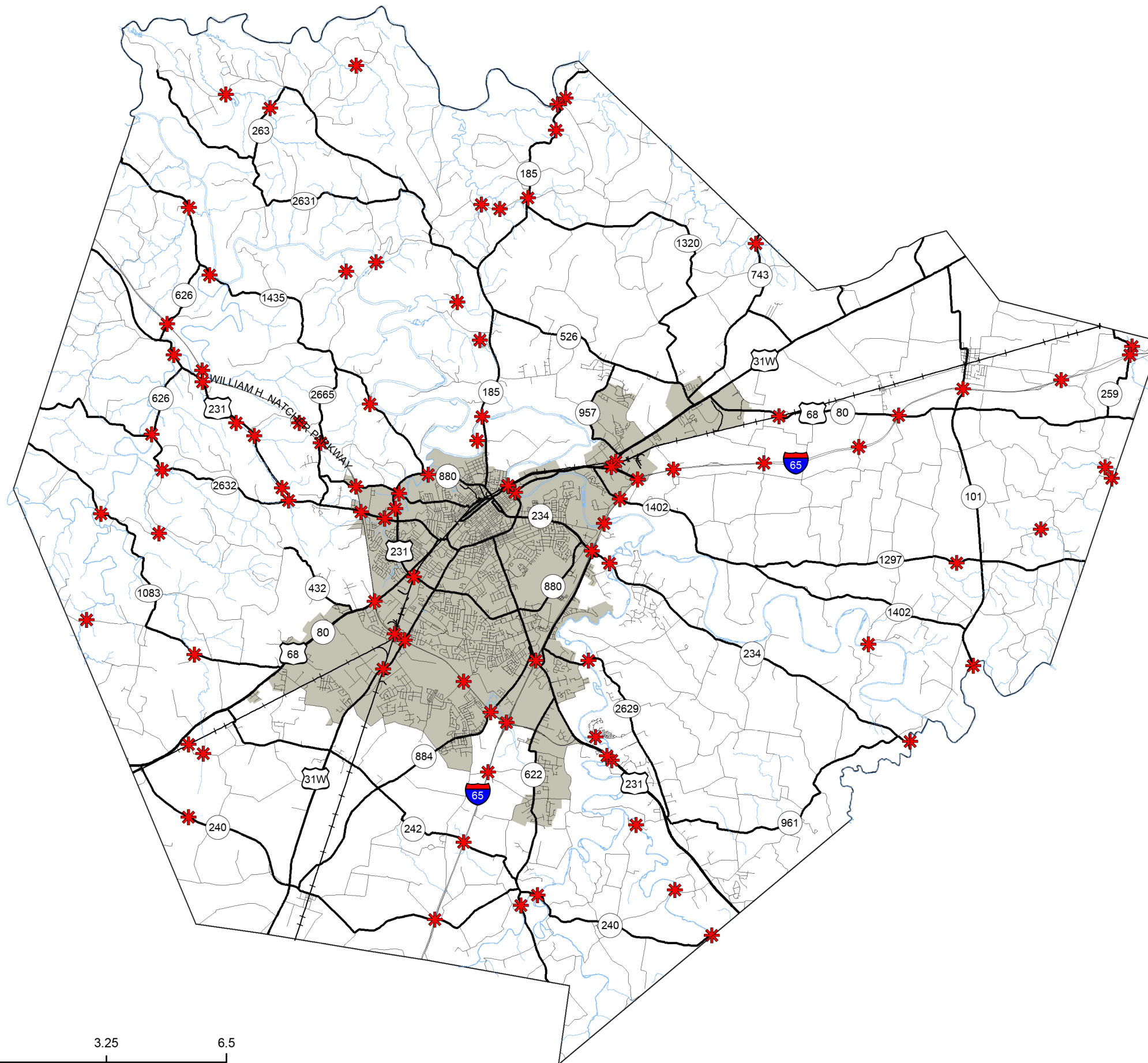


- Crash Site
- Rivers and Streams
- Roads
- Urbanized Area



0 1.25 2.5
Miles

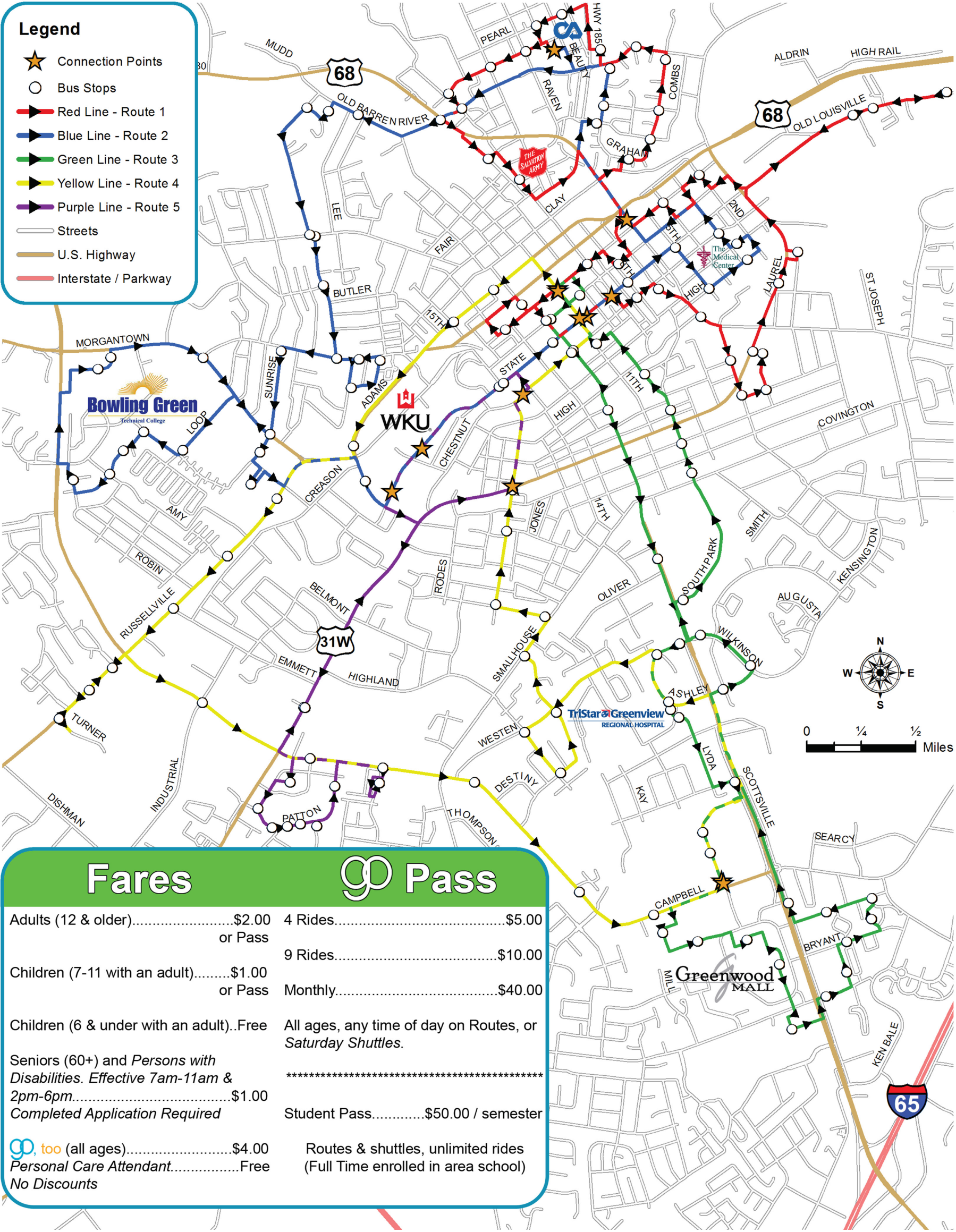
Figure 4.7 Warren County Bridge Locations



- Bridge Location
- Rivers and Streams
- Federal & State Roads
- Local Roads
- Railroad
- Urbanized Area



Figure 4.8
Bowling Green-Warren County
GO bg Transit System Routes



GO Pass

Figure 4.9
Bowling Green-
Warren County
Greenways

- ★ Trailhead
- Existing Trails
- - - Common Bike Routes
- - - Proposed Trails
- Roads
- Rivers and Streams
- Recreation Areas
- Schools
- Urbanized Area



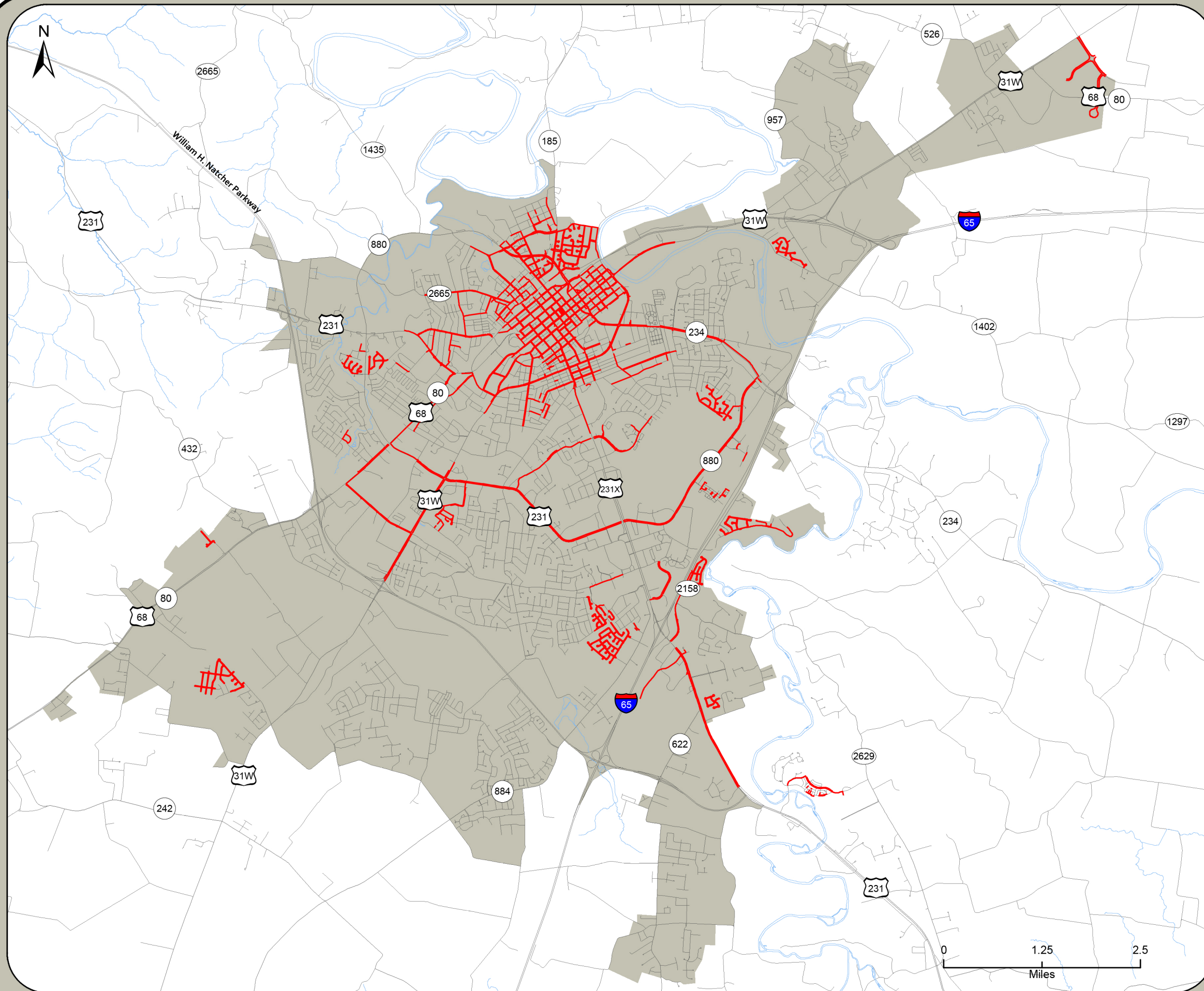


Figure 4.10
Bowling Green
Sidewalk
Locations

- Sidewalk Locations
- Rivers and Streams
- Roads
- Urbanized Area



CHAPTER 5

TRANSPORTATION NEEDS

HIGHWAY NEEDS

When planning for the future transportation projects of the Bowling Green-Warren County MPO area, an overview of elements have been reviewed and used for the development of the highway projects, as listed later in this chapter. The review process took into account many factors, including the MPO goals and objectives (as listed in **Chapter 1**), the current Kentucky Transportation Cabinet (KYTC) Highway Plan, the need and development for highway improvements, past transportation studies conducted by KYTC, citizen input, ranking of transportation projects, and the selection process of recommended projects for the 2040 Metropolitan Transportation Plan (MTP).

A. KYTC HIGHWAY PLAN

The Kentucky General Assembly requires the KYTC to prepare and submit for its approval a Highway Plan on a biennial basis. The Highway Plan is the official document of the KYTC addressing major highway improvement project phases scheduled for the next six years. Funding for these project phases are projected within the six year time of the Plan. **Table 5.1** and **Figure 5.1** on the following pages identify the 2014 Highway Plan projects for the Bowling Green-Warren County MPO.

B. PROJECTED TRANSPORTATION DEMAND

The MTP is required to provide an assessment of the projected transportation demand over its twenty-five year planning period. To address this requirement and to assist with project specific traffic forecasts, a newly rendered Bowling Green-Warren County travel demand model (BGWC TDM) was initiated. The previous models were founded on the 2000 Bowling Green Transportation Plan and predated the Bowling Green-Warren County MPO designation. Still running in a DOS era MinuTP platform, the second model completed in 2004 utilized 2000 Census data along with socioeconomic inventories provided by the Bowling Green Chamber of Commerce and estimated conditions for a 2030 future year synthesis. The next BGWC TDM completed in 2008 converted the model to a map-like graphical output using TransCAD. This model incorporated ESRI styled centerline roadways and traffic analysis zones (TAZ's) to visually display results. This update effort extended the forecast horizon to 2040 and included intermediate modeled forecast years for 2010, 2020, and 2030. To create the previous MTP's target year of 2035, an intermediate year was created from the 2030 and 2040 scenarios.

The most up-to-date model has been completely restructured and now includes all seven surrounding counties. According to 2010 Census data, as many as 30% of Warren County workers live outside Warren County and 30% of workers who live in Warren County commute to other counties. Therefore, the model better captures work trips that cross county boundaries. Other enhancements include the ability to study AM and PM traffic patterns when congestion most often occurs. Like the previous model, a typical weekday is simulated. Finally, truck trips are now uniquely generated as a separate type of trip. This allows the model to better simulate the impact of trucks on general traffic flow. More details can be found in the June 2015 report titled "Bowling Green-Warren County Regional Travel Demand Model, Model Development Report".

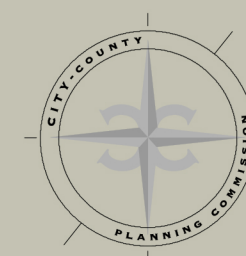
TABLE 5.1
BOWLING GREEN-WARREN COUNTY METROPOLITAN TRANSPORTATION PLAN
KYTC 2014-2020 Highway Plan Projects (Incomplete Funding)

Item No.	Route	Length	Project	Fund Type	Year	Phase	Phase Cost
03-16.04	I-65	-	Surfacing for I-65 to US-31W Connector including grade and drain on US-68 and US-31W.	IM	2016	C	\$18,000,000
03-109	KY-101	2.700	Reconstruct KY-101 from Smiths Grove north to US-31W.	SP	2014	R	\$3,310,000
03-109	KY-101	2.700	Reconstruct KY-101 from Smiths Grove north to US-31W.	SP	2014	U	\$1,410,000
03-109	KY-101	2.700	Reconstruct KY-101 from Smiths Grove north to US-31W.	SP	2016	C	\$12,670,000
03-110	KY-185	5.600	Reconstruct Ky-185 from north of the junction with KY-263 near Richardsville (MP 6.29) to the Butler County line (MP 11.913).	SPP	2016	U	\$2,540,000
03-110	KY-185	5.600	Reconstruct Ky-185 from north of the junction with KY-263 near Richardsville (MP 6.29) to the Butler County line (MP 11.913).	SPP	2018	C	\$26,810,000
03-199	US-31W	2.600	Widen to 5 lanes from 1.0 mile south of KY-242 (MP 4.1) to Dillard Rd (MP 6.7).	SPP	2017	C	\$11,250,000
03-202	WN-9007	0.200	Reconstruct the existing Natcher Parkway/US-231 interchange on west side of Bowling Green.	NH	2017	D	\$1,000,000
03-202	WN-9007	0.200	Reconstruct the existing Natcher Parkway/US-231 interchange on west side of Bowling Green.	NH	2018	R	\$700,000
03-202	WN-9007	0.200	Reconstruct the existing Natcher Parkway/US-231 interchange on west side of Bowling Green.	NH	2019	U	\$1,500,000
03-202	WN-9007	0.200	Reconstruct the existing Natcher Parkway/US-231 interchange on west side of Bowling Green.	NH	2020	C	\$5,000,000
03-1077	KY-234	0.060	Replace bridge on KY-234 over Drakes Creek 0.097 east of Shaker Mill Rd (CR-1121).	BRO	2018	C	\$5,850,000
03-1090	CR-1425	0.015	Replace bridge over branch of Indian Creek on Lodge Hall Rd (CR-1425) 1.4 mile west of KY-185.	BRZ	2015	D	\$250,000
03-1090	CR-1425	0.015	Replace bridge over branch of Indian Creek on Lodge Hall Rd (CR-1425) 1.4 mile west of KY-185.	BRZ	2016	R	\$50,000
03-1090	CR-1425	0.015	Replace bridge over branch of Indian Creek on Lodge Hall Rd (CR-1425) 1.4 mile west of KY-185.	BRZ	2016	U	\$75,000
03-1090	CR-1425	0.015	Replace bridge over branch of Indian Creek on Lodge Hall Rd (CR-1425) 1.4 mile west of KY-185.	BRZ	2016	C	\$260,000
03-8702	US-231	0.100	Widen and expand US-231 from Lover's Lane to Three Springs Road.	SPP	2015	U	\$2,000,000
03-8702	US-231	0.100	Widen and expand US-231 from Lover's Lane to Three Springs Road.	SPP	2016	C	\$5,000,000
03-8707	WN-9007	0.600	Construct a new interchange on the Natcher Parkway at Elrod Road in Bowling Green (MP 3.4 - MP 4.0).	NH	2015	D	\$800,000
03-8707	WN-9007	0.600	Construct a new interchange on the Natcher Parkway at Elrod Road in Bowling Green (MP 3.4 - MP 4.0).	NH	2017	R	\$2,000,000
03-8707	WN-9007	0.600	Construct a new interchange on the Natcher Parkway at Elrod Road in Bowling Green (MP 3.4 - MP 4.0).	NH	2017	U	\$950,000
03-8707	WN-9007	0.600	Construct a new interchange on the Natcher Parkway at Elrod Road in Bowling Green (MP 3.4 - MP 4.0).	NH	2019	C	\$6,300,000
03-8818	KY-884	1.320	Three Springs Road extension from Flealand to the Natcher Parkway including bridge over parkway (see project 3-8851).	SPP	2015	R	\$4,000,000
03-8818	KY-884	1.320	Three Springs Road extension from Flealand to the Natcher Parkway including bridge over parkway (see project 3-8851).	SPP	2016	U	\$2,800,000
03-8818	KY-884	1.320	Three Springs Road extension from Flealand to the Natcher Parkway including bridge over parkway (see project 3-8851).	SPP	2017	C	\$6,700,000
03-8852	KY-884	1.922	Reconstruct KY-884 from Long Road to the Natcher Parkway (MP 5.516 to MP 7.438) including a bridge over the Natcher Parkway.	SPP	2017	R	\$1,000,000
03-8852	KY-884	1.922	Reconstruct KY-884 from Long Road to the Natcher Parkway (MP 5.516 to MP 7.438) including a bridge over the Natcher Parkway.	SPP	2018	U	\$2,000,000
03-8852	KY-884	1.922	Reconstruct KY-884 from Long Road to the Natcher Parkway (MP 5.516 to MP 7.438) including a bridge over the Natcher Parkway.	SPP	2019	C	\$5,300,000
03-8853	US-31W	2.794	Minor widening (2+1 concept) from south of the KY-240 intersection north to Buchanan Park (MP 1.464 to MP 4.258).	SPP	2018	R	\$1,800,000
03-8853	US-31W	2.794	Minor widening (2+1 concept) from south of the KY-240 intersection north to Buchanan Park (MP 1.464 to MP 4.258).	SPP	2019	U	\$2,000,000
03-8853	US-31W	2.794	Minor widening (2+1 concept) from south of the KY-240 intersection north to Buchanan Park (MP 1.464 to MP 4.258).	SPP	2020	C	\$13,500,000
03-8854	KY-234	1.747	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road (MP 7.878 to MP 9.625).	SP	2017	D	\$750,000
03-8854	KY-234	1.747	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road (MP 7.878 to MP 9.625).	SP	2018	R	\$2,000,000
03-8854	KY-234	1.747	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road (MP 7.878 to MP 9.625).	SP	2019	U	\$2,500,000
03-8854	KY-234	1.747	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road (MP 7.878 to MP 9.625).	SP	2020	C	\$5,500,000
03-8857	US-31W	1.238	Major widening/reconstruction from Campbell Lane (US-231) to University Blvd (US-231X) (MP 10.561 to MP 11.688).	SP	2017	D	\$800,000
03-8857	US-31W	1.238	Major widening/reconstruction from Campbell Lane (US-231) to University Blvd (US-231X) (MP 10.561 to MP 11.688).	SP	2019	R	\$1,750,000
03-8857	US-31W	1.238	Major widening/reconstruction from Campbell Lane (US-231) to University Blvd (US-231X) (MP 10.561 to MP 11.688).	SP	2020	U	\$2,000,000
03-8857	US-31W	1.238	Major widening/reconstruction from Campbell Lane (US-231) to University Blvd (US-231X) (MP 10.561 to MP 11.688).	SP	2020	C	\$4,250,000
03-8858	CS-1540	0.032	Extend Shive Lane to Lover's Lane (KY-880) in Bowling Green.	SP	2017	D	\$139,000
03-8858	CS-1540	0.032	Extend Shive Lane to Lover's Lane (KY-880) in Bowling Green.	SP	2018	R	\$324,000
03-8858	CS-1540	0.032	Extend Shive Lane to Lover's Lane (KY-880) in Bowling Green.	SP	2018	U	\$434,000
03-8858	CS-1540	0.032	Extend Shive Lane to Lover's Lane (KY-880) in Bowling Green.	SP	2019	C	\$2,923,000
03-9007	KY-526	0.100	Intersection improvements at the intersection of KY-526 and KY-1320; purchase ROW for sight distance improvements on KY-526 from 0.046 mile west of KY-1320 to 0.099 mile west of CR-1532A.	SAF	2014	R	\$70,000
03-9007	KY-526	0.100	Intersection improvements at the intersection of KY-526 and KY-1320; purchase ROW for sight distance improvements on KY-526 from 0.046 mile west of KY-1320 to 0.099 mile west of CR-1532A.	SAF	2014	U	\$140,000
03-9007	KY-526	0.100	Intersection improvements at the intersection of KY-526 and KY-1320; purchase ROW for sight distance improvements on KY-526 from 0.046 mile west of KY-1320 to 0.099 mile west of CR-1532A.	SAF	2014	C	\$220,000
							\$170,625,000



Project Item #

3-16.04	3-8853
3-109	3-8854
3-110	3-8857
3-199	3-8858
3-202	3-9007
3-1077	Urbanized Area
3-1090	
3-8702	
3-8707	
3-8818	
3-8852	



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Using the new traffic model, transportation demand, in terms of vehicle miles travelled (VMT), is expected to increase by approximately 33% between 2015 and 2040. The estimated daily VMT throughout Warren County was approximately 3.9 million in 2015. By 2040, travel is forecasted to split 52-48% between urban and rural areas, with approximately 30% of total VMT occurring on I-65. By 2040, daily VMT in Warren County is expected to increase to over 5.2 million vehicle miles or at a 1.2% annual growth rate.

The BGWC TDM also produces estimates of vehicle hours of travel (VHT), which is an estimate of the total time required for all trips during a given day. The model forecasts that VHT will increase by 30% between 2015 and 2040.

The fact that VHT is forecasted to increase is an indication that overall traffic congestion will worsen over this period. This forecasted growth in travel demand and increase in congestion demonstrate the importance of investing in the transportation system in the Bowling Green-Warren County area. The projects identified in this plan will have a significant impact on meeting this travel demand. Although travel by other modes (transit, bicycle, pedestrian, etc.) is not accounted for by the BGWC TDM, it is evident that strategies to increase the role of other transportation modes in servicing this demand will be critical to maintaining acceptable levels of mobility throughout the area.

C. TRANSPORTATION NEED, IDENTIFICATION AND PROJECT SELECTION

The KYTC solicits local jurisdiction input regarding transportation needs every two years. The MPO Policy Committee (PC) and Technical Advisory Committee (TAC) identify transportation project needs through the development and ranking of a list of potential projects for funding and scheduling consideration within the Kentucky Highway Plan. All potential projects are compiled on the KYTC's Unscheduled Needs List (UNL) displaying project descriptions and cost estimates as shown in the 65 projects listed in **Table 5.2**. With the information provided from the UNL in conjunction with Technical Review Scores established by the KYTC, the MPO PC and TAC prioritized the projects to submit to the KYTC for their consideration.

Transportation projects generated by the PC and TAC are used by the KYTC in the Statewide Transportation Improvement Program (updated every five years) and the Highway Plan (updated bi-annually). The MPO's UNL for Bowling Green-Warren County, citizen suggestions, and the recommendations of the previously discussed studies and reports are then used to establish a list of prioritized projects.

D. MPO PROJECT SELECTION

PROJECT PRIORITIZATION METHODOLOGY

The Bowling Green-Warren County MPO staff created a methodological approach to guide the prioritization of the UNL projects in conjunction with the Technical Review Scores implemented by the KYTC for each project. The process was initiated by the TAC ranking each project as high, medium, low, or inactive (where inactive refers to projects a member deems as unnecessary). The MPO's seven transportation goals, as listed in **Chapter 1**, created the foundation for this initial ranking, along with each member's general knowledge and understanding of the transportation corridors in the MPO area. Once the scores of high, medium, low, and inactive were recorded, MPO staff assigned weights to generate an overall score out of 100 (weights were determined by number of respondents that participated in the ranking).

TABLE 5.2 BOWLING GREEN-WARREN COUNTY METROPOLITAN TRANSPORTATION PLAN Unscheduled Needs List (UNL)					
Route	Control #	BMP	EMP	Project Description	Cost Estimate
NEW	03 114 A0065 17.00	17.000	17.100	Construct new interchange on I-65 at KY 242.	\$11,100,000
I-65	03 114 A0065 35.00	35.500	35.600	Reconstruction of I-65 at US 68 to include a full interchange.	\$7,100,000
I-65	03 114 A0065 52.00	14.797	14.897	Construct new interchange at KY 240.	\$10,600,000
I-66	03 114 A0066 1.00	0.000	0.000	To provide a freeway connection from the L. B. Nunn Parkway to the William H. Natcher Parkway.	\$485,000,000
US-31W	03 114 B0031 1459.0 (03 114 B0031W 63.10)	10.561	11.688	Major widening/reconstruction from Campbell Lane (US-231) to University Boulevard (US-231X).	\$8,800,000
US-31W	03 114 B0031W 1.00	13.000	13.100	Improve the safety and capacity on US-31W at the intersection of 10th Avenue.	\$1,575,000
US-31W	03 114 B0031W 10.00	12.789	12.834	Reconstruct the US 31W intersection with Broadway to accommodate left-turn lanes on each approach.	\$3,300,000
US-31W	03 114 B0031W 11.00	10.900	11.000	Realign the intersections with US 31W at Highland Way and Emmett Avenue.	\$2,550,000
US-31W	03 114 B0031W 14.00	14.382	14.452	Reconfigure the US 31W (Riverview Drive) intersection with State Street / Old Louisville Road (KY 3225) to accommodate two-way traffic on State Street	\$500,000
US-31W	03 114 B0031W 15.00	16.121	17.088	Reconstruct US 31W (Louisville Road) to include curb, gutter, sidewalk and/or greenways connection, street lights, storm sewer/drainage and landscaping.	\$7,050,000
US-31W	03 114 B0031W 16.00	16.559	18.085	Reconstruct US 31W from Old Porter Pike (MP 16.559) to KY 957 (MP 18.085) including the reconstruction of the interchange with KY 446.	\$32,000,000
US-31W	03 114 B0031W 64.00	11.805	13.699	Laurel Avenue - Major widening from University Blvd to Fairview Ave (KY234) in Bowling Green.	\$9,800,000
US-31W	03 114 B0031W 66.00	13.699	14.670	Major widening with urban section from Fairview Avenue (KY 234) to US 68 in Bowling Green, including improving safety at the intersection of US 31W and KY 234.	\$14,100,000
US-31W	03 114 B0031W 67.00	18.085	20.905	Provide bicycle and pedestrian facilities in order to improve the safety on US 31W between KY 957 and US 68	\$3,300,000
US-31W	03 114 B0031W 68.00	20.905	28.793	Widen US 31W through Warren, Edmonson, & Barren Counties from US 68 East in Warren County to KY 101 in Barren County to reduce travel time, improve safety, increase accessibility, and foster economic development.	\$94,000,000
US-31W	03 114 B0031W 69.00	21.148	22.490	Accommodate increased traffic from the residential and industrial development north of Bowling Green along the section of US 31W from US 68 (MP 21.148) to Mizpah Road (MP 22.49).	\$4,861,000
US-68	03 114 B0068 10.00	10.816	14.771	Reconstruct US 68 (Veterans Memorial Ln) to include curb, gutter, sidewalk, greenways connection, street lights, storm sewer/drainage and landscaping.	\$5,900,000
US-68X	03 114 B0068 62.00	0.000	1.524	Reduce the congestion and improve safety on this section of US 68X from US 231/KY880 to US 231X (University Boulevard).	\$15,000,000
US-68	03 114 B0068 64.00	15.649	20.640	Improve safety and reduce travel time on US 68.	\$16,000,000
US-68X	03 114 B0068X 1.00	2.000	2.300	Improve safety along US 68X by relocating the US 68X (Kentucky St/Adams St) split near Old Morgantown Rd, as well as widen Adams St to accommodate a five lane section and convert Adams Street and Kentucky Street to two-way streets.	\$22,700,000
US-68X	03 114 B0068X 2.00	1.524	1.626	Widen southbound US 68X to accommodate two through lanes and a right-turn lane.	\$2,000,000
US-231	03 114 B0231 10.00	10.674	10.684	Improve safety at the intersection of Gary Farms Blvd and the Greenwood Mall Access Road.	\$625,000
US-231	03 114 B0231 57.00	16.303	18.258	Improve safety and reduce travel time on this section of roadway between William H. Natcher Parkway and KY-2632.	\$16,200,000
US-231	03 114 B0231 60.00	23.156	23.356	Improve the safety of the intersection at US 231 & KY 626 (west).	\$600,000
US-231	03 114 B0231 62.00	24.243	24.443	Improve the safety of the intersection at US 231-KY 626	\$600,000
US-231	03 114 B0231 7.00	7.885	10.455	Implement major access modifications along this section of US 231.	\$44,950,000
US-231X	03 114 B0231X 1.00	0.000	1.313	Implement major access modifications along this section of US 231X.	\$32,850,000
US-231X	03 114 B0231X 2.00	2.445	2.526	Widen northbound US 231X to accommodate two through lanes and a left-turn lane.	\$2,000,000
US-231X	03 114 B0231X 56.10	0.000	2.066	Reduce the congestion and improve the safety on this section of US 231X.	\$11,250,000
US-231X	03 114 B0231X 56.20	2.507	3.899	Improve mobility and accessibility, increase safety, and improve conditions for expansion of business on US 231X between US 68 and US 231/KY 880.	\$6,550,000
I-65	03 114 C0000 1.00	0.000	0.000	Extend the new I-65 Connector from its intersection with US 31W, north toward Girkin Boiling Springs Road to accommodate major development possibilities north of Bowling Green.	\$24,000,000
NEW	03 114 C0000 54.00	0.000	0.000	A new route around the eastern edge of Bowling Green has been proposed to address the existing and future congestion along the internal street network of the city, to improve connections among that network, and access to all parts of the city.	\$250,000,000
NEW	03 114 C0000 56.00	0.000	2.000	Southwest Parkway - New Construction from US 68 to US 31W SW of Bowling Green including installation of a bridge at the intersection with the R.J. Corman Railroad. See 2000 Bowling Green transportation plan.	\$26,600,000
NEW	03 114 C0000 58.00	0.000	1.395	Provide a secondary connection from US 31W to Beech Bend Park to improve access and mobility; ensure the safety and security of the visitors; and to maintain the economic viability of this attraction continues.	\$7,600,000
KY-101	03 114 D0101 1.00	0.000	7.865	Improve the safety and reduce travel time on KY 101 between the Allen County Line and I-65.	\$32,800,000
KY-234	03 114 D0234 1.00	6.000	6.300	Improve safety on KY-234 at Pleasant Hill Road Intersection.	\$785,000
KY-234	03 114 D0234 1532.0 (03 114 D0234 74.80)	7.878	9.625	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road.	\$10,750,000
KY-234	03 114 D0234 74.00	0.000	9.749	Improve the safety and reduce the travel time on this section of KY-234 between Drakes Creek and the Allen County Line.	\$45,000,000
KY-240	03 114 D0240 9.00	5.470	10.048	This project would be to reconstruct KY-240 to accommodate increased travel from US-31W in Woodburn to the proposed interchange with I-65.	\$30,500,000
KY-242	03 114 D0242 10.00	5.033	5.233	Improve the safety and capacity of the intersection at KY-242 and KY-884.	\$500,000
KY-242	03 114 D0242 3.00	3.463	5.133	Improve safety and mobility on KY-242 from the intersection with US-31W (MP 3.463) to the intersection with KY-884 (MP 5.133). This project would address narrow lanes and shoulder widths as well vertical alignment issues.	\$4,350,000
KY-263	03 114 D0263 1.00	0.000	12.579	Improve KY-263 to KY-185 to reduce travel time and to provide a new connection across the Barren River from northern to northwestern Warren and southern Butler counties.	\$64,100,000
KY-526	03 114 D0526 10.00	0.000	2.803	Improve safety and reduce the travel time on KY-526 from KY-185 to the eastern intersection of Garrett Hollow Road.	\$10,420,000
KY-526	03 114 D0526 11.00	2.803	3.793	Improve the safety and reduce travel time on KY-526 from the eastern intersection of Garrett Hollow Road to KY-957.	\$4,400,000
KY-526	03 114 D0526 12.00	3.793	5.646	Improve the safety and reduce the travel time on KY-526 between KY-957 to KY-1320.	\$6,240,000
KY-622	03 114 D0622 3.00	3.518	5.262	Widen KY-622 between Dye Ford Rd and Larmon Mill Rd/Plano-Richpond Rd.	\$7,950,000
KY-622	03 114 D0622 73.00	2.786	2.986	Improve the safety of the intersection at KY-622 and KY-242.	\$235,000
KY-622	03 114 D0622 76.00	5.262	8.332	Reconstruct and widen KY-622 from Plano-Richpond Road to US-231.	\$21,200,000

Route	Control #	BMP	EMP	Project Description	Cost Estimate
KY-622	03 114 D0622 76.50	6.454	6.895	Improve the safety and reduce travel time on KY-622 from 0.1 mile south of Collett Road to Dewey Lake Road.	\$2,000,000
KY-884	03 114 D0884 1.00	3.616	5.516	Improve safety and mobility on KY-884 from the intersection with KY-242 to the intersection with Long Road.	\$5,650,000
KY-957	03 114 D0957 1.00	0.000	1.420	Improve safety and provide a facility for pedestrians on KY 957 from US 31W to Redbird Trail.	\$4,500,000
KY-957	03 114 D0957 2.00	1.416	3.331	Improve the safety and reduce the travel time on KY 957 from Red Bird Trail to KY 526.	\$8,910,000
KY-1402	03 114 D1402 1.00	0.000	1.423	Widen KY-1402 (Porter Pike) from US-31W to Grimes Road, including realigning Parker Avenue to the adjacent shopping center entrance.	\$9,800,000
KY-1402	03 114 D1402 3.00	3.300	3.500	KY-1402 is a two lane facility with horizontal and vertical curves. This project addresses the horizontal and vertical curve alignment issues on this segment of roadway and will improve safety in the area of the intersection with Bethel Lane.	\$1,250,000
KY-1435	03 114 D1435 1.00	0.000	14.039	Improve KY-1435 from US-231 to the proposed KY-263 bridge connector in Warren and Butler Counties.	\$17,600,000
KY-2158	03 114 D2158 1.00	0.000	0.500	Improve the connection and mobility to US-231 by connecting KY-2158 to Cherry Farm Lane.	\$4,950,000
KY-2629	03 114 D2629 1.00	5.995	6.536	Improve the safety and reduce travel time on KY-2629 (Old Scottsville Road) from KY-2158 (Cumberland Trace Road) to Blue Springs Drive.	\$3,100,000
KY-2632	03 114 D2632 10.00	4.110	5.057	Improve the safety of KY-2632 from Whitestone Quarry Road to US-231 and the KY-2632/US-231 intersection.	\$3,400,000
KY-2665	03 114 D2665 10.00	0.000	5.635	Improve the rural connection which has horizontal and vertical alignment issues from US-68 (Veterans Memorial Blvd) to KY-1435 (Barren River Road).	\$17,800,000
KY-2665	03 114 D2665 11.00	5.635	8.123	Improve the urban connection from US-68 to Main Street in Downtown Bowling Green.	\$14,100,000
WN-9007	03 114 D9007 1.00	15.022	15.122	Improve access on William H. Natcher Parkway at KY-626 for western Warren County and eastern Butler County.	\$20,000,000
WN-9007	03 114 D9007 2.00	2.079	20.246	Improve Safety and Mobility along this section of the William H. Natcher Parkway in Warren County to address interstate highway standard (I-65/I-66/I-69 Spur Study 2014).	\$3,300,000
NEW	03 114 E9999 2.00 (03 114 C0000 60.00)	0.000	0.428	Improve the mobility and safety of Beech Bend Road, to allow better access for pedestrians and vehicles to a major tourist attraction and other points in the area.	\$11,500,000
CS-1334	03 114 E9999 3.00 (03 114 C0000 61.00)	0.656	3.227	Improve mobility and reduce the number of crashes on Smallhouse Road (CS-1334/CR-1235) from Scottsville Road (US-231X) to Cave Mill Road (CS-1401).	\$23,800,000
CS-1540	03 114 E9999 988.00 (03 114 E9999 1.00)	0.600	0.632	Extend Shive Lane to KY-880 (Lover's Lane) in Bowling Green.	\$3,820,000

The KYTC released a Technical Review Score for each project listed on the UNL. The Technical Review Score was calculated using a variety of factors including safety, volume/capacity, average daily trips, freight, horizontal curves, lane width, shoulder width, number of lanes, median type, availability, opportunity, readiness, and air quality attainment. Under this scoring technique, each project was given a score of 0-100, with 100 reflecting the greatest need for improvement.

Electronic and paper spreadsheets listing the TAC Score and the KYTC Technical Review Score, Description/Purpose Statement, Needs Statement, Cost Estimates, and Total Crashes (2014), with Fatalities and Injuries listed, were then distributed to each TAC member. With the information provided in this spreadsheet, TAC members were requested to review and rank their top 20 projects in order of importance (1 being the most important, 20 being the least important). MPO staff then compiled a spreadsheet representing the top 20 ranked projects from each member's response. An average was then configured in order to determine a Final TAC Ranking, which gave a final prioritization of the top 20 UNL projects for the Bowling Green-Warren County MPO. (See **Appendix B** for questions and scoring details for each project). Upon the TAC's recommendation, the PC made a final revision to the top 20 projects for submission to the KYTC.

Each of the state maintained projects had its own Project Identification File (PIF) and cost estimate developed by the KYTC. Projects were then placed in descending order by score, and cumulative project costs were compared to financial constraint targets (see **Chapter 7**) to determine the priority ranking of projects and placement within the sequential five-year intervals that make up the long range planning period.

E. TRADITIONAL APPROACH FOR IMPROVING SYSTEM OPERATION

Arterials, as a critical component of the roadway system, account for about 70% of vehicle miles traveled within the MPO area. Arterials will become more congested, less effective, and more hazardous as the area becomes more developed. The addition of curb cuts (driveways) and cross streets may result in the need for more traffic signals. Every signalized intersection reduces arterial capacity. The reduction in capacity may be 50% or more where signals are frequent and poorly spaced.

In addition to mobility issues, intersections and access points also increase the potential for crashes. More than half of all crashes typically occur at intersections. Improving the mobility and reducing the number of conflicts can increase the safety along the arterials in the system and therefore improve total system operation.

The traditional approach for improving system operation focuses on moving traffic efficiently through a specified corridor via traffic signal coordination. This approach also includes the addition of turn lanes at intersections, the removal of on-street parking, and access management. Traditional operational improvements are especially effective on increasing the mobility of arterials such as Scottsville Road (US 231), Nashville Road (US 31W), or Campbell Lane (US 231).

On corridors where curb cuts, cross streets, and traffic signals are already in place, such as Scottsville Road (US 231) and Nashville Road (US 31W), traditional operational improvements can mitigate traffic problems. On highways where development is pending or just beginning, such as Veterans Memorial Lane, road capacity can be preserved and mobility problems mitigated by access management.

Access management controls the design and operation of driveway and street connections onto a highway. For major roadways in developing areas, access management is fundamental for minimizing curb cuts and signalization in order to preserve travel capacity and functional integrity. For major roadways in developed areas, access management is sometimes suitable for addressing new access points or retrofitting existing roadways.

MULTI-MODAL TRANSPORTATION NEEDS

A. AVIATION

An update of the 1998 Bowling Green-Warren County Regional Airport Master Plan forecasted future regional aviation needs and identified the facility improvements necessary to meet the growing demand of the Bowling Green-Warren County regional area. The three stages below list the goals and objectives the airport seeks to implement by the year 2030.

Stage One (2015-2020)

- Runway Gradient Correction
- Remove and Relocate Existing Tee Hangar
- Perimeter Fence Improvements
- Rehabilitation of Airport Signs
- Construct 80 x 80 Corporate Hangar
- New FBO Facility
- Seal Coat of Runway 12/30
- Commercial/Industrial Lovers Lane Development
- Overlay Old Parking Ramp with Asphalt
- Vehicle Parking Expansion
- Overlay & Strengthen Taxiway "A"

Stage Two (2021-2025)

- Land Acquisition – Runway 3OFA, RSA, and Approach
- Runway 03 Safety Area Improvements
- Runway 3OFA, RSA, and Approach
- Partial Parallel Taxiway for 12-30
- Construct 18 T-Hangar Units
- Construct 100' x 100' Hangar
- Construct Partial Parallel Taxiway for 03-21
- Install PAPIs on Runway 12-30
- Construct Two 4-Bay Stall Hangars

Stage Three (2026-2030)

- T-Hangar Access Taxiway
- Construct Air Cargo Facility
- Air Traffic Control Tower
- Construct 6-Unit T-Hangar and 5-Bay Stall Hangar
- Construct Hanger Access Taxiway
- Construct Two Corporate Hangars with Apron
- Construct 120' x 150' Corporate/Maintenance Hangar
- Construct Apron for Corporate Hangar Complex
- Construct Corporate Hangar

B. TRANSIT

GO bg Transit System

The MPO's 2040 MTP seeks to address the unique service constraints and needs of the community by implementing objectives based upon the following themes, as developed from the initial public demand in 1992 for a public transit system:

- Provide accessibility to basic community services and activities for persons without transportation choices, whether due to age, economic status, physical limitations, legal restrictions, or other circumstances.
- Provide public transportation services that complement existing services rather than duplicate other publicly funded services or compete unfairly with private for-profit services.
- Provide all members of the community the choice of public transportation services within a designated area where such services are economically feasible and meet needs.

In keeping with these initial themes, a set of objectives identifying specific action agendas were developed. Objectives of the MTP for transit purposes include:

- Provide service to areas with sufficient density (typically four dwelling units per acre or higher) to support fixed route public transit.
- Provide demand-responsive service to remaining portions of the urbanized area where the need exists and where economically feasible.
- Continue specialized services to people with disabilities who cannot utilize fixed route service, improving efficiencies by use of software-based scheduling and adding equipment and features to new vehicles that improve the service options for such individuals.
- Encourage coordination and cooperation among service providers (GO bg, WKU's student transit system, other public providers, and private services) to provide optimum integrated services for all members of the community.
- Consider shuttle service within the WKU/downtown/Medical Center corridor.
- In cooperation with local land use planning officials, encourage via public policy and public-private coordination, the establishment of a transit-oriented zone within the city that fosters "New Urbanism" development that provides density levels sufficient for higher levels of transit service.
- Transit planning should be included in the early stages of infrastructure planning on particular roads.
- Add transit stop and transfer station facilities at high demand locations. As new technology becomes available at affordable prices, incorporate real-time information via wireless internet at transit stops or transfer locations and within the transit vehicles themselves (for the drivers and/or the passengers).
- At key locations consider, in cooperation with state and local highway officials, design techniques and traffic control technologies which provide advantages to transit services (managed lanes, signal-preemption, etc.)
- Based on economic feasibility, expand weekday service hours as well as service on the weekends.
- Where sufficient demand develops, increase frequency of service, capacity of vehicles, and accessibility of vehicles for persons with various types and extent of physical restrictions or limitations, and ride quality.
- Continue to improve the maintenance program and consider use of practical alternative energy sources.

Recommended Projects, Programs, and Actions

Projects, programs, and actions recommended for the fulfillment of the public transportation goals and objectives are listed for the next twenty-five years by five-year increments. The actual schedule of implementation is dependent on many factors, including available funding, changing needs, the status of other community projects such as the downtown redevelopment, and evolving technology. The routes mentioned in the plan are very general and may include short segments of only 30 minutes in length, services that occur only for selected hours of the day, or transportation services targeting job access, educational access, or other specific needs. The possibility exists that multiple transfer hubs could develop (such as the Greenwood Mall area or the WKU South Campus Complex) rather than a single transfer point in the central portion of the city.

The recommended projects, programs, and actions by time period may be accomplished by multiple service providers and funded by a combination of federal, state, local, and private funds. Revenue development in terms of fares, advertisement, sponsorship, and other methods is not addressed in the MTP but will be a part of the on-going management of the program by the service providers. Likewise, specific coordination, scheduling, and locations of service are beyond the scope of a long range transportation plan. The MTP provides a framework for public transportation expansion, but the particulars of that development will require additional planning and study.

FY 2016-2020

- Continue to conduct studies for additional route(s) and add as part of a realignment study.
- Continue to coordinate with City Public Works, Greenways, and KYTC for improved ADA access at bus stops.
- Continue to coordinate with City Public Works for improved vehicle maintenance equipment at the city's maintenance facility.
- Continue to promote coordination between GO bg transit and WKU's transit system at both the main and south campus locations. In cooperation with GO bg transit, WKU, KYTC, and others, conduct a study of a potential park-and-ride lot(s).
- Continue early morning service and expand as needed.
- Continue to install public transit stop shelters as needed.
- Study the possibility of public transit transfer stations in alternative locations such as Greenwood Mall area and WKU South Campus area and implement such transfer locations as feasible.
- Study the potential of expanding weekend and evening service. Continue working with local bicycling advocacy groups to improve access and facilities on transit.
- Continue working with community groups and organizations to meet transit needs.
- Replace aging vehicles as needed.
- Expand fleet as needed.

FY2021-2040

- Continue to work with advisory committee to determine best ways to meet transit riders' needs.
- Conduct a route expansion study and add route(s), frequency, or realignment if justified and feasible.
- Add real-time arrival information to existing and future transit shelters, transfer locations, and in vehicles, as technology, costs, and funding permit.
- Study development of demand-responsive service in areas of city with lower densities

- with connections to the fixed route system available at key shelter or transfer locations.
- Continue adding public transit stop shelters as needed.
- Add permanent transfer stations where appropriate and feasible.
- Study the feasibility of GO bg adding a work trip shuttle to nearby locales and of the need for additional local match to operate the shuttle service.
- Continue to work with the bike community to develop access and facilities for bikers.
- Continue to advance accessibility to transit by acquiring new bus technology as it becomes available and is feasible.
- Increase service frequencies on high demand routes, if justified.
- Expand weekend, early morning, and evening service on appropriate routes, if justified by study.
- Expand demand-response service and connections with fixed route services if feasible.
- In cooperation with the KYTC, consider transit options within managed lane programs on US 231 (Scottsville Road) and other corridors, as appropriate.
- Implement transit options related to managed lanes and other ITS operations within community as feasible.
- Conduct study on neighborhood shuttle systems within “New Urbanism” neighborhoods that integrate with core transit system.
- Replace aging vehicles as needed.
- Expand fleet as needed.

Western Kentucky University Transit System

With WKU’s desire to create a pedestrian friendly campus and with the growing enrollment rates at the University, the WKU transit system is on the move to create an innovative transportation system. As WKU’s transit program develops, it will employ the following transit improvement strategies:

FY 2016-2021

- Assess options to accommodate clockwise bus traffic around campus. Install bus pull-off lanes and shelters as needed.
- Expand use of bio-diesel fuel for bus fleet.
- Evaluate accessibility of bus stops and make improvements as necessary. Install bus pull-offs and shelters at strategic route locations.
- Continue to provide service to parking areas on the north side of campus connecting new housing developments on Kentucky Street, park-and-ride facilities downtown and campus.
- Evaluate service potential to the Center for Research and Development and the Agriculture Farm.
- Work with GO bg Transit to provide fare-free service to students, faculty, and staff.
- Coordinate service to campus with GO bg transit.
- Utilize FTA Section 5309 grant to replace outdated equipment and expand transit fleet.
- Consider using different sized fleet vehicles and alternative fuels.
- Introduce real-time customer information services.

FY2021-2026

- Expand bus fleet to facilitate greater off-campus service and provide additional service to the expanding campus.
- Replace aging equipment as appropriate.
- Evaluate service routes and update as needed.
- Continue to install bus pull-offs and shelters at strategic locations.
- Provide covered parking for buses.

- Increase office space at the Parking Transportation Services building to accommodate growth of transit services and staffing.

FY2026-2040

- Replace aging equipment as needed.
- Expand fleet as needed.
- Evaluate route designs and update as needed.
- Continue to install bus pull-off lanes and shelters as needed.
- Use alternate fuel buses in fleet.
- Implement new technologies to improve management and customer service.

C. BICYCLE AND PEDESTRIAN FACILITIES

The Bowling Green-Warren County MPO is dedicated to assisting in the coordination, promotion, and development of alternate forms of transportation within the MPO area. The bicycle and pedestrian transportation systems of the MPO are intended to provide safe and convenient alternatives to motorized vehicles and to enhance the quality of life where they are located. The 2040 MTP supports the vision of providing a safe and convenient opportunity for people to walk and ride to daily destinations throughout the community. The 2014 Greenways Master Plan lays a framework for the multimodal goals and objectives the MPO seeks to achieve for this 2040 MTP.

Ongoing Activities to Achieve Multimodal Vision

- Facilitate and/or coordinate with stakeholders and partnering agencies to increase bicycle and pedestrian access to the transportation system, developing safe interconnected facilities of high quality for bicycling and walking and promoting/increasing their use.
- Assist in the analysis of bicycle/pedestrian issues pertaining to Warren County.
- Coordinate with the Bowling Green-Warren County Greenways Commission (lead agency for issues with bicycle facilities) and municipalities in applying for and securing funding, and ensuring that greenways projects are included in the TIP.
- Respond to public requests for bicycle and pedestrian information.
- Review and provide input on new development proposals to ensure bicycle and pedestrian circulation and connectivity with land use activity areas and the transportation network.
- Promote and ensure ADA compliance in all pedestrian design activities.
- Coordinate with the Greenways Commission and other stakeholders for public education and promotion efforts to increase awareness and safety related to bicycling and walking including media interviews/advertising, community presentations, events, brochures, websites, and social media.
- Coordinate bicycle/pedestrian activities with local, regional and state agencies to advance projects and outreach efforts (City/County Parks, Engineering, Traffic, Police Departments, Elected Officials, Area Development Districts, KYTC District/Central Office, Public Schools, Health Departments, etc.).
- Support the Bowling Green League of Bicyclists in their efforts to achieve a Bicycle Friendly Community designation. A Bicycle Friendly Community provides safe accommodation for cycling and encourages residents to bike for transportation and recreation.
- Develop alliances and relationships with private businesses and non-profit organizations to advance bicycle/pedestrian projects, outreach and safety (bike shops, tourism

- agencies, bicycle clubs, etc.).
- Maintain and update a project database, including GIS data, for existing and planned bicycle and pedestrian facilities.

Desired Outcomes

The following items are desired outcomes of the Multimodal Planning work element:

- Completed planning/feasibility studies for sidewalks, trails, and bicycle facilities.
- Revised roadway projects complete with adequate bicycle/pedestrian facilities.
- Notable bicycle/pedestrian facilities and connectivity.
- New and updated design and maintenance standards for bicycle/pedestrian facilities.
- Secured funding for bicycle/pedestrian projects and programs.
- GIS database and mapping of existing and planned bicycle/pedestrian facilities.
- Database of public/agency requests for bicycle/pedestrian information.
- List of media outreach/marketing efforts, presentations, events and number of people reached or in attendance.
- Up-to-date and relevant bike/pedestrian websites and social media. Data on the number of hits, members, followers, etc.
- Bicycle and pedestrian projects and language within required planning documents including the TIP and MTP.

In conjunction to the Greenways Commission, WKU incorporated pedestrian and bicycle improvement projects and goals into their long-range transit plan. These improvements include:

FY 2016-2021

Pedestrian Improvements

- Improve pedestrian circulation on Western's campus by widening sidewalks along Alumni Drive and Hilltop Drive. This will require the removal of on-street parking along these drives.
- Continue to work with the City of Bowling Green to enhance pedestrian crosswalks in the area bounded by Alumni Avenue, Chestnut Street, Regents Avenue, and Normal Street/State Street, including the addition of sidewalks where needed on State Street and Normal Street.
- Continue to work with the Kentucky Transportation Cabinet to enhance pedestrian crosswalks on University Boulevard and Kentucky Street.

Bicycle Improvements

- Work with the WKU biking community to develop a Bicycle Facility Plan, which identifies and prioritizes bicycle facility needs to include bike paths to and on campus as well as bike racks and other accommodations.
- A federal earmark of \$950,000 has funded the design and construction of the WKU-Community Bikeway Project with emphasis on the corridor between Avenue of Champions and Center Street. The WKU portion, which connects Creason Street to Center Street, is complete; the city portion awaits construction.
- On annual basis, implement the Bicycle Facility Plan. Install at least 40 bike racks per year on campus.
- Work with the City of Bowling Green to address bike route needs beyond campus.
- Continue to develop and promote the Car Free Program on campus.

FY2021-2026

Pedestrian Improvements

- Evaluate areas with pedestrian / vehicle conflicts and make improvements as needed. Areas of concern will include College of Education, College of Business, Greek Village and Ogden College.

Bicycle Improvements

- Evaluate progress on implementing Bicycle Facility Plan. Update and continue implementing plan as needed.
- Install at least 40 bike racks each year.
- Seek funding for continued expansion of bicycle facilities.
- Explore demand and opportunity to install bike locker or other suitable storage facilities.
- Promote Car Free Program on campus.

FY2026-2040

Pedestrian Improvements

- Identify and mitigate pedestrian/vehicle conflicts. Work with city and state as needed to maintain pedestrian safety.
- State Street and Normal Street are a critical transit route component. It is WKU's intention that transit traffic would be allowed through this corridor if the road were closed to general traffic.

Bicycle Improvements

- Update Bike Facility Plan and implement as needed.
- Continue installing bike facilities. Ensure adequate maintenance of facilities.
- Continue installing bike facilities.

CHAPTER 6

PUBLIC PARTICIPATION PROCESS

INTRODUCTION

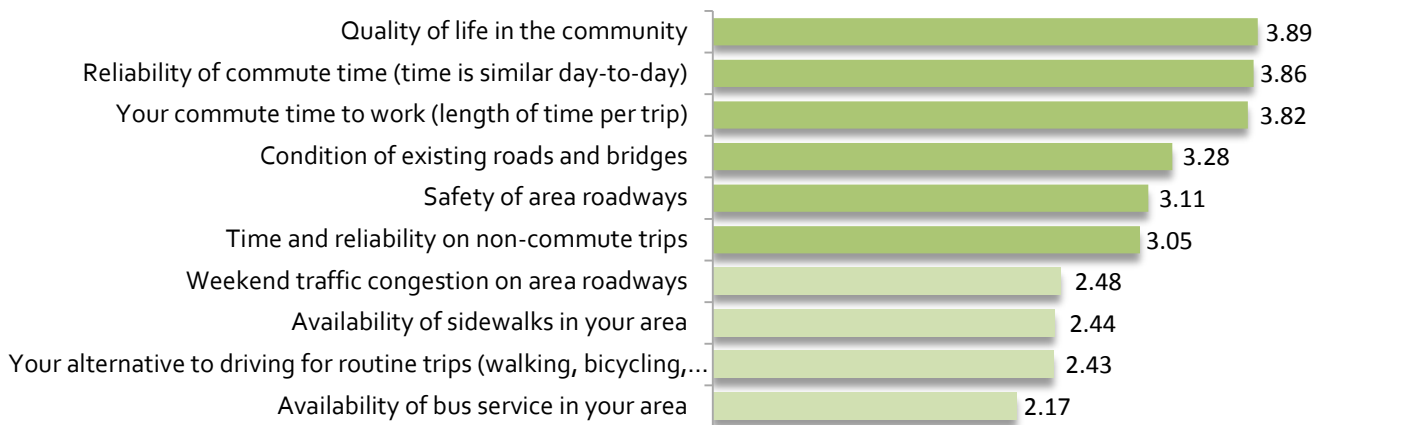
The Bowling Green-Warren County Metropolitan Planning Organization (MPO) is committed to seeking meaningful public input through offering opportunities for all interested parties to partake in the transportation planning process. The Metropolitan Transportation Plan (MTP) Goals and Objectives, as listed in **Chapter 2**, identify the foundation for implementing the comprehensive, cooperative, and continuing planning process of the MPO. In conjunction with the MTP Goals and Objectives, the goals of the 2015 Bowling Green-Warren County Participation Plan are to *invite, inform, involve, and improve*. The Participation Plan seeks to provide early and adequate opportunity for citizens and stakeholders to submit their ideas, visions, and/or expertise in the development of the MTP. The MPO values public input for the future of the transportation system in and around the Bowling Green-Warren County MPO area. In order to carry out a meaningful participation process, as outlined in the Participation Plan, the MPO conducted a transportation survey; held public meetings; released notifications via print, web, and social media; and provided time for public review.

A. TRANSPORTATION SURVEY

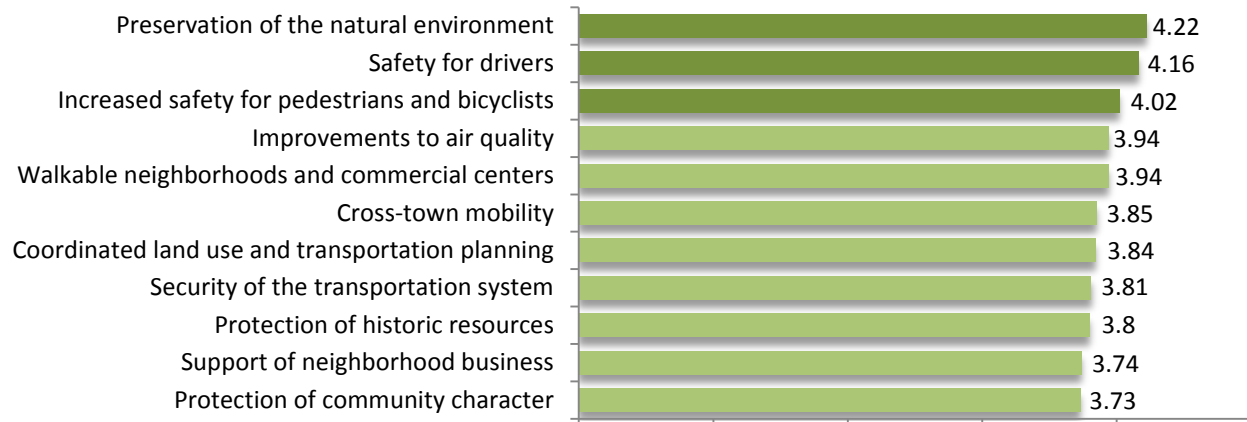
In order to engage the community in the transportation planning process and to gauge the opinion of the public, the MPO distributed a public survey relating to the current issues and future needs of the transportation system. The goal of the survey was to capture the public's thoughts on a variety of transportation system issues such as personal transportation, community quality of life, and transportation improvement strategies. The survey was also available for download from the MPO website and on the Survey Monkey website for electronic completion and submittal. In addition, the survey was available in hard copy form at Community Action of Southern Kentucky, on all GO by Transit routes, and distributed via email to Western Kentucky University faculty and staff. A brief description and a notification of the availability of the survey was provided in the Bowling Green Daily News, as part of an advertisement for the first 2040 MTP Public Meeting.

The MPO received a total of 294 responses to the survey questionnaire. Survey responses indicate concern and interest in all transportation related modes. The first part of the survey asked respondents to rate various issues or concerns on a scale of 1 to 5, as shown in the graphs below.

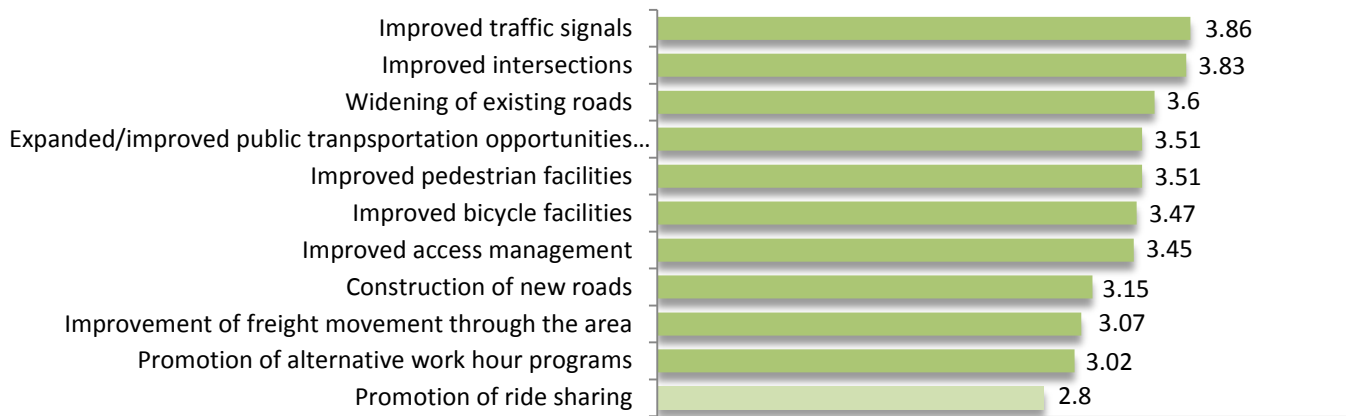
Q1: Please rate the following personal transportation issues on a scale of 1 to 5
(1 = unimportant; 5 = most important). Answered: 294 Skipped: 0



Q2: Please rate the following community quality of life issues on a scale of 1 to 5 (1 = unimportant; 5 = most important). Answered: 273 Skipped: 21



Q3: Please rate the following transportation improvement strategies on a scale of 1 to 5 (1 = least effective; 5 = most effective). Answered: 255 Skipped: 39



Respondents were then asked a series of open ended questions, with the request to rank their top three priorities in order of importance. Of the 246 responses to Question 4, the top priorities of highway-related problem locations were related to Scottsville Road, Nashville Road/US 31-W Bypass, Broadway Avenue, Campbell Lane (not including responses related to the Nashville Road intersection), other roads or intersections, and general congestion or safety. Nine responses were either unclear or did not provide a top concern. See **Table 6.1** below.

Fifty-two of the 82 responses regarding Scottsville Road were general (ex. "Scottsville Road at 5 p.m.," "Scottsville Road," "Scottsville Road in general – traffic," etc.). Nearly one-third of the Nashville Road/US 31W Bypass responses referred to the intersection with Campbell Lane. Of the 21 responses about Broadway Avenue, 20 of them referred to the intersection with US 31W Bypass. Seven out of the 15 Campbell Lane responses labeled the Smallhouse Road intersection as the top concern.

TABLE 6.1 TRANSPORTATION SURVEY: QUESTION 4 RESPONSES	
TOP PRIORITY RESPONSE	NUMBER OF RESPONSES
Scottsville Road	82
Nashville Road/US 31W Bypass	74
Broadway Avenue	21
Campbell Lane (not including responses related to the Nashville Road intersection)	15
Other Roads/Intersections	32
General Congestion/Safety/Needs of vehicles, pedestrians, bicyclists	13
Unclear/none	9
Total	246

With 241 responses to Question 5, regarding non-highway transportation concerns, public comments revealed a high demand for pedestrian and bicyclist movement throughout the community, including safe travel ways, more sidewalks, connectivity of greenways, and accommodating crosswalks. The lack of public transit availability was a predominant issue conveyed through these responses as seen in **Table 6.2**. The general consensus with non-highway-related transportation issues acknowledged a lack of accommodations, availability, and safety concerns. Of the 75 responses regarding sidewalks/greenways/pedestrian mobility, 19 mentioned safety as the top concern. Seventeen of the 58 public transportation responses commented on specific improvements for the current system. Fifteen of the 44 bike lane responses dealt with safety. Of all 241 responses, 38 specifically mentioned safety as a primary concern.

TABLE 6.2 TRANSPORTATION SURVEY: QUESTION 5 RESPONSES	
TOP PRIORITY RESPONSE	NUMBER OF RESPONSES
Sidewalks/Greenways/Pedestrian Mobility	75
Public Transportation	58
Bike Lanes	44
Other	34
None/Unclear/etc.	30
Total	241

Question 6 of the public survey asked respondents to reply with any additional feedback they may have regarding the MTP update. Prevailing the responses were expressed concerns with bicycle and pedestrian awareness, need for additional transit stops, syncing traffic signals, and success of the roundabout. Of the 108 responses, nearly 26% commented on the need for more bike lanes and pedestrian-friendly roadways. Responses varied from supporting a more walkable community and providing safe modes of transportation for commuting or recreation purposes, to widening Smallhouse Road to provide safety for cyclists and pedestrians. One respondent commented, "As a bike commuter, I have had MANY near misses with drivers merging into me, turning into me, or not looking while backing up. Having a completed greenway or bike lanes would greatly decrease the danger of bike commuting." Particular areas requesting the need for sidewalks were Bent Tree, US 31W Bypass from Campbell Lane to University Boulevard, Gordon Avenue, and Smallhouse Road.

With a considerable amount of feedback, approximately 11% of respondents communicated their desire for improved traffic signal timing. Several comments related to poor traffic flow due to the timing of signals and extended red lights, others commented on the faulty timing of pedestrian

signals downtown, while some were specific in stating the timing along US 231 (Scottsville Road) to be particularly poor.

While much feedback expressed the deficiencies of the Bowling Green-Warren County transportation system, 11 respondents stated the success of the roundabout constructed at the intersection of University Boulevard and US 31W Bypass. One individual stated, “The roundabout has been very successful. It has improved my commute time to WKU” with another individual commenting, “The roundabout has vastly improved the Business 231/US 31W connection. Good job!” Another simply responded, “More roundabouts! Seriously!” Also of notable response was a respondent expressing, “Overall, I feel that our transportation infrastructure is well thought out and well maintained. I would like to see more bike paths to make BG more bike friendly.”

B. PUBLIC MEETINGS

During the development of the 2040 MTP, the MPO provided opportunity, through public meetings, for community members and stakeholders to provide input into the development of the update process as well as review the draft MTP. Two public meetings were held, providing participants with information regarding transportation improvement projects to be included in the MTP and Transportation Improvement Program (TIP). The first meeting was held in June 2015, providing an introduction to the MTP and an outline for the planning process. MPO staff communicated with various individuals discussing the problems, concerns, and hopes for the future of the transportation system. The second public meeting, in September 2015, introduced the 2040 MTP draft update to citizens and stakeholders. MPO staff requested the public participants and stakeholders to review and comment on the document. No public or stakeholder comments were received at the public meetings.

C. NOTIFICATIONS AND CONSULTATION

The MPO Participation Plan requires that all MPO documents be available in accessible formats through the MPO’s website and that the public shall be notified through means of local media outlets of any meetings deemed necessary. It also states that the MPO shall notify the public through a legal advertisement in the Bowling Green Daily News and by a media press release one week prior to public meetings (see **Appendix C**). In addition to print notifications, the MPO utilized social media outlets to publicize opportunities for public input.

Letters and/or email correspondence were sent to local, state, and federal planning and resource agencies, as listed in the appendix of the Participation Plan, requesting their input on current and future transportation issues and improvements at the onset of the MTP update. These agencies were also notified by letter and/or email of the completed draft MTP update available for review and comment.

D. PUBLIC COMMENT AND REVIEW

Upon the completion of the draft 2040 MTP update, the MPO held a 30-day public comment and review period. The public review and comment period was made available from September 15, 2015, to October 14, 2015. In addition to the availability of this document via the MPO website, the draft 2040 MTP was available for review at the Bowling Green-Warren County MPO office, Bowling Green City Hall, Office of the Warren County Judge-Executive, and the Kentucky Transportation Cabinet – District 3. Any comments received by these agencies and/or the public are included in **Appendix C** at the end of this document and are considered when planning for the future of the transportation system.

CHAPTER 7 FINANCIAL PLAN AND PRIORITIES

INTRODUCTION

This financial plan is intended to provide policy officials with a realistic understanding of the difficulties of funding the transportation improvements needed in the Bowling Green-Warren County MPO area. It identifies the improvements that can reasonably be expected to be funded if state and federal transportation revenues continue at their present level through the planning period (2016-2040). The financial analysis also presents funding issues that must be faced by the City of Bowling Green and Warren County.

A. FINANCIAL OUTLOOK

In Kentucky, there is no distribution of allocated funds to MPO areas with a population less than 200,000. These MPOs, including Bowling Green-Warren County, must compete for project funding on a statewide basis for both urban and rural funding. For this reason, historical records of spending have been reviewed and considered in helping to estimate future funding levels for the Bowling Green-Warren County planning area.

Because Bowling Green is an urbanized area, the City of Bowling Green is offered entitlement funds from the Federal Transit Administration (FTA) through the Section 5307 program. The federal funding for public transit is matched by the City of Bowling Green. Western Kentucky University funds operational costs for WKU's transit system. The operational cost for para-transit services is funded by the appropriate local agencies. General agency funds or FTA Section 5310 program funds can be used to support para-transit capital expenses.

B. FINANCIAL CONSTRAINT ANALYSIS

A financial constraint analysis was conducted in order to illustrate, for future planning purposes, funding estimates that could reasonably be expected for the MPO's priority projects. **Table 7.1** below shows cumulative total revenue projections (in five-year increments) for 2016-2040. During the first five years (2016-2020) of this period, it is assumed that all current projects in the Kentucky Transportation Cabinet (KYTC) Highway Plan will be completed (or have programmed funding). For years 2021-2040, revenue assumptions are based on an analysis of historical expenditures for highway improvement projects. Data for past expenditures of federal and state funding were available for the 22-year period from 1993 to 2014. Amounts spent on construction projects within the Bowling Green-Warren County area ranged from a low of \$3,600,000 in 1993 to a high of \$56,800,000 in 2002, with an average spending of slightly over \$25.5 million per year. The observed variability and significant range in expenditures can be attributed to fluctuating construction activity and the costs of major projects - and particularly to the expense associated with I-65 widening projects. However, when these numbers are averaged over time, some stability can be seen in recent years. The average amount expended for highway construction over the last 10 years is \$30,357,223. The average amount expended over the last five is \$27,657,135. Additional analysis revealed that the relative percentage of statewide funding expended annually on projects within the planning area ranged from a low of 0.65% to a high of 5.44% - with an average of 2.65%. Further, the average statewide spending over the most recent five-year period is 2.16%, which is slightly lower than the 22-year average. The 22-year average percentage of statewide funding (2.65%) was assumed to be a reasonable estimate of future funding allocations for the 2021-2040 planning period. Application of this

percentage to the current statewide construction budget of approximately \$1.15 billion yields a current annual dollar amount of \$30,475,000.

As part of the financial constraint analysis, federal regulations require that all project costs be shown in Year of Expenditure (YOE) dollars. KYTC guidance was used to calculate YOE dollars, and a 4% escalation per year for both costs and revenues was utilized. To calculate YOE costs, current project costs were inflated to the midpoint of the 5-year period in which projects are scheduled. For example, the cost for a project scheduled between 2021-2025 would be increased to the mid-year 2023. The figures in the table below reflect revenue assumptions that have been estimated as described above and adjusted for YOE over the planning period.

TABLE 7.1 "FIVE-YEAR" PERIOD CUMULATIVE TOTAL REVENUES 2016-2040	
FUNDING YEARS	REVENUES
2016-2020	\$165,062,430
2021-2025	\$200,823,685
2026-2030	\$244,332,719
2031-2035	\$297,268,111
2036-2040	\$361,672,110

It is important to remember that state or federal governments cannot independently fund all roadway projects that are required to meet the present and future needs of the community. Local governments will need to increase transportation funding now and in the future to successfully address the transportation issues of the Bowling Green-Warren County MPO. Additionally, local governments must continue to seek private financial participation where transportation improvements are directly necessitated by private development projects.

Forecasted revenue assumptions do not cover the cost of all of the Bowling Green-Warren County MPO's transportation needs as reflected in the Unscheduled Needs List. This shortfall will be addressed in **Section H** (Illustrative Projects) of this chapter.

C. PROJECTS CONTAINED IN KENTUCKY HIGHWAY PLAN FY 2014 - 2020

The Bowling Green-Warren County MPO is classified as a "small" MPO. As such, it must rely on funding for federal and state projects through Kentucky's Highway Plan. **Table 7.2**, on the following page, lists these projects along with the phase and funding type for each project. The KYTC Highway Plan is revised periodically by the Kentucky Legislature. During this process, it is expected that the implementation schedules for some projects will, by necessity, be lengthened somewhat. For the purposes of the development of this MTP, it is assumed that it will take the first five years of the MTP planning period (2016-2020) to complete the projects in the current KYTC Highway Plan. The total estimated cost of these projects during the period is \$170,625,000.

D. PRIORITY TRANSPORTATION PROJECTS

The Unscheduled Needs List, presented in **Chapter 5**, and additional City of Bowling Green and Warren County projects comprise the 2016-2040 MTP Priority Transportation Projects. These

TABLE 7.2
BOWLING GREEN-WARREN COUNTY METROPOLITAN TRANSPORTATION PLAN
KYTC 2014-2020 Highway Plan Projects

Item No.	Route	Length	Project	Fund Type	Year	Phase	Phase Cost
03-16.04	I-65	-	Surfacing for I-65 to US-31W Connector including grade and drain on US-68 and US-31W.	IM	2016	C	\$18,000,000
03-109	KY-101	2.700	Reconstruct KY-101 from Smiths Grove north to US-31W.	SP	2014	R	\$3,310,000
					2014	U	\$1,410,000
					2016	C	\$12,670,000
03-110	KY-185	5.600	Reconstruct Ky-185 from north of the junction with KY-263 near Richardsville	SPP	2016	U	\$2,540,000
					2018	C	\$26,810,000
03-199	US-31W	2.600	Widen to 5 lanes from 1.0 mile south of KY-242 (MP 4.1) to Dillard Rd (MP 6.7).	SPP	2017	C	\$11,250,000
03-202	WN-9007	0.200	Reconstruct the existing Natcher Parkway/US-231 interchange on west side of Bowling Green.	NH	2017	D	\$1,000,000
					2018	R	\$700,000
					2019	U	\$1,500,000
					2020	C	\$5,000,000
03-1077	KY-234	0.060	Replace bridge on KY-234 over Drakes Creek 0.097 east of Shaker Mill Rd (CR-1121).	BRO	2018	C	\$5,850,000
03-1090	CR-1425	0.015	Replace bridge over branch of Indian Creek on Lodge Hall Rd (CR-1425) 1.4 mile west of KY-185.	BRZ	2015	D	\$250,000
					2016	R	\$50,000
					2016	U	\$75,000
					2016	C	\$260,000
03-8702	US-231	0.100	Widen and expand US-231 from Lover's Lane to Three Springs Road.	SPP	2015	U	\$2,000,000
					2016	C	\$5,000,000
03-8707	WN-9007	0.6	Construct a new interchange on the Natcher Parkway at Elrod Road in Bowling Green (MP 3.4 - MP 4.0).	NH	2015	D	\$800,000
					2017	R	\$2,000,000
					2017	U	\$950,000
					2019	C	\$6,300,000
03-8818	KY-884	1.32	Three Springs Road extension from Flealand to the Natcher Parkway including bridge over parkway (see project 3-8851).	SPP	2015	R	\$4,000,000
					2016	U	\$2,800,000
					2017	C	\$6,700,000
03-8852	KY-884	1.922	Reconstruct KY-884 from Long Road to the Natcher Parkway (MP 5.516 to MP 7.438) including a bridge over the Natcher Parkway.	SPP	2017	R	\$1,000,000
					2018	U	\$2,000,000
					2019	C	\$5,300,000
03-8853	US-31W	2.794	Minor widening (2+1 concept) from south of the KY-240 intersection north to Buchanan Park (MP 1.464 to MP 4.258).	SPP	2018	R	\$1,800,000
					2019	U	\$2,000,000
					2020	C	\$13,500,000
03-8854	KY-234	1.747	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road (MP 7.878 to MP 9.625).	SP	2017	D	\$750,000
					2018	R	\$2,000,000
					2019	U	\$2,500,000
					2020	C	\$5,500,000
03-8857	US-31W	1.238	Major widening/reconstruction from Campbell Lane (US-231) to University Blvd (US-231X) (MP 10.561 to MP 11.688).	SP	2017	D	\$800,000
					2019	R	\$1,750,000
					2020	U	\$2,000,000
					2020	C	\$4,250,000
03-8858	CS-1540	0.032	Extend Shive Lane to Lover's Lane (KY-880) in Bowling Green.	SP	2017	D	\$139,

projects were evaluated and scored based on criteria described in **Chapter 5**. Some projects were moved up or down in a five-year priority grouping based on available funding as determined by the financial analysis and the YOY dollar amounts. It is of interest to note that the financially constrained portion of the transportation plan includes a total of 42 projects for the 2021-2040 planning period not covered by the KYTC Highway Plan. As shown on the following page, **Table 7.3** lists these future projects by year and includes costs and revenue comparison.

The priorities and scheduling of highway projects reflects current conditions of the Bowling Green-Warren County MPO. Priorities and development of projects are likely to change as conditions warrant.

E. SAFETY PLAN

The Bowling Green-Warren County MPO is fully supportive of and committed to the mission, vision, goals, and strategies outlined in the KYTC's Strategic Highway Safety Plan (SHSP). The SHSP states its mission, vision, and goal as follows:

Mission: To reduce Kentucky's highway fatalities and injuries.

Vision: Through public and private partnerships, achieve the most improved and sustainable downward trend in highway fatalities and injuries in the nation.

Statewide Goal: To reduce the number of highway fatalities toward zero.

The KYTC has identified ten emphasis areas in the SHSP. These include:

- Aggressive Driving
- Commercial Motor Vehicles
- Distracted Driving
- Impaired Driving
- Incident Management
- Intersections
- Motorcycles
- Occupant Protection
- Roadway Departure
- Young Drivers

The Bowling Green-Warren County MPO fully supports these emphasis areas and considers safety a top priority in the transportation planning process. While the statewide goal is to reduce the number of fatalities toward zero, it is a constant goal of the MPO to work to reduce fatalities and injuries on roadways throughout the region.

F. TRANSPORTATION SYSTEM OPERATIONS AND MAINTENANCE

The nature of the metropolitan transportation planning process does not lend itself to specifically identifying future system operations and maintenance needs or projects over the period covered by the plan. Nevertheless, it is required that the MTP include system-level estimates of resources that are expected to be available to operate and maintain the transportation system.

Routine maintenance and operation of the state-maintained roadway network in the MPO area is accomplished by the KYTC through the Highway District Office in Bowling Green. Example activities include maintenance of pavement, guardrails, median cable barriers, drainage

TABLE 7.3
BOWLING GREEN-WARREN COUNTY METROPOLITAN TRANSPORTATION PLAN
Priority Transportation Projects

MPO RANK	PROJECT SCORE	Map #	Route #	CONTROL #	PROJECT DESCRIPTION	MILES	BMP	EMP	2016 Cost	2021-2025	2026-2030	2031-2035	2036-2040	Cumulative Total		
1	4.1875	1	US-31W	03 114 B0031 1459.0 (03 114 B0031W 63.10) & 03 114 B0031W 11.00	Major widening/reconstruction from Campbell Lane (US-231) to University Boulevard (US-231X) at Roundabout including realigning the intersections at Highland Way and Emmett Avenue	1.127	10.561	11.688	\$11,350,000	\$14,935,826				\$14,935,826		
2	6.75	2	US-31W	03 114 B0031W 66.00	Major widening with urban section on 31W Bypass from Fairview Ave to Louisville Rd (US 68).	0.971	13.699	14.670	\$14,100,000	\$18,554,638				\$33,490,464		
3	12.125	3	NEW - Southwest Pkwy	03 114 C0000 56.00	Southwest Parkway - New Construction from US 68 to US 31W SW of Bowling Green including installation of a bridge at the intersection with the R.J. Corman Railroad. See 2000 Bowling Green transportation plan.	2.000	0.000	2.000	\$26,600,000	\$35,003,785				\$68,494,249		
4	5.9375	4	CS-1540 Shive Lane	03 114 E9999 988.00 (03 114 E9999 1.00)	Widening of Shive Lane from Ken Bate Blvd with an extension of Shive Lane to KY-880 (Lover's Lane) in Bowling Green.	0.032	0.600	0.632	\$3,820,000	\$5,026,859				\$73,521,109		
5	7.0625	5	CS-1334	03 114 E9999 3.00 (03 114 C0000 61.00)	Improve mobility and reduce the number of crashes on Smallhouse Road from Scottsville Road (US231X) to Cave Mill Road (CS1401).	2.571	0.656	3.227	\$23,800,000	\$31,319,176				\$104,840,285		
6	8.875	6	US-231	03 114 B0231 7.00	Improve access and mobility along Scottsville Rd (US 231) from Campbell Ln to Plano Rd including capacity and modification of frontage.	2.570	7.885	10.455	\$44,950,000	\$59,151,133				\$163,991,418		
7	8.875	7	US-231X	03 114 B0231X 56.10	Reduce the congestion and improve the safety along section of US 231X from 31W Bypass to Campbell Ln intersection.	2.066	0.000	2.066	\$11,250,000	\$14,804,233				\$178,795,651		
8	10.9375	8	US-68X	03 114 B0068 62.00	Reduce the congestion and improve safety on this section of Russellville Rd (US 68X) from Veteran's Memorial (US 231/KY880) to US 231X (University Boulevard).	1.524	0.000	1.524	\$15,000,000	\$19,738,977				\$198,534,628		
9	13.3125	9	US-231X	03 114 B0231X 2.00 & 03 114 B0068X 2.00	Widen northbound US 231X to accommodate two through lanes and a left-turn lane and widen southbound US 68X to accommodate two through lanes and a right-turn lane (Intersection of University Blvd and Avenue of Champions).	0.081	2.445	2.526	\$4,000,000	\$5,263,727				\$203,798,355		
10	14	10	KY-234	03 114 D0234 1532.0 (03 114 D0234 74.80)	Major widening/reconstruction of Cemetery Road (KY-234) from Fountain Trace to Roger Porter Road.	1.747	7.878	9.625	\$10,750,000		\$17,211,096			\$17,211,096		
11	14.4375	11	US-31W	03 114 B0031W 64.00	Laurel Avenue (US-31W Bypass) - Major widening from University Blvd to Fairview Ave (KY234) in Bowling Green.	1.894	11.805	13.699	\$9,800,000		\$15,690,116			\$32,901,212		
12	14.6875	12	US-31W	03 114 B0031W 69.00	Accommodate increased traffic from the residential and industrial development north of Bowling Green along the section of US 31W (Louisville Rd) from US 68 to Mizpah Road.	1.342	21.148	22.490	\$4,861,000		\$7,782,618			\$40,683,830		
13	15.125	13	US-31W	03 114 B0031W 16.00	Reconstruct US 31W from Old Porter Pike to KY 957 including the reconstruction of the interchange with KY 446.	1.526	16.559	18.085	\$32,000,000		\$51,233,031			\$91,916,861		
14	15.375	14	US-31W	03 114 B0031W 1.00	Improve the safety and capacity on US-31W at the intersection of 10th Avenue.	0.100	13.000	13.100	\$1,575,000		\$2,521,626			\$94,438,486		
15	15.375	15	KY-622	03 114 D0622 76.50	Improve the safety and reduce travel time on KY 622 (Plano Rd) from 0.1 mile south of Collett Road to Dewey Lake Road.	0.441	6.454	6.895	\$2,000,000		\$3,202,064			\$97,640,551		
16	17.3125	16	I-65	03 114 A0065 35.00	Reconstruction of I-65 at US 68 to include a full interchange at Exit 36 (Oakland Interchange).	0.100	35.500	35.600	\$7,100,000		\$11,367,329			\$109,007,880		
17	18.1875	17	US-68X	03 114 B0068X 1.00	Improve safety along US 68X by relocating the US 68X (Kentucky St/Adams St) split near Old Morgantown Rd, as well as widen Adams St to accommodate a five lane section and convert Adams Street and Kentucky Street to two-way streets.	0.300	2.000	2.300	\$22,700,000		\$36,343,431			\$145,351,311		
18	18.25	18	KY-2158	03 114 D2158 1.00	Improve the connection and mobility to US 231 by connecting KY 2158 (Cumberland Trace) to Cherry Farm Ln.	0.500	0.000	0.500	\$4,950,000		\$7,925,109			\$153,276,420		
19	18.3125	19	US-31W	03 114 B0031W 10.00	Reconstruct the US 31W intersection with Broadway to accommodate left-turn lanes on each approach.	0.045	12.789	12.834	\$3,300,000		\$5,283,406			\$158,559,827		
20	18.6875	20	I-65	03 114 C0000 1.00	Extend the new I-65 Connector from its intersection with US 31W, north toward Girkin Boiling Springs Road to accommodate major development possibilities north of Bowling Green.		0.000	0.000	\$24,000,000		\$38,424,773			\$196,984,600		
	18.8125		US-231X	03 114 B0231X 56.20	Improve mobility and accessibility, increase safety, and improve conditions for expansion of business on US 231X (Morgantown Road) between US 68 (Russellville Road) and US 231/KY 880 (Veterans Memorial Lane).	1.392	2.507	3.899	\$6,550,000		\$10,486,761			\$207,471,361		
	19		US-231	03 114 B0231 10.00	Improve safety at the intersection of Gary Farms Blvd and the Greenwood Mall Access Road.	0.010	10.674	10.684	\$625,000		\$1,000,645			\$208,472,006		
	19.0625		KY-2629	03 114 D2629 1.00	Improve the safety and reduce travel time on KY 2629 (Old Scottsville Road) from KY 2158 (Cumberland Trace Road) to Blue Springs Drive.	0.541	5.995	6.536	\$3,100,000		\$4,963,200			\$213,435,206		
	19.125		KY-2632	03 114 D2632 10.00	Improve the safety of KY 2632 from Whitestone Quarry Road to US 231 and the KY 2632-US231 intersection.	0.947	4.110	5.057	\$3,400,000		\$5,443,510			\$218,878,716		
	19.625		KY-622	03 114 D0622 73.00	Improve the safety of the intersection at KY 622 (Plano Road) and KY 242 (Richpond Road).	0.200	2.786	2.986	\$235,000		\$376,243			\$219,254,958		
	19.6875		KY-234	03 114 D0234 1.00	Improve safety on KY-234 at Pleasant Hill Road Intersection.	0.300	6.000	6.300	\$785,000		\$1,256,810			\$220,511,768		
	19.6875		KY-884	03 114 D0884 1.00	Improve safety and mobility on KY-884 (Three Springs Road) from the intersection with KY-242 (Richpond Road) to the intersection with Long Road.	1.900	3.616	5.516	\$5,650,000		\$9,045,832			\$229,557,601		
	19.75		KY-242	03 114 D0242 3.00	Improve safety and mobility on KY 242 (Richpond Road) from the intersection with US 31W (Nashville Road) to the intersection with KY 884 (Three Springs Road). This project would address narrow lanes and shoulder widths as well vertical alignment issues.	1.670	3.463	5.133	\$4,350,000		\$6,964,490			\$236,522,091		
	19.75		KY-957	03 114 D0957 1.00	Improve safety and provide a facility for pedestrians on KY 957 (Plum Springs Road) from US 31W to Redbird Trail.	1.420	0.000	1.420	\$4,500,000		\$7,204,645			\$243,726,736		
	19.8125		US-31W	03 114 B0031W 68.00	Widen US 31W (Louisville Road) through Warren, Edmonson, & Barren Counties from US 68 East in Warren County to KY 255 in Barren County to reduce travel time, improve safety, increase accessibility, and foster economic development.	7.888	20.905	28.793	\$94,000,000			\$183,102,647		\$183,102,647		
	20		US-68	03 114 B0068 10.00	Reconstruct US 68 (Veterans Memorial Ln) to include curb, gutter, sidewalk, greenways connection, street lights, storm sewer/drainage and landscaping.	3.955	10.816	14.771	\$5,900,000			\$11,492,613		\$194,595,260		
	20.0625		US-31W	03 114 B0031W 14.00	Reconfigure the US 31W (Riverview Drive) intersection with State Street / Old Louisville Road (KY 3225) to accommodate two-way traffic on State Street	0.070	14.382	14.452	\$500,000			\$973,950		\$195,569,210		
	20.0625			03 114 D9007 2.00	Improve Safety and Mobility along this section of the Natcher Parkway in Warren County to address interstate highway standards (I-65/I-66/I-69 Spur Study 2014).	18.167	2.079	20.246	\$3,300,000			\$6,428,072		\$201,997,281		
	20.125		US-231X	03 114 B0231X 1.00	Implement major access modifications along this section of US 231X.	1.313	0.000	1.313	\$32,850,000			\$63,988,531		\$265,985,813		
	20.375		US-68	03 114 B0068 64.00	Improve safety and reduce travel time on US 68 (Glasgow Road).	4.990	15.649	20.64	\$16,000,000			\$31,166,408		\$297,152,221		
															\$297,152,221	\$297,268,111

MPO RANK	PROJECT SCORE	Map #	Route #	CONTROL #	PROJECT DESCRIPTION	MILES	BMP	EMP	2016 Cost	2021-2025	2026-2030	2031-2035	2036-2040	Cumulative Total
	20.4375		KY-234	03 114 D0234 74.00	Improve the safety and reduce the travel time on this section of KY 234 between Drakes Creek and the Allen County Line.	9.749	0.000	9.749	\$45,000,000				\$106,646,346	\$106,646,346
	20.125		KY-263	03 114 D0263 1.00	Improve KY-263 to KY-185 to reduce travel time and to provide a new connection across the Barren River from northern to northwestern Warren and southern Butler counties.	12.579	0.000	12.579	\$64,100,000				\$151,911,795	\$258,558,140
	20.5625		KY-1402	03 114 D1402 1.00	Widen KY 1402 (Porter Pike) from US 31W to Grimes Rd, including realigning Parker Avenue to the adjacent shopping center entrance.	1.423	0.000	1.423	\$9,800,000				\$23,225,204	\$281,783,344
	20.625		KY-526	03 114 D0526 12.00	Improve the safety and reduce the travel time on KY 526 between KY 957 TO KY 1320.	1.853	3.793	5.646	\$6,240,000				\$14,788,293	\$296,571,638
	20.625		KY-622	03 114 D0622 76.00	Reconstruct and widen KY 622 from Plano-Richpond Rd to US 231.	3.070	5.262	8.332	\$21,200,000				\$50,242,278	\$346,813,916
	20.6875		KY-1402	03 114 D1402 3.00	KY 1402 is a two lane facility with horizontal and vertical curves. This project addresses the horizontal and vertical curve alignment issues on this segment of roadway and will improve safety in the area of the intersection with Bethel Lane.	0.200	3.300	3.500	\$1,250,000				\$2,962,398	\$349,776,314
	20.75		NEW	03 114 A0065 17.00	Construct new interchange on I-65 at KY 242.	0.100	17.000	17.100	\$11,100,000				\$26,306,099	\$376,082,413

2036-2040

Cost

Revenue

\$376,082,413

\$361,672,110

channels, and landscaping. Traffic operations are also a significant function of the KYTC District Offices. Example activities include roadway lighting, traffic signals, signing, and roadway striping. Over the last 10 years, KYTC annual expenditures for operation and maintenance activities in Warren County have ranged from a low of \$4,800,000 to a high of \$8,100,000 and have followed a generally increasing trend (the average over the last five years has been \$6,600,000). Approximately 65% of these amounts are applied toward the federal-aid system. For planning purposes, it is reasonable to assume that KYTC expenditures will be approximately \$6,600,000 per year over the foreseeable future.

In addition to the KYTC operation and maintenance programs, the local governments within the MPO planning area also expend significant resources for the operation and maintenance of local streets and roadways. In a given year, the City receives approximately \$1,000,000 of Municipal Aid funding. The City of Bowling Green expends an additional \$300,000 from its general fund to assist with the street overlay program. The Operations Division spends approximately \$80,000 on traffic control, an additional \$57,000 on street maintenance and minor overlay, and \$170,000 on storm drainage each year. The City has also allocated approximately \$400,000 for constructing new sidewalks throughout the city of Bowling Green. Warren County Public Works expends approximately \$2,000,000 per year on operations and maintenance, with the majority of funds appropriated through the County Road Aid Program.

G. GROUPED PROJECTS

Transportation planning regulations applicable to the development and content of MTPs allow that projects that are not considered to be of appropriate scale for individual identification in a given program year may be grouped by function, work type, and/or geographic area. Such projects are usually non-controversial and produce negligible impacts - other than positive benefits for safety, traffic operations, or preservation. Typically, these types of projects are not generated by the planning process; they are usually initiated by traffic operations or maintenance functions to correct existing problems or deficiencies, or they are the result of successful grant applications by local governments or entities. The KYTC identifies many of these types of projects as "Z-Various" in the Statewide Transportation Improvement Program (STIP). For the reasons noted above, the KYTC and FHWA have developed streamlined procedures for incorporating such projects into the MTP or TIP. Individual projects from grouped project categories will be incorporated into the MTP and/or TIP by Administrative Modification as they are defined (in terms of project description, scope, and cost) and approved. Allowing such MTP and TIP changes to be made by Administrative Modification, rather than Amendment (and the corresponding requirement for public review), simplifies and streamlines MTP/TIP maintenance and project approval processes.

Grouped project categories utilized by the Bowling Green-Warren County MPO are shown in **Table 7.4**. The list of grouped projects utilized here is a combination and simplification of two lists recommended by the KYTC/FHWA Consolidated Planning Guidance. This was done for applicability to the Bowling Green-Warren County area and to facilitate understanding by MPO committee members and the public. By listing these project types in the MTP, planning process stakeholders and the general public are informed of the types of potential projects that may be added to the MTP in the future via streamlined procedures. MTP actions for these projects will not require additional public review, demonstration of fiscal constraint, or a conformity determination (if applicable).

With respect to financial constraint for grouped projects, it should be understood that the dollar amounts shown in the Grouped Projects Table are illustrative (and minimal) project cost

amounts based on past experience and reasonableness. These numbers are included per recommended guidance and should not be interpreted as expected project awards or expenditures for any particular year. When projects are identified, with estimated costs, and funding decisions (type of funds and year) are made by the KYTC (on an annual or ongoing basis), the Cabinet will forward the project to the MPO with a commitment of additional funding (within financially constrained balances available on a statewide level) for inclusion in the MTP/TIP. Financial constraint for grouped projects is maintained by the Cabinet on a statewide level and is demonstrated on an annual basis for the STIP.

TABLE 7.4 GROUPED PROJECTS	
PROJECT TYPE	EXAMPLE ANNUAL AMOUNT
HSIP - High Cost Safety Improvements	\$100,000*
HSIP - Low Cost Safety Improvements	\$50,000
HSIP - Lane Departure Resurfacing Improvements	\$100,000
HSIP - Lane Departure Roadway Section Improvements	\$100,000
HSIP - Older Driver	\$25,000
HSIP - High Risk Rural Roads	\$100,000
Median Guardrail/Cable Projects	\$100,000
Rail Crossing Protection	\$50,000
Rail Crossing Separation	\$100,000
Intersection Improvements for Safety or Efficiency	\$100,000
Other Highway Safety Improvements	\$50,000
Intelligent Transportation System (ITS) Projects	\$50,000
Traffic Signal System Improvements	\$100,000
Highway Signing	\$10,000
Pavement Resurfacing, Restoration, and Rehabilitation	\$100,000
Pavement Markers and Striping	\$100,000
Bridge Replacement	\$500,000
Bridge Rehabilitation	\$100,000
Bridge Inspection	\$25,000
Bridge Painting	\$50,000
Transportation Alternatives Program (TAP)	\$100,000
Recreational Trails Program	\$50,000
Scenic Byways	\$25,000
Commuter Ridesharing Programs	\$25,000
Bicycle and Pedestrian Facilities**	\$25,000
Park & Ride Facilities	\$50,000
Purchase of New Buses (to replace existing vehicles or for minor expansion)	\$100,000
Rehabilitation of Transit Vehicles	\$25,000
Transit Operating Assistance	\$100,000
Transit Operating Equipment	\$50,000
Transit Passenger Shelters and Information Kiosks	\$25,000
Construction or Renovation of Transit Facilities	\$50,000

* Illustrative Costs Only - Please refer to text for explanation.

** Including pedestrian facility improvements identified in Local Public Agency Transition Plans to meet requirements of the Americans with Disabilities Act (ADA).

H. ILLUSTRATIVE PROJECTS

Table 7.5 below displays 21 unfunded, priority projects that are beyond the financial constraint of the 2016-2040 MTP. These projects were initially recommended as part of the Unscheduled Needs List (UNL), but due to a low priority ranking and/or an exceedingly high cost amount, these projects are considered to be “illustrative” projects. The final two projects in the table below represent projects that have funding requirements beyond resources normally available for highway projects within Kentucky.

TABLE 7.5 ILLUSTRATIVE PROJECTS					
Route #	PROJECT DESCRIPTION	LENGTH	BMP	EMP	2016 Cost
KY-957	Improve the safety and reduce the travel time on KY 957 from Red Bird Trail to KY 526.	1.915	1.416	3.331	\$8,910,000
KY-526	Improve safety and reduce the travel time on KY 526 from KY 185 to the eastern intersection of Garrett Hollow Road.	2.803	0.000	2.803	\$10,420,000
NEW	Provide a secondary connection from US 31W to Beech Bend Park to improve access and mobility, ensure the safety and security of the visitors, and to maintain the economic viability of this attraction continues.	1.395	0.000	1.395	\$7,600,000
KY-526	Improve the safety and reduce travel time on KY 526 from the eastern intersection of Garrett Hollow Road to KY 957.	0.990	2.803	3.793	\$4,400,000
I-65	Construct new I-65 interchange at KY 240.	0.100	14.797	14.897	\$10,600,000
US-31W	Reconstruct US 31W (Louisville Road) to include curb, gutter, sidewalk and/or greenways connection, street lights, storm sewer/drainage and landscaping.	0.967	16.121	17.088	\$7,050,000
US-31W	Provide bicycle and pedestrian facilities in order to improve the safety on US 31W between KY 957 and US 68	2.850	18.085	20.905	\$3,300,000
US-231	Improve safety and reduce travel time on this section of roadway between the William H. Natcher Parkway and KY 2632.	1.955	16.303	18.258	\$16,200,000
US-231	Improve the safety of the intersection at US 231 & KY 626 (west).	0.200	23.156	23.356	\$600,000
US-231	Improve the safety of the intersection at US 231-KY 626	0.200	24.243	24.443	\$600,000
KY-101	Improve the safety and reduce travel time on KY 101 between the Allen County Line and I-65	7.865	0.000	7.865	\$32,800,000
KY-240	Reconstruct KY 240 to accommodate increased travel from US 31W in Woodburn to the proposed interchange with I-65.	4.578	5.470	10.048	\$30,500,000
KY-242	Improve the safety and capacity of the intersection at KY 242 and KY 884.	0.200	5.033	5.233	\$500,000
KY-622	Widen KY 622 between Dye Ford Rd and Larmon Mill Rd/Plano-Richpond Rd.	1.744	3.518	5.262	\$7,950,000
KY-1435	Improve KY 1435 from US 231 to the proposed KY 263 bridge connector in Warren and Butler Counties.	14.039	0.000	14.039	\$17,600,000
US-68	Improve the rural connection which has horizontal and vertical alignment issues from US 68 (Veterans Memorial Lane) to KY 1435 (Barren River Road).	5.635	0.000	5.635	\$17,800,000
	Improve the urban connection from US 68 to Main Avenue in downtown Bowling Green.	2.488	5.635	8.123	\$14,100,000
WN-9007	Improve access on the William H. Natcher Parkway at KY 626 for western Warren County and eastern Butler County.	0.100	15.022	15.122	\$20,000,000
CR-1102	Improve the mobility and safety of Beech Bend Road to allow better access for pedestrians and vehicles to major tourist attractions and other points in the area.	0.428	0.000	0.428	\$11,500,000
I-66/BGOB	Provide a freeway connection from the Louie B. Nunn Parkway to the William H. Natcher Parkway.	0	0.000	0.000	\$485,000,000
NEW	A new route around the eastern edge of Bowling Green has been proposed to address the existing and future congestion along the internal street network of the city, to improve connections among that network, and access to all parts of the city.	0	0.000	0.000	\$250,000,000

CHAPTER 8

IMPLEMENTATION OF THE TRANSPORTATION PLAN

A. DEMONSTRATION OF COMPLIANCE WITH FEDERAL REQUIREMENTS

Under current federal transportation planning regulations, each MPO is required as part of its transportation planning responsibility, to address the following eight factors:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase accessibility and mobility of people and for freight;
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;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operations; and
8. Emphasize the preservation of the existing transportation system.

Federal regulations also require each MPO to provide citizens and other interested parties with a reasonable opportunity to comment on the plans prior to final approval. Furthermore, as an air quality attainment area, the Bowling Green-Warren County MPO is not required to address related requirements for short range attainment of the National Ambient Air Quality Standards under the Clean Air Act of 1990.

The eight factors listed above were used in the development of the Bowling Green-Warren County MPO Goals and Objectives. These goals and objectives were then used by committee members during the priority ranking of each transportation project.

As discussed in **Chapter 1**, on June 16, 2009, the U.S. Department of Transportation, U.S. Department of Housing and Urban Development, and the U.S. Environmental Protection Agency inaugurated six "Livability Principles" set forth by an Interagency Partnership for Sustainable Communities. The principles were adopted to help the agencies guide the allocation of funds to communities that manage their financial and physical resources in a manner that creates a dynamic environment that is efficient in its function, livable for its residents, enduring in its viability and results in a sense of well-being of its citizens. The principles are:

1. Provide more transportation choices.
2. Promote equitable, affordable housing.
3. Enhance economic competitiveness.
4. Support existing communities.
5. Coordinate and leverage federal policies and investment.
6. Value communities and neighborhoods.

Incorporation of the Livability Principles into the Bowling Green-Warren County MTP is not a mandate of current highway funding legislation or a planning regulation "requirement", but the MPO acknowledges that the concepts of livability and sustainability are integrated within the established goals and objectives which have guided the MPO's overall transportation vision and decision making with respect to the projects recommended in this plan and their associated priorities.

Additionally, each MPO and Local Government Agency (LPA) that receives Federal Highway Administration (FHWA) funding is obligated to responsibilities in compliance with the Americans with Disabilities Act (ADA) and Section 504 of the Vocational Rehabilitation Act (504) Plan. The Bowling Green-Warren County MPO, in conjunction with City and County governments and the local transit authority, GO bg, make conscious efforts to meet ADA standards and fulfill the requirements of Section 504 of the Vocational Rehabilitation Act (504) Plan. As discussed previously in **Chapter 3**, the Bowling Green-Warren County MPO, by way of Title VI of the Civil Rights Act of 1964 (*49 CFR Part 21*) ensures that no person shall on the basis of race, color, national origin, sex, age, disability, family or religious status be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program receiving federal funds. Please see the MPO's [Participation Plan](#) for more information regarding Title VI, ADA, and Section 504 compliance.

B. TRANSPORTATION IMPROVEMENT PROGRAM

1. General

The document used to direct implementation of the MTP is the Transportation Improvement Program (TIP). The TIP is a project-programming document covering a minimum of four years into the future. Its purpose is to provide a mechanism for requesting federal funds for surface transportation projects, indicate regional priorities, and demonstrate a short-range transportation vision for the area. Selection and programming for TIP projects shall be done cooperatively between the Bowling Green-Warren County Area MPO, the KYTC, and the Bowling Green Transit Authority. Each agency shall initially select and prioritize the categories of projects over which it has implementation responsibility. A meeting shall be held early in the annual TIP development process among the agencies to coordinate these projects. The Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Environmental Protection Agency (EPA) provide the regulatory guidance regarding the eligibility of projects, prioritization, deadlines, funding, and other matters. The parties agree that all regionally significant transportation projects that are not FHWA or FTA funded shall be disclosed to the MPO for inclusion in the TIP. The following procedures apply to the various funding categories:

- The Policy Committee shall develop a prioritized listing for projects for Transportation Enhancement (TE) funding. Projects selected for funding by the states shall be added to the TIP before the KYTC can obligate funding.
- The KYTC, in consultation, as appropriate, with the MPO agencies and communities will be responsible for selecting TIP projects in all other FHWA and FTA funding categories and the state funded categories. Projects selected must be substantially in agreement with the MPO's Metropolitan Transportation Plan (this document).

2. Modification of the Transportation Improvement Program

Modification of the TIP can be made through either an amendment or administrative modification. Each method must be undertaken through a process outlined in the Participation Plan.

C. AMENDING THE METROPOLITAN TRANSPORTATION PLAN

The MTP and TIP can be amended, in accordance with policies and procedures adopted in the Participation Plan. The MTP/TIP can be amended by an "Administrative Modification" or by a "formal Amendment." An Administrative Modification is a minor project adjustment that does not require committee approvals. Administrative Modifications are cataloged by the MPO staff, brought

to the attention of the committees at regular meetings, and formalized in the next MTP update. A Plan Amendment is required when:

- Adding or deleting a project that requires a federal action and is not eligible for an Administrative Modification (refer to next section).
- A change is made to the design concept or scope for a project.
- A project cost change is made that affects financial constraint.

Plan Amendments

When a plan amendment is proposed (between formal MTP update times), the Policy Committee (PC) will consider and act on the proposed amendment after a description of it is included in the PC meeting notice distributed to all members. The need for public input, beyond the normal committee meeting structure, will be determined by federal, state, and local officials on a “case by case” basis. The MPO will submit the approved amendment to the KYTC for approval.

The Bowling Green-Warren County MPO will provide opportunities for public participation for all plan amendments as follows:

1. The TAC reviews and approves the draft plan amendment for public comment.
2. A legal advertisement in the Bowling Green Daily News will notify the public that a draft plan amendment is available for public review on the MPO’s website, at the Bowling Green-Warren County MPO, the City of Bowling Green and Warren County government offices and other locations as necessary. Other public notification efforts may be used, as outlined in the general guidelines section. The public review and comment period for amendments is 15 days.
3. Letters or email correspondence will also be sent to local, state and federal planning and resource agencies requesting their comments on the plan amendment.
4. A summary of public input received during the 15-day comment period will be prepared.
5. At the end of the 15-day public comment period, the TAC will review and consider all public input and make a recommendation to the PC.
6. The PC will consider the TAC recommendation and public input prior to their consideration of the draft plan amendment for final approval.
7. The MPO will submit the approved amendment to the KYTC for the incorporation into the State Transportation Plan (STP).

Administrative Modifications

Public review is not required for administrative changes to the MTP. Administrative Modifications to the MTP include, but are not limited, the following:

- Correcting obvious minor data entry errors.
- Splitting or combining projects without modifying the original project intent.
- Changing or clarifying elements of a project description (with no change in funding). This change would not alter the original project intent.
- Moving a project from one federal funding category to another.
- Moving a project from federal funding to state funding.
- Shifting the schedule of a project or phase within the years covered by the plan (with no impact to fiscal constraint).
- Updating project cost estimates (within the original project scope and intent) that do not impact fiscal constraint.
- The addition of a project of a type included in the list of Grouped Projects (see Grouped Projects in **Chapter 7**).

Administrative Modifications will be included as agenda items for the TAC and PC meetings. The public may offer comments as part of the PC and TAC meeting's public comment time on the agenda. A description of the amendment must be included in the PC meeting notice distributed to all members. Since the TIP is a subset of the Transportation Plan where public meetings were held in its development and all transportation funding is through the KYTC, no public meetings will be held for the TIP or TIP amendments unless otherwise directed by the MPO Policy Committee. The MPO will submit the approved amendment to the KYTC for incorporation into the State Transportation Improvement Program (STIP).



Bowling Green-Warren County Metropolitan Planning Organization

Metropolitan Transportation Plan 2016-2040

APPENDICES

APPENDIX A

MPO Policy Committee & Technical Advisory Committee Membership Lists

POLICY COMMITTEE

The role of the Policy Committee is to establish policy for the expenditure of federal transportation funds within the Bowling Green-Warren County urbanized area. The Policy Committee (PC) functions as the MPO policy board for the cooperative transportation planning, decision making, and programming process affecting the MPO area. These duties include responsibility for review and approval of appropriate plans, implementation programs, and other related actions.

Functions of the Policy Committee include the following:

- Initiate, guide, and sanction the necessary activities required for the development of a coordinated, comprehensive, and continuing urban transportation planning process.
- Examine the adequacy and appropriateness of the transportation planning process.
- Review and approve proposed goals, objectives, and policies for the MPO transportation planning process.
- Review and approve all MPO short and long-range transportation plans, studies, and other work elements as required by the MPO planning process.
- Appoint all committees and sub-committees of the MPO.

The Policy Committee is comprised of five (5) members, of which three (3) are voting members and two (2), non-voting, ex-officio members:

Judge-Executive Warren County
Mayor, City of Bowling Green
Secretary, Kentucky Transportation Cabinet
Division Administrator, Federal Highway Administration (ex-officio)
Regional Administrator, Federal Transit Administration (ex-officio)

Other members may be added to the Policy Committee representing other interest groups or disciplines at the discretion of the Policy Committee (PC). The approved membership of the Policy Committee (PC), as it may be updated from time to time, will be included in the annual Unified Planning Work Program. Additionally, the KYTC District 3 Chief District Engineer shall serve as the alternate voting member to represent the Secretary of the Kentucky Transportation Cabinet in his/her absence.

TECHNICAL ADVISORY COMMITTEE

The Technical Advisory Committee (TAC) meets regularly with transportation staff and serves as an advisory panel on technical decisions. The type and extent of transportation improvements are discussed by the TAC and recommendations are made to the Policy Committee.

Functions of the Technical Advisory Committee include the following:

- Advise the Transportation Planning Staff on technical issues and the execution of the MPO Unified Planning Work Program.
- Recommend to the Transportation Planning Staff such things as the type of improvements, methods of analysis and design, etc.
- Make recommendations on the Metropolitan Transportation Plan and all necessary documents to the Policy Committee.
- Review plans and programs for the urban area.
- Act as an advocacy body on transportation related matters as needed, or as called upon by the Policy Committee.
- Provide technical input and recommendations to the Policy Committee on all transportation related issues.

Representatives or their designee from local transportation agencies, city and county governments and business groups serve on this committee. The Technical Advisory Committee is comprised of the following members:

1. KYTC District 3 Planning Section Supervisor - Chair
2. Bowling Green City Engineer - Vice-Chair
3. Bowling Green Public Works Director
4. Warren County Public Works Director
5. Warren County Public Works Planning, Design and Construction Manager
6. Bowling Green Area Chamber of Commerce Chief Operating Officer
7. Bowling Green Municipal Utilities Water/Sewer Systems Manager
8. Bowling Green Municipal Utilities Electric System Manager
9. Community Action of Southern Kentucky CEO
10. Bowling Green Public Transit (GOBG) Coordinator
11. Bowling Green Schools Director of Transportation
12. Bowling Green - Warren County Regional Airport Manager
13. Builders Association of Southcentral KY Executive Director
14. City-County Planning Commissioner (BG Rep)
15. City-County Planning Commissioner (WC Rep)
16. Federal Transit Administration Advisory Representative
17. FHWA Advisory Representative
18. Greenways Commission Chairperson
19. KYTC Division of Planning MPO Liaison
20. KYTC Office of Transportation Delivery Liaison
21. Legislative Representative/Liaison (KY House -16)
22. Legislative Representative/Liaison (KY House -17)
23. Legislative Representative/Liaison (KY House -19)
24. Legislative Representative/Liaison (KY House -20)
25. Legislative Representative/Liaison (KY House -22)
26. Legislative Representative/Liaison (KY House -23)
27. Legislative Representative/Liaison (KY Senate -32)
28. Realtor Association of Southern Kentucky Executive Director
29. The Medical Center EMS Director
30. Warren County Emergency Management Services Director
31. Warren County Public School System Director of Finance
32. Warren County Water District General Manager
33. Western Kentucky University Chief Facilities Officer
34. Western Kentucky University Parking and Transportation Director

APPENDIX B

MPO Project Prioritization Methodology

- TAC Initial Ranking of UNL Projects
- TAC Scoring Sheet of UNL Projects
- TAC/PC Final Ranking of UNL Projects

**BOWLING GREEN/WARREN COUNTY MPO
ACTIVE AND INACTIVE PROJECTS
2015 UNSCHEDULED NEEDS LIST (UNL)**

COUNTY	ROUTE	CONTROL NO	BMP	EMP	PROJECT DESCRIPTION	TOTAL COST	High	Medium	Low	Inactive	No Response
WARREN	US-31W	03 114 B0031W 63.10	10.567	11.805	Major widening from University Blvd (US 231) to Campbell Lane in Bowling Green. See 2000 Bowling Green transportation plan.	\$8,800,000	12				
WARREN	CS-1334	03 114 C0000 61.00	0.053	2.859	Improve mobility and reduce the number of crashes on Smallhouse Road (CS1334/CR1235) from Scottsville Road (US231X) to Cave Mill Road (CS1401).	\$23,800,000	11	1			
WARREN	US-31W	03 114 B0031W 2.00	1.464	4.258	Minor widening from KY 240 (WOODBURN) to Buchanon Park at MP 4.258.	\$19,050,000	10	1	1		
WARREN	CS-1540	03 114 E9999 1.00	0.000	0.000	Extend Shive Lane to KY 880 (Lovers Lane).	\$3,820,000	10	2			
WARREN	KY-622	03 114 D0622 76.50	6.454	6.895	Curve revision from 0.1 MI S of Collett Rd to Dewey Lake Rd.	\$2,000,000	9	1	2		
WARREN	US-231X	03 114 B0231X 56.10	0.000	2.066	Reduce the congestion and improve the safety on this section of US 231X.	\$11,250,000	9	3			
WARREN		03 114 C0000 56.00	0.000	0.000	Southwest Parkway - New construction from US 68 to US 31W SW of Bowling Green including installation of a bridge at the intersection with the RJ Corman Railroad. See 2000 Bowling Green transportation plan.	\$26,600,000	8	3	1		
WARREN	US-231X	03 114 B0231X 2.00	2.445	2.526	Widen northbound US 231X to accommodate two through lanes and a left-turn lane.	\$2,000,000	8	4			
WARREN	US-31W	03 114 B0031W 65.00	11.755	11.855	Reconstruct intersection at US 231 (Broadway) in Bowling Green. (Improve radii and add turn lanes).	\$3,300,000	8	4			
WARREN	KY-234	03 114 D0234 74.80	7.878	9.625	Reconstruction of KY 234 from Fountain Trace to Roger Porter Road.	\$10,750,000	7	2	3		
WARREN	KY-622	03 114 D0622 76.00	5.262	8.332	Reconstruct from Plano-Richpond Rd to US 231.	\$10,400,000	7	3	2		
WARREN	US-68X	03 114 B0068X 2.00	1.524	1.626	Widen southbound US 68X to accommodate two through lanes and a right-turn lane.	\$2,000,000	7	4	1		
WARREN	US-31W	03 114 B0031W 66.00	13.699	14.670	Major widening with urban section from Cemetery Rd (KY 234) to US 68 in Bowling Green, including improving safety at the intersection of US 31W and KY 234.	\$14,100,000	7	5			
WARREN	I-65	03 114 A0065 35.00	35.500	35.600	Reconstruction at US 68 to include a full interchange.	\$7,100,000	6	3	3		
WARREN	US-68X	03 114 B0068 62.00	0.000	1.524	Major widening to 5 lanes from KY 880 to University Blvd. in Bowling Green. Includes new CSX railroad underpass. See 2000 Bowling Green transportation plan.	\$15,000,000	6	5	1		
WARREN	KY-242	03 114 D0242 3.00	3.463	5.133	Improve safety and mobility on KY 242 from the intersection with US 31W (MP 3.463) to the intersection with KY 884 (MP 5.133).	\$4,350,000	5	3	2	1	1

WARREN	US-31W	03 114 B0031W 14.00	14.382	14.452	Reconfigure the US 31W (Riverview Drive) intersection with State Street / Old Louisville Rd (KY 3225) to accommodate two-way traffic on State Street.	\$500,000	5	3	3		1
WARREN		03 114 C0000 1.00	0.000	0.000	Extend the new I-65 Connector from its intersection with US 31-W, north toward Girkin Boiling Springs Road to accommodate major development possibilities north of Bowling Green.	\$24,000,000	5	4	1		2
WARREN	KY-242	03 114 D0242 10.00	5.033	5.233	Reconstruct intersection at KY 884.	\$500,000	5	4	2		1
WARREN	US-31W	03 114 B0031W 10.00	12.789	12.834	Reconstruct the US 31W intersection with Broadway to accommodate left-turn lanes on each approach.	\$3,300,000	2	1	1		8

WARREN	US-231	03 114 B00231 10.00	10.674	10.684	Improve safety at the intersection of Gary Farms Blvd and the Greenwood Mall Access Road.	\$625,000	1	9	1		1
WARREN	US-31W	03 114 B0031W 1.00	13.000	13.100	Improve the safety and capacity on US 31W at the intersection of 10th Avenue.	\$1,575,000	2	9	1	0	
WARREN		03 114 D9007 2.00	2.079	20.246	Improve Safety and Mobility along this section of the Natcher Parkway in Warren County to address interstate highway standard (I-65/I-66/I-69 Spur Study 2014).	\$3,300,000	3	8			1
WARREN	US-31W	03 114 B0031W 16.00	16.559	18.085	Reconstruct US 31W from Old Porter Pike (MP 16.559) to KY 957 (MP 18.085) including the reconstruction of the interchange with KY 446.	\$32,000,000	4	8			
WARREN	US-31W	03 114 B0031W 11.00	10.900	11.000	Realign the intersections with US 31W at Highland Way and Emmett Avenue.	\$2,550,000	2	7	2		1
WARREN		03 114 C0000 58.00	0.000	0.000	Provide a secondary connection from US 31W to Beech Bend Park to improve access and mobility; ensure the safety and security of the visitors; and to maintain the economic viability of this attraction continues.	\$7,600,000	2	7	2		1
WARREN	KY-622	03 114 D0622 73.00	2.786	2.986	Reconstruct intersection at KY 242.	\$235,000	3	7	2		
WARREN	US-31W	03 114 B0031W 64.00	11.805	13.699	Major widening from University Blvd to Cemetery Rd (KY 234) in Bowling Green.	\$9,800,000	4	7	1		
WARREN	US-31W	03 114 B0031W 69.00	21.148	22.490	Accommodate increased traffic from the residential and industrial development north of Bowling Green along the section of US 31W from US 68 (MP 21.148) to Mizpah Road (MP 22.49).	\$4,861,000	4	7	1		
WARREN	US-231X	03 114 B0231X 56.20	2.507	3.899	Morgantown Road - Major widening from US 68 to KY 880 in Bowling Green. See 2000 Bowling Green transportation plan.	\$6,550,000		7	4		1
WARREN	US-31W	03 114 B0031W 68.00	20.905	29.114	Major wideing to 4 lanes with depressed median from US 68 NE of Bowling Green to KY 101 at MP 27.557.	\$94,000,000	3	5	4		
WARREN		03 114 C0000 60.00	0.000	0.000	Improve the mobility and safety of Beech Bend Road, to allow better access for pedestrians and vehicles to a major tourist attraction and other points in the area.	\$11,500,000	2	6	2	1	1
WARREN	KY-240	03 114 D0240 9.00	5.470	10.048	This project would be to reconstruct KY 240 to accommodate increased travel from US 31W in Woodburn to the proposed interchange with I-65.	\$30,500,000	1	6	4	1	

WARREN	KY-2158	03 114 D2158 1.00	0.000	0.000	Improve the connection and mobility to US 231 by connecting KY 2158 to Cherry Farm Lane.	\$4,950,000	4	6	1	1	
WARREN	WN-9007	03 114 D9007 1.00	15.022	15.122	Improve access on William H Natcher Parkway at KY 626 for Western Warren County and Eastern Butler.	\$20,000,000	2	6	4		
WARREN	KY-884	03 114 D0884 1.00	3.616	5.516	Improve safety and mobility on KY 884 from the intersection with KY 242 to intersection with Long Rd.	\$5,650,000	3	6	3		
WARREN	US-68X	03 114 B0068X 1.00	2.000	3.249	Improve safety along US 68X by relocating the US 68X (Kentucky St / Adams St) split near Old Morgantown Rd, as well as widen Adams St to accommodate a five-lane section and convert Adams Street and Kentucky Street to two-way streets.	\$22,700,000	3	6	3		
WARREN	KY-2629	03 114 D2629 1.00	5.995	6.536	Improve the safety and travel time from KY 2158 to Blue Springs Drive.	\$3,100,000	4	6	2		
WARREN	US-231X	03 114 B0231X 1.00	0.000	1.313	Implement major access modifications along this section of US 231X.	\$32,850,000	3	5			4
WARREN	KY-1402	03 114 D1402 1.00	0.000	1.423	Widen KY 1402 (Porter Pike) from US 31W to Grimes Rd, including realigning Parker Avenue and the existing shopping center entrance.	\$9,800,000	2	5	4		1

WARREN	KY-526	03 114 D0526 11.00	2.803	3.793	Reconstruction from the eastern intersection of Garrett Hollow Road to KY 957.	\$4,400,000	1	2	9		
WARREN	KY-526	03 114 D0526 12.00	3.793	5.646	Reconstruction from KY 957 to KY 1320.	\$6,240,000	1	2	9		
WARREN	I-66/BGOB	03 114 A0066 1.00	0.000	0.000	To provide a freeway connection from the L. B. Nunn Parkway to the William H. Natcher Parkway (Bowling Green Outer Beltline).	\$485,000,000	0	3	8	1	
WARREN	US-231	03 114 B0231 60.00	23.156	23.356	Reconstruct intersection at KY 626 (West).	\$600,000	1	3	8		
WARREN	US-231	03 114 B0231 62.00	24.243	24.443	Reconstruct intersection at KY 626 (East).	\$600,000	1	3	8		
WARREN	KY-526	03 114 D0526 10.00	0.000	2.803	Reconstruction from KY 185 to the eastern intersection of Garret Hollow Road.	\$10,420,000	1	3	8		
WARREN	US-31W	03 114 B0031W 67.00	18.085	20.905	Construct curbs, gutters and sidewalks from KY 957 to US 68 NE of Bowling Green.	\$3,300,000	2	2	7		1
WARREN	KY-1402	03 114 D1402 3.00	3.300	3.500	KY 1402 is a two lane facility with horizontal and vertical curves. This project addresses the horizontal and vertical curve alignment issues on this segment of roadway and will improve safety in the area of the intersection with Bethel Lane.	\$1,250,000	3	2	7		
WARREN	KY-101	03 114 D0101 1.00	0.000	7.865	Improve the safety and reduce travel time on KY 101 between the Allen County line and I-65.	\$32,800,000		4	7	1	
WARREN	US-68	03 114 B0068 10.00	10.816	14.771	Reconstruct US 68 (Veterans Memorial Ln) to include curb, gutter, sidewalk, greenways connection, street lights, storm sewer/drainage and landscaping.	\$5,900,000		4	7	1	
WARREN	KY-2665	03 114 D2665 11.00	5.635	8.123	Widen with urban section from KY 880 to Main St.	\$14,100,000	1	4	7		
WARREN	KY-2632	03 114 D2632 10.00	4.110	5.057	Reconstruction from Whitestone Quarry Rd to US 231.	\$3,400,000		5	6	1	
WARREN	KY-2665	03 114 D2665 10.00	0.000	5.635	Reconstruction from KY 1435 to KY 880.	\$17,800,000	3	3	6		

WARREN	KY-1435	03 114 D1435 1.00	0.000	14.039	Improve KY 1435 from US 231 to the proposed KY 263 bridge connector in Warren and Butler Counties.	\$17,600,000		5	6	1	
WARREN	US-68	03 114 B0068 64.00	15.649	20.640	Reconstruction with spot improvements adding shoulders from Scotty's Way to I-65 near Oakland.	\$16,000,000	1	5	6		
WARREN	US-31W	03 114 B0031W 15.00	16.121	17.088	Reconstruct US 31-W (Louisville Road) to include curb, gutter, sidewalk and/or greenways connection, street lights, storm sewer/drainage and landscaping).	\$7,050,000	2	3	5	1	1
WARREN	KY-622	03 114 D0622 3.00	3.518	5.262	Widen KY 622 between Dye Ford Rd and Larmon Mill Rd/Plano-Richpond Rd.	\$7,950,000	3	4	5		
WARREN	KY-957	03 114 D0957 1.00	0.000	1.420	Widen with urban section from US 31W to Red Bird Trail.	\$4,500,000	3	4	5		
WARREN	KY-957	03 114 D0957 2.00	1.420	3.331	Widen with urban section from Red Bird Trail to KY 256.	\$8,910,000	2	4	5		1
WARREN	KY-263	03 114 D0263 1.00	0.000	12.579	Improve KY 263 to KY 185 to reduce travel time and to provide a new connection across the Barren River from Northern to Northwestern Warren and Southern Butler Counties.	\$64,100,000	2	4	5	1	

WARREN	KY-622	03 114 D0622 76.00	5.262	8.332	Reconstruct and widen KY 622 from Plano-Richpond Rd to US 231.	\$21,200,000	2	2			8
WARREN	US-231	03 114 B0231 7.00	7.885	10.455	Implement major access modifications along this section of US 231.	\$44,950,000	5	5	2		
WARREN	US-231	03 114 B0231 57.00	16.303	18.258	Improve safety and reduce travel time on this section of roadway between William H Natcher Parkway and KY 2632.	\$16,200,000		6	6		
WARREN		03 114 C0000 54.00	0.000	0.000	New eastern connector for Bowling Green from US 231 S of Bowling Green to I-65 NE of Bowling Green. See 2000 Bowling Green transportation plan.	\$250,000,000		5	5	2	
WARREN	KY-234	03 114 D0234 74.00	0.000	9.749	Reconstruction from Drakes Creek to Bays Fork at Allen C/L.	\$45,000,000	2	5	5		
WARREN	KY-234	03 114 D0234 1.00	6.000	6.300	Improve safety on KY 234 at Pleasant Hill Road intersection.	\$785,000	4	3	4		1
WARREN	I-65	03 114 A0065 17.00	17.000	17.100	Construct new interchange at KY 242.	\$11,100,000	4	3	4		1
WARREN	KY-527	03 114 D0526 14.00	5.646	5.646	Reconstruct KY 526 at the intersection with KY 1320 to correct the horizontal alignment issue.	\$650,000					
WARREN	KY-884	03 114 D0884 2.00	5.516	7.438	Improve safety and mobility on KY 884 from the intersection with Long Road to intersection with Natcher Parkway overpass.	\$9,000,000					
WARREN	KY-884	03 114 D0884 3.00	7.400	8.700	Improve safety and mobility on KY 884 from the Natcher Parkway overpass to MP 8.700 near Flealand.	\$14,500,000					
WARREN	WN-9007	03 114 D9007 74.00	1.604	1.704	Provide additional access to the Natcher Parkway and reduce congestion and travel time on US 231, KY 884, and US 31W.	\$9,000,000					
WARREN	WN-9007	03 114 D9007 75.00	7.222	7.622	Improve the safety and capacity of the existing interchange at Natcher Parkway and US 231.	\$7,800,000					
WARREN	US-31W	03 114 B0031W 62.00	4.980	6.684	Widen to 5 lanes from 1.0 miles south of KY 242 to Dillard Road.	\$15,000,000					
WARREN	US-31W	03 114 B0031W 67.50	18.722	18.966	This project is intended to realign the current offset intersections of Moorman Lane and Bristow Road at US 31W.	1.175,000					
WARREN	US-231	03 114 B0231 58.00	9.457	10.455	Improve the capacity and reduce the number of crashes on US 231 between KY 884 (Three Springs Rd) and US 231X/KY 880.	\$675,000					

Projects with tied ranking.

Already funded

PLEASE RANK YOUR TOP 20 PROJECTS IN ORDER FROM 1-20

HIGH, MEDIUM AND LOW RANKINGS FROM MARCH TAC MEETING WERE ASSIGNED WEIGHTS OF 8.3, 5.6 & 2.8 TO GENERATE AN OVERALL SCORE OUT OF 100

THIS IS THE TECHNICAL REVIEW SCORE PROVIDED FROM THE STATE (See e-mail explaining score)

FINAL TAC RANKING (1-20)	RESULTS FROM MARCH TAC MEETING					TAC SCORE (OUT OF 100)	2015 TECHNICAL REVIEW SCORE (out of 100)	CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES
	HIGH	MEDIUM	LOW	INACTIVE	NO RESPONSE												
12						100.00	71	03 114 B0031 1459.0 (03 114 B0031W 63.10)	10.561	11.688	MAJOR WIDENING/RECONSTRUCTION FROM CAMPBELL LANE (US 231) TO UNIVERSITY BOULEVARD (US 231X). MP 10.561 TO MP 11.688 (14CCN)	US 31W between US 231 (Campbell Lane) and US 231X (University Blvd.) is a two lane facility with 12' lanes and 4' shoulders. There is a mixture of land use which includes residential, commercial, churches, schools, and Western Kentucky University's southern campus. The turning movements, lack of turning lanes, and traffic volumes result in congestion and crashes. The CRF for this area is high, which indicates that problems exist with safety. The Kentucky Department of Highways has received approval for a safety (HES) project on a portion of the route. This gives additional evidence that a crash problem exists.		\$8,800,000	119	0	22
11	1					97.22	39	03 114 E9999 3.00 (03 114 C0000 61.00)	0.656	3.227	Improve mobility and reduce the number of crashes on Smallhouse Road (CS1334/CR1235) from Scottsville Road (US231X) to Cave Mill Road (CS1401).			\$23,800,000	64	0	11
10	2					94.44	29	03 114 E9999 988.00 (03 114 E9999 1.00)	0.600	0.632	EXTEND SHIVE LANE TO LOVERS LANE (KY 880) IN BOWLING GREEN. (14CCN)	Shive Lane is a two lane facility that is primarily a mix use of commercial, multifamily residential, and assisted living. Shive Lane is used as a cut through to access KY 880 and US 231. Fruit of the Loom is located in the vicinity, creating high volumes of traffic. By extending Shive Lane to connect directly to KY 880, it will improve motorist travel time and improve connectivity by providing an alternate route to the heavily congested US 231 corridor (Scottsville Road).		\$3,820,000	2	0	0
9	3					91.67	59	03 114 B0231X 56.10	0.000	2.066	Reduce the congestion and improve the safety on this section of US 231X.	US 231X between US 231/ KY 880 and US 31W is a four lane facility. A portion of the road is in a curb and gutter section and the remainder has 9' shoulders. Although some residences still exist along the roadway, the area is heavily commercial. The road provides access to two high schools, one middle school, a city park, two city golf courses, shopping centers, restaurants, and numerous other commercial facilities. It also provides a link between downtown Bowling Green and I-65. At certain times, especially during the afternoon rush hour, traffic congestion is a major problem as indicated by the V/SF Ratio. Historically there has been a problem with crashes along this roadway. The Critical Rate Factor indicates that safety is a concern. There is a reduced speed limit on this road. The crash problem was the justification for the speed limit reduction. KYTC has recommended the widening of Scottsville Road to 7 lanes with an urban section from KY 880 to Ashley Circle in Bowling Green.		\$11,250,000	189	0	39
8	4					88.89	64	03 114 B0231X 2.00	2.445	2.526	Widen northbound US 231X to accommodate two through lanes and a left turn lane.		Escalated costs from 2014 Downtown Circulation Study. Needs to be done in conjunction with 03 114 B0068X 2.00. BGMU Transmission line poles impacted. WKU decorative wall and sidewalks impacted.	\$2,000,000	9	0	2

FINAL TAC RANKING (1-20)	HIGH	MEDIUM	LOW	INACTIVE	NO RESPONSE	TAC SCORE (OUT OF 100)	2015 TECHNICAL REVIEW SCORE (out of 100)	CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES
	7	5				86.11	75	03 114 B0031W 66.00	13.699	14.670	Major widening with urban section from Fairview Avenue (KY 234) to US 68 in Bowling Green, including improving safety at the intersection of US 31W and KY 234.	US 31W between KY 234 and US 68 is a four lane facility with 9' lanes. This section of roadway is a curb and gutter section. The ADT is 21,465 with 8.8% trucks. The original road was constructed as a two lane facility with parking on both sides, but was later turned into four lanes due to the traffic volume. The area is commercial in nature with each business having direct access to the road. The turning movements, ADT, and lack of turning lanes in most locations result in congestion and crashes. The V/SF Ratio is 0.9 which indicates that problems exist with congestion. The Critical Rate Factor is 2.74. This number is extremely high which indicates that safety problems are a major concern. Portions of this road have been designated as high accident locations.	Five lane with curb, gutter, sidewalk. Dual left turn lanes at KY 234. Dense utilities. ROW proximity damages and loss of parking.	\$14,100,000	101	0	30
	9	1	2			86.11	35	03 114 D0622 76.50	6.454	6.895	Improve the safety and reduce travel time on KY 622 from 0.1 mile south of Collett Road to Dewey Lake Road.	KY 622 between a point 0.10 mile south of Collett Road and Dewey Lake Road is a narrow, two lane facility. The road was originally a farm to market road but has experienced a tremendous growth pattern as evidenced by the traffic volume. It is possible that traffic volumes will increase upon the completion of the interchange with the William H. Natcher Parkway and the extension. The Warren County School System has constructed a new elementary school in the Plano area. Safety is now a concern on this section of roadway. One reverse 90 degree turn situation exists that adds to this concern. This situation has been reviewed as a possible HES project on different occasions. A safety (HES) project was completed on the entire section of roadway and the speed limit reduced to 45 M.P.H. from Plano to US 231 to help with the safety issue.	Reconstruct severe curves on KY 622 between Natcher Pky and KY 622	\$2,000,000	4	0	0
	8	3	1			86.11	33	03 114 C0000 56.00	0.000	2.000	Southwest Parkway - New Construction from US 68 to US 31W SW of Bowling Green including installation of a bridge at the intersection with the R.J. Corman Railroad. See 2000 Bowling Green transportation plan.	Traffic along the US 68 West (Russellville Road) Corridor and US 31W South (Nashville Road) Corridor have experienced a high amount of stress due to congestion. A major mixed-use development has been proposed in cooperation with the city and local planning and zoning in this area between US 68 and US 31W. The construction of an additional beltline, or portion of one, would help ease the stress on the existing roads and intersections. Some of these roads are presently operating at or near maximum capacity.	2009 cost estimate by city (\$19.8m) escalated at 3% per year + addition of bridge over RJCRR and earthwork for approaches. Add'l design for final design, geotech for bridge, and structure plans. Add'l ROW for bridge and approaches. Utility costs esca	\$26,600,000	New route; No crash data		
	7	4	1			83.33	40	03 114 B0068X 2.00	1.524	1.626	Widen southbound US 68X to accommodate two through lanes and a right-turn lane.		Escalated costs from 2014 Downtown Circulation Study. Needs to be done in conjunction with 03 114 B0231X 2.00. BGMU Transmission line poles impacted. WKU decorative wall and sidewalks impacted.	\$2,000,000	7	0	2
	6	5	1			80.56	51	03 114 B0068 62.00	0.000	1.524	Reduce the congestion and improve safety on this section of US 68X from US 231/KY880 to US 231X (University Boulevard).	US 68 between US 231/ KY 880 and US 231X (University Blvd.) provides a direct link between the William H. Natcher Parkway and Western Kentucky University. Panel signs on the William H. Natcher Parkway direct motorists to use this route to access Western Kentucky University. US 68 also provides a direct link between Bowling Green and Russellville. This section of the roadway is highly congested as shown by the V/SF. The number of lanes on this facility varies between two and four with the road being predominantly a three lane facility. US 68 west of the Natcher Parkway is a four lane facility with turning lanes, and there are four lanes at the intersection with US 231X. Traffic volumes are heavy during the morning and afternoon rush hours, especially Friday afternoon. Rear end crashes are also common on this section of roadway.		\$15,000,000	114	0	17
	4	8				77.78	41	03 114 B0031W 16.00	16.559	18.085	Reconstruct US 31W from Old Porter Pike (MP 16.559) to KY 957 (MP 18.085) including the reconstruction of the interchange with KY 446.	US 31W is a major urban and regional connection in Bowling Green. Currently the interchange with KY 446 and several signalized intersections and access points along this section of US 31W from Old Porter Pike (MP 16.559) to KY 957 (MP 18.085) creates safety and mobility issues. This project would address those issues.	Scope is largely unknown. *Recommend conducting a scoping study with Planning Phase first. The need is to reduce congestion along Louisville Road (US31W) and enhance safety by reducing crashes caused by access issues. The biggest unknown involves t	\$32,000,000	93	1	28

FINAL TAC RANKING (1-20)	HIGH		MEDIUM		LOW		INACTIVE		NO RESPONSE		TAC SCORE (OUT OF 100)		2015 TECHNICAL REVIEW SCORE (out of 100)		CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES	
	7		2	3					77.78	39	03 114 D0234 1532.0 (03 114 D0234 74.80)	7.878	9.625	MAJOR WIDENING/RECONSTRUCTION OF CEMETERY ROAD (KY-234) FROM FOUNTAIN TRACE TO ROGER PORTER ROAD (MP 7.878 TO MP 9.625).(14CCN)							\$10,750,000	8	0	2	
	5		5	2					75.00	77	03 114 B0231 7.00	7.885	10.455	Implement major access modifications along this section of US 231.					From Three Springs Rd (9.45) to Campbell Lane (10.45), assumptions follow the 2014 Scottsville Road Scoping Study recommendations. Assume no work within the interchange area reconstructed in 2012. Escalate costs for improvements south of I-65.		\$44,950,000	473	1	##	
	4		7	1					75.00	66	03 114 B0031W 64.00	11.805	13.699	LAUREL AVE - MAJOR WIDENING FROM UNIVERSITY BLVD TO CEMETERY RD (KY 234) IN BOWLING GREEN				US 31W between US 231X (University Blvd.) and KY 234 (Cemetery Rd.) is a four lane facility with narrow lanes. Turning lanes exist only at locations (intersection with Cabell Drive and between Lehman Ave. and KY 234) that were reconstructed as safety (HES) projects. This section of roadway was constructed in 1948 as a two lane facility with parking on both sides and entrances by permit. The parking was later removed and the parking lanes designated as driving lanes. The area is heavily commercial. Due to the large traffic volume, numerous entrances, commercial activity, and lack of turning lanes, congestion is a problem. In some locations, such as the intersection with 10th Avenue, left turns have been prohibited. The roadway has a history of crash problems as indicated by the number of HES projects on the roadway.			\$9,800,000	190	0	49	
	4		7	1					75.00	40	03 114 B0031W 69.00	21.148	22.490	Accommodate increased traffic from the residential and industrial development north of Bowling Green along the section of US 31W from US 68 (MP 21.148) to Mizpah Road (MP 22.49).				US 31W between US 68 and Mizpah Road is primarily a two lane road. A high volume of traffic is encountered along this highway and is rapidly increasing due to industrial expansion. The entrance to the Multimodal Transpark in Warren County is located along this section of US 31W. US 31W not only serves the Transpark but also commuter traffic to employment sites in and around Bowling Green, as well as being part of a major travel route for people in Edmonson County and eastern Warren County. US 31W has been designated as a Safety Corridor by the Kentucky Department of Highways and "Safety Blitzes" are conducted on the route.		Construction estimate assumes ultimate 4-lane depressed median from Commonwealth Drive to 1300' north of intersection with US 31W-I-65 Connector. Estimate provided by AEI.		\$4,861,000	9	0	4
	6		3	3					75.00	36	03 114 A0065 35.00	35.500	35.600	Reconstruction of I-65 at US 68 to include a full interchange.					Construct two new ramps SB off, NB on along with minor widening of US 68 for turn lanes. Includes reconstruct of frontage road on NW quadrant. AT&T Legacy impacted on NE quadrant.		\$7,100,000	1	0	0	
	4		6	2					72.22	31	03 114 D2629 1.00	5.995	6.536	Improve the safety and reduce travel time on KY 2629 (Old Scottsville Road) from KY 2158 (Cumberland Trace Road) to Blue Springs Drive.				KY 2629 (Old Scottsville Road) between KY 2158 (Cumberland Trace Road) and Blue Springs Drive is a narrow two lane facility with numerous significant horizontal and vertical curves, no turning lanes and narrow earth shoulders. This area has been developed with a number of subdivisions and individual residences. The Cumberland Trace Elementary School, which is located on KY 2158 near this roadway, generates a substantial amount of traffic. This route is used to transport school children from the Greenhill section of Warren County to that school. Safety is a concern due to the previously noted factors. The Kentucky Department of Highways has installed a flashing beacon at the KY 2158 - KY 2629 intersection due to safety concerns.			\$3,100,000	2	0	1	

FINAL TAC RANKING (1-20)	HIGH	MEDIUM	LOW	INACTIVE	NO RESPONSE	TAC SCORE (OUT OF 100)	2015 TECHNICAL REVIEW SCORE (out of 100)	CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES
	2	9	1	0		69.44	68	03 114 B0031W 1.00	13.000	13.100	IMPROVE THE SAFETY AND CAPACITY ON US-31W AT THE INTERSECTION OF 10TH AVENUE.	US 31W is one of the major non-interstate north-south routes through Warren County and has been designated as a safety corridor by Kentucky Transportation Cabinet. US 31W is a four lane facility with 10' lanes and curbed shoulder. The turning movements, lack of turning lanes, and high Average Daily Traffic results in congestion and crashes. Currently at this intersection, left turns are prohibited. For this segment of roadway, the V/S is an indication of safety and congestion issues. There are major traffic generators in this area, such as commercial, retail, and residential establishments. Historically, crashes have been a factor on this portion of roadway.		\$1,575,000	9	0	7
	4	6	1	1		69.44	54	03 114 D2158 1.00	0.000	0.500	Improve the connection and mobility to US 231 by connecting KY 2158 to Cherry Farm Ln.	KY 2158 is a two lane facility with a high ADT of 8,610. This route is a commuter route for numerous traffic generators adjacent to it. There is limited distance (approximately 400 feet) between KY 2158 and the I-65 Northbound ramps. Lanes on both KY 2158 and US 231 are filling to capacity creating congestion in the area. With the high volumes of traffic and the increasing congestion, safety is a concern on this roadway. Traffic volumes are expected to increase with rapidly rising development on US 231 and surrounding arterials .	Assume 1.5-2 acres of right of way on property already platted for development. Three lanes with curb, gutter, sidewalk. Minor utilities at each end.	\$4,950,000	24	0	5
	3	7	2			69.44	38	03 114 D0622 73.00	2.786	2.986	Improve the safety of the intersection at KY 622 and KY 242.	The intersection of KY 622 and KY 242 is a "T" intersection. KY 242 intersects in a skew which makes turning movements difficult, especially for large vehicles. There are horizontal curves on the KY 242 approach and the northbound KY 622 approach. There is also a vertical curve on the southbound KY 622 approach. There are no turning lanes on any of the approaches. Both roads were originally farm to market roads but residential development on both have changed the traffic pattern. The Warren County School System has recently constructed a new elementary school in the Plano area. Traffic volume is expected to increase greatly. These factors create safety concerns about the intersection.		\$235,000	1	0	0
	5	4	2		1	69.44	34	03 114 D0242 10.00	5.033	5.233	Improve the safety and capacity of the intersection at KY 242 - KY 884.	The KY 242 - KY 884 intersection is an intersection of narrow, two lane roads. There are no left turn lanes, but bifurcated right turn lanes do exist. Safety is a concern. This intersection was identified by the Kentucky Transportation Center as being one of only three intersections in the Kentucky Department of Highways District # 3 to have an abnormally high "disregard for stop sign" crash rate. The traffic right-of-way designations at the intersection are somewhat confusing. KY 884, which is in a tangent section, must yield the right-of-way to KY 242, which has a reverse horizontal curve alignment at this location. The traffic volumes and safety concerns are expected to increase with the opening of the newly constructed high school and middle school complex at the US 31W - KY 242 intersection and the new elementary school on KY 884. Much of the traffic accessing these schools will be required to use this intersection.		\$500,000	0	0	0
	3	8			1	69.44	34	03 114 D9007 2.00	2.079	20.246	Improve Safety and Mobility along this section of the Natcher Parkway in Warren County to address interstate highway standard (I-65/I-66/I-69 Spur Study 2014).		Based on 2014 I-65/I-69 Spur Corridor Study recommendations and Sec. Hancock's recommendations to prioritize. In Warren Co, assume horizontal clearance deficiencies will get FHWA exceptions. Exit 9 interchange reconstruct handled under separate PIF a	\$3,300,000	37	0	11
	5	3	3		1	66.67	61	03 114 B0031W 14.00	14.382	14.452	Reconfigure the US 31W (Riverview Drive) intersection with State Street / Old Louisville Road (KY 3225) to accommodate two-way traffic on State Street		Costs escalated from 2014 Downtown Circulation Study. Signal modifications required (Design, Constr). Power poles may need relocated. Assume temp esmts on each quadrant.	\$500,000	5	0	1

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	3	6	3			66.67	56	03 114 B0068X 1.00	2.000	2.300	Improve safety along US 68X by relocating the US 68X (Kentucky St/Adams St) split near Old Morgantown Rd, as well as widen Adams St to accommodate a five lane section and convert Adams Street and Kentucky Street to two-way streets.	The US 68X corridor provides a direct between Bowling Green and Russellville, as well as providing a direct connection to Western Kentucky University. This portion of US 68X is a four lane heavily traveled roadway with a mixed land use of commercial, single and multi-family residential, and WKU's campus. Motorists speed along this section of roadway with high volumes of pedestrians moving between the large parking lot between US 68/US 231X (Adams St/Kentucky St) and WKU Campus. Traffic volumes and congestion are heavy during morning and afternoon rush hours. The critical Rate factor for this segment of roadway is significant. Improvements to US 68X will increase pedestrian safety.	Based on Downtown Circulation Study. Five lanes on Adams Street. 77 parcels including two warehouses, impacts to parking, dense utilities.	\$22,700,000	17	0	2
	3	6	3			66.67	28	03 114 D0884 1.00	3.616	5.516	IMPROVE SAFETY AND MOBILITY ON KY-884 FROM THE INTERSECTION WITH KY-242 TO INTERSECTION WITH LONG ROAD.	KY 884 between KY 242 and Long Road is a narrow two lane facility with 9' lanes and 2' shoulders with an ADT of 3,350. KY 884 is developing rapidly with numerous large subdivisions emerging, as well as private residences and small commercial development. With high volumes of traffic and limited shoulder widths, safety is a concern on this roadway. Also, a private elementary school has recently been constructed on KY 884 adding to the safety concern and volumes of traffic are expected to increase due to the new developments in the area.		\$5,650,000	4	0	1
	5	4	1		2	66.67		03 114 C0000 1.00	0.000	0.000	Extend the new I-65 Connector from its intersection with US 31W, north toward Girkin Boiling Springs Road to accommodate major development possibilities north of Bowling Green.		Assume 4-lane, depressed median with at-grade intersections at Fairview-Boiling Springs and KY 1320.	\$24,000,000	New route; No crash data		
	3	5	4			63.89	40	03 114 B0031W 68.00	20.905	28.793	Widen US 31W through Warren, Edmonson, & Barren Counties from US 68 East in Warren County to KY 101 in Barren County to reduce travel time, improve safety, increase accessibility, and foster economic development.	US 31W between US 68 in Warren County and KY 255 in Barren County is primarily a two lane facility. Much of the traffic is commuter traffic to employment sites in and around Bowling Green. It serves as a major travel route for people in Edmonson County and eastern Warren County. It also provides direct access to I 65 for the Edmonson County Industrial Park and the Multimodal Transpark in Warren County. Historically, crashes have been a problem at certain locations; the intersection with KY 259 and the two intersections with KY 101 are prime examples. The intersection of US 31W and KY 259 was reconstructed as a safety (HES) project. US 31W has been designated as a Safety Corridor by the Kentucky Department of Highways and "Safety Blitzes" conducted on the route.		\$94,000,000	30	0	16
	5	3	2	1	1	63.89	34	03 114 D0242 3.00	3.463	5.133	Improve safety and mobility on KY 242 from the intersection with US 31W (MP 3.463) to the intersection with KY 884 (MP 5.133). This project would address narrow lanes and shoulder widths as well vertical alignment issues.	KY 242 from the intersection with US 31W (MP 3.463) to the intersection with KY 884 (MP 5.133) provides access to the residential and commercial activities in the community of Richpond and Richpond Elementary School and South Warren High & Middle Schools. This project would address narrow lanes and shoulder widths as well vertical alignment issues as well as provide for increasing traffic in the area.	Design will require geotech in rural section, urban drainage design, comprehensive MOT plan for railroad crossing. Design could be consultant or in-house. No archived plans exist. Survey done aerial photogrammetry.	\$4,350,000	5	0	3
	2	7	2		1	61.11	76	03 114 B0031W 11.00	10.900	11.000	Realign the intersections with US 31W at Highland Way and Emmett Avenue.		Realignment of Highland Way to match existing signalized intersection of Emmett Ave. Two relocations and proximity damages to two other properties. Signal modifications.	\$2,550,000	35	0	7
	1	9	1		1	61.11	72	03 114 B0231 10.00	10.674	10.684	Improve safety at the intersection of Gary Farms Blvd and the Greenwood Mall Access Road.		Assume widening for right turn lane on Gary Farms from Sonic to Campbell Lane. Reconstruct radius and DBI in NW quadrant. Signal modifications.	\$625,000	35	0	7

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	3	4	5			61.11	62	03 114 D0957 1.00	0.000	1.420	Improve safety and provide a facility for pedestrians on KY 957 from US 31W to Redbird Trail.	KY 957 between US 31W and Redbird Trail is a narrow, two lane facility. This road provides the link between the City of Plum Springs and US 31W. The road is used as a "cut through" route for motorists from the north central portion of Warren County. There are no turning lanes on the road. There is significant pedestrian activity along this roadway and no sidewalks exist. KY 957 actually follows portions of two roadbeds; Old US 31W Loop and Plum Springs Roads. Southbound motorists on KY 957 must stop and yield the right-of-way to the Old US 31W Loop Road. Crashes have caused a problem at this location, as well as, at one severe horizontal curve on this road. There is a reduced speed limit on KY 957. A major point in the decision to reduce the speed limit was the safety issue along the roadway.		\$4,500,000	21	0	5
	4	3	4		1	61.11	36	03 114 A0065 17.00	17.000	17.100	Construct new interchange on I-65 at KY 242.		Ex. 12x4 RCBC just north of KY 242 overpass to be extended on both ends. Due to stream running along NB side of I-65, three other RCBCs to be constructed at ramps. Assume widening of KY 242 and new (or widened) bridge over I-65. AT&T Legacy impacted	\$11,100,000	0	0	0
	3	4	5			61.11	34	03 114 D0622 3.00	3.518	5.262	Widen KY 622 between Dye Ford Rd and Larmon Mill Rd/Plano-Richpond Rd.		Assume two lane rural with turn lanes and shoulders, safety improvements from Dye Ford Rd to Journey Dr (MP 4.7). North to Larmon Mill (MP 5.2) may be 3 lane urban due to narrow corridor and proximity of residences. Anticipate 1-2 relocations; typica	\$7,950,000	6	0	3
	2	6	4			61.11	33	03 114 D9007 1.00	15.022	15.122	IMPROVE ACCESS ON WILLIAM H NATHCER PARKWAY AT KY-626 FOR WESTERN WARREN COUNTY AND EASTERN BUTLER.	William Natcher Parkway is a four lane fully controlled access facility that provides a link between Bowling Green and Owensboro. The existing four interchanges in Warren County on the Natcher Parkway are located near or within the city limits of Bowling Green. Many residents of neighboring Butler County work and entertain in Bowling Green, utilizing the parkway to access points of interest in the city. There are approximately twenty miles between the Natcher Parkway/US 231 interchange in Warren County and the Natcher Parkway/US 231 interchange in Butler County. The only option for motorists accessing the Natcher Parkway from western Warren County and eastern Butler County is to use the US 231 interchange in Warren County and the US 231 interchange in Butler County. An additional Natcher Parkway access will help to reduce travel time and distance, as well as improve access between counties.		\$20,000,000	0	0	0
	2	7	2		1	61.11	23	03 114 C0000 58.00	0.000	1.395	Provide a secondary connection from US 31W to Beech Bend Park to improve access and mobility; ensure the safety and security of the visitors; and to maintain the economic viability of this attraction continues.	A secondary access is needed for Beech Bend Park. Current access is limited to the Beech Bend Park via Beech Bend Road off of US31W. This existing narrow two lane road is inadequate to handle the 1,000,000 tourists that visit the park each year. To relieve the situation, the MPD is initiating short term efforts to widen Beech Bend to three lanes but a long term solution will be needed. Safety and security is also a major issue since alternative access is needed for possible emergency situations. The Park is a major economic generator for the county and state and access needs to be improved to accommodate their operations and growth. Because of the lack of accessibility, some events are threatening to end their contractual arrangements, which would severely impact the local economy. The complicated environmental, funding and design issues of this project would require a planning study.	Construct new roadway from US 31W north to access Beech Bend Park. (Construction estimates adjusted for 3% inlation for FY 2012)	\$7,600,000	4	0	3

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	4	3	4		1	61.11	23	03 114 D0234 1.00	6.000	6.300	IMPROVE SAFETY ON KY-234 AT PLEASANT HILL ROAD INTERSECTION.	KY 234 is a narrow two lane facility with 9' lanes and 4' shoulders. This route provides direct access to the Barren River Lake, which creates significant recreational traffic hauling trailers, boats, and campers. A December 6, 2007 Road Safety Audit was conducted on KY 234 and revealed a sight distance problem at the intersection with Pleasant Hill Road. Safety is a concern at this location. Numerous vertical and horizontal curves exists on this roadway. There have been a number of crashes on KY 234, some fatal. Access management is also a concern at this location. There are three separate entrances off KY 234 to the subdivision located on Pleasant Hill Road.		\$785,000	0	0	0
	3	3	6			58.33	61	03 114 D2665 10.00	0.000	5.635	Improve the rural connection which has horizontal and vertical alignment issues from US 68 (Veterans Memorial Blvd)to KY 1435 (Barren River Road).	KY 2665 serves as the rural connection from US 68 (Veterans Memorial Blvd)to KY 1435 (Barren River Road). This narrow two lane roadway has horizontal and vertical alignment issues with little to no shoulders.		\$17,800,000	12	0	6
	2	5	5			58.33	31	03 114 D0234 74.00	0.000	9.749	Improve the safety and reduce the travel time on this section of KY 234 between Drakes Creek and the Allen County Line.	KY 234 between Drakes Creek and the Allen County Line is a two lane facility with numerous vertical and horizontal curves. This route provides a primary access to the Barren River Lake, thus much of the traffic is recreational in nature with trailers, boats and campers. It also provides a link between I-65 and the southeastern portion of Warren County and the northwestern portion of Allen County. A recently completed construction project widened KY 234 from Drakes Creek to Bowling Green to a multilane facility and added an interchange at I-65. This construction is expected to increase the traffic on the roadway, especially with the rapidly increasing residential development along the route. Safety has been a concern at certain locations. There have been a number of fatal crashes along this roadway. Although no location along this section of roadway has been designated as a "high accident location" by the Kentucky Department of Highways, the intersection of KY 234 and KY 101 in Allen County.		\$45,000,000	24	1	8
	2	5	4		1	55.56	32	03 114 D1402 1.00	0.000	1.423	Widen KY 1402 (Porter Pike) from US 31W to Grimes Rd, including realigning Parker Avenue to the adjacent shopping center entrance.		Assume 3-lane urban from US 31W to Corvette Drive and 3-lane rural to NCM Motorsports Track.	\$9,800,000	12	0	0
	3	2	7			55.56	30	03 114 D1402 3.00	3.300	3.500	KY 1402 is a two lane facility with horizontal and vertical curves. This project addresses the horizontal and vertical curve alignment issues on this segment of roadway and will improve safety in the area of the intersection with Bethel Lane.	KY 1402 provides a connection to eastern Warren County as well as an alternative route to Glasgow in Barren County and is a two lane facility with horizontal and vertical curves. This project addresses the horizontal and vertical curve alignment issues on this segment of roadway and will improve safety in the area of the intersection with Bethel Lane.	Design will be relatively simple and done in-house. Survey done in-house. ROW involves 4-5 parcels mostly strip taking, but two new brick houses and one older frame house may have proximity damages once profile grade is lowered. If temp diversion is	\$1,250,000	1	0	0
	2	6	2	1	1	55.56	22	03 114 E9999 2.00 (03 114 C0000 60.00)	0.000	0.428	Improve the mobility and safety of Beech Bend Road, to allow better access for pedestrians and vehicles to a major tourist attraction and other points in the area.	Access to Beech Bend Park, a major tourist attraction, is severely limited. Annual attendance is approaching 1,000,000, with some individual events attracting 100,000. The park is served by a narrow two lane urban collector street, which at peak periods creates congestion along the 1.8 mile street and onto US 31W and US 68. During these periods, safety is severely compromised along the road and at the park since emergency vehicles cannot enter or exit. Pedestrian and bicycle traffic accessibility also is limited along this narrow road. The Greenways Master Plan identifies the need for development of sidewalks/shared use paths along the road.	Reconstruction of Beech Bend Road to 3 lanes with curb, gutter, and sidewalk. (Construction estimates adjusted for 3% inflation for FY 2010.)	\$11,500,000	5	0	2

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	2	4	5		1	52.78	46	03 114 D0957 2.00	1.416	3.331	Improve the safety and reduce the travel time on KY 957 from Red Bird Trail to KY 526.	KY 957 between Red Bird Trail and KY 526 is a narrow, two lane facility. Residential development has increased dramatically. Once a farm to market road, this roadway is now a collector for the subdivisions along the road, as well as, those motorists using this as a "cut through road" from KY 526. Recent zoning changes have been approved and additional development in this area is expected. Pedestrian and bicycle activity are also increasing in this area. Safety is a concern on this section of roadway. The speed limit on the entire length of KY 957 is 35 M.P.H. A major point in the decision to reduce the speed limit was the safety issue along the roadway.		\$8,910,000	12	0	7
	3	5			4	52.78	45	03 114 B0231X 1.00	0.000	1.313	Implement major access modifications along this section of US 231X.		Assumptions follow the 2014 Scottsville Road Scoping Study recommendations, adjacent to this section. Assume similar work for 6-laning and access modifications. Assume similar ROW and Utility impacts escalated from study as a cost per mile.	\$32,850,000	120	0	26
	2	4	5	1		52.78	40	03 114 D0263 1.00	0.000	12.579	IMPROVE KY-263 TO KY 185 TO REDUCE TRAVEL TIME AND TO RPOVIDE A NEW CONNECTION ACROSS THE BARREN RIVER FROM NORTHERN TO NORTHWESTERN WARREN AND SOUTHERN BUTLER COUNTIES.	KY 263 is a narrow two lane facility with 9' lanes that extends from northern Warren County near Butler County to Richardsville. The Barren River runs parallel to KY 263, acting as a natural divide by cutting off easy access to northern Warren County and Butler County. Residents living in this portion of Warren County wishing to utilize the Natcher Parkway must travel a great distance to Bowling Green to access an interchange. Portions of this roadway have a relativley high ADT and with the limited shoulder widths, safety is a concern. Improvements to KY 263 will improve will reduce the travel time and distance for motorists in Warren and Butler Counties.		\$64,100,000	16	0	7
	1	6	4	1		52.78	37	03 114 D0240 9.00	5.470	10.048	This project would be to reconstruct KY 240 to accommodate increased travel from US 31W in Woodburn to the proposed interchange with I-65.	Rapid residential and commercial growth is occurring on the southern side of Bowling Green, southern Warren County, and northern Simpson County. Motorists and commercial trucks have limited options for accessing I-65 in Southern Bowling Green and Warren County and must rely on the heavily congested routes of US 31W (Nashville Road and KY 884 (Three Springs Road) to reach various destinations. To provide an alternative connection, a new interchange has been proposed to access I-65 at KY 240 to the east of the city of Woodburn. The purpose of this project is to improve the safety and efficiency of travel in this area and to provide better connection for travelers along this existing transportation network to the proposed access to I-65 at KY 240.	Reconstruct KY 240 from US 31W to the proposed interchange with I-65 east of Woodburn	\$30,500,000	6	0	2
	1	5	6			52.78	18	03 114 B0068 64.00	15.649	20.640	Improve safety and reduce travel time on US 68.	US 68 between Scotty's Way and I-65 is a two lane facility with 9' lanes and 4' shoulders. A number of horizontal curves exist on the road. This route provide access to I-65 for the Multimodal Transpark. It also provides a link to Bowling Green for people that live in eastern Warren County.		\$16,000,000	12	0	5
		7	4		1	50.00	56	03 114 B0231X 56.20	2.507	3.899	Improve mobility and accessibility, increase safety, and improve conditions for expansion of business on US 231X between US 68 and US 231/KY 880.	US 231X between US 68 and US 231/ KY 880 is a heavily used three lane facility. This route provides access to the Natcher Parkway. Land use along the route is mixed. An industry, restaurants, commercial facilities, a high school, and a technical school are located near the US 68 intersection in the MP 2.507-2.954 section. In the MP 2.954-3.899 section, the road serves the Kentucky Dept. of Highways District 3 Office, Kentucky National Guard Headquarters, two city parks, the Kentucky Advanced Technical College,commercial facilities, and a number of apartment complexes. A Wal-Mart Super Center and a small strip mall has recently opened at the intersection with US 231/ KY 880. Other development is now in progress at that location. There is some concern that this area will become the next "Scottsville Road." Congestion and safety are now concerns along the roadway. The situation is expected to get worse with the increasing construction of commercial facilities.		\$6,550,000	65	1	8

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	1	4	7			50.00	35	03 114 D2665 11.00	5.635	8.123	Improve the urban connection from US 68 to Main Street in Downtown Bowling Green.	KY 2665 serves as the urban connection from US 68 (Veterans Memorial Blvd) to Main Street in Downtown Bowling Green. This narrow two lane roadway has horizontal and vertical alignment issues with little to no pedestrian facilities and no dedicated left turn opportunities.		\$14,100,000	32	0	8
		6	6			50.00	27	03 114 B0231 57.00	16.303	18.258	IMPROVE SAFETY AND REDUCE TRAVEL TIME ON THIS SECTION OF ROADWAY BETWEEN WILLIAM H NATCHER PARKWAY AND KY-2632	US 231 between the William H. Natcher Parkway and KY 2632 is predominantly a two lane facility with an ADT over 6,500. There are no turning lanes on the two lane portion of this roadway. There are several horizontal and vertical curves that limit sight distance along the northern portion of this section of US 231. This is especially true at the intersection with KY 2632. US 231 provides the major link between Bowling Green and the northwestern section of Warren County and southern Butler County. Recently a significant amount of residential development has occurred along this section of roadway. Several subdivisions have been developed, as well as, individual residences. Safety is a concern due to the development and lack of turning lanes.		\$16,200,000	4	0	1
	2	3	5	1	1	47.22	50	03 114 B0031W 15.00	16.121	17.088	Reconstruct US 31W (Louisville Road) to include curb, gutter, sidewalk and/or greenways connection, street lights, storm sewer/drainage and landscaping.		Update costs after 2015 Scoping Study completed. Assume widening to the center; curb, gutter, sidewalk, storm sewer, access control with median. Needs to complement recommendations for interchange with KY 446.	\$7,050,000	51	1	13
	1	3	8			47.22	44	03 114 D0526 10.00	0.000	2.803	Improve safety and reduce the travel time on KY 526 from KY 185 to the eastern intersection of Garrett Hollow Road.	KY 526 between KY 185 and the eastern intersection with Garrett Hollow road is a narrow two lane facility with numerous horizontal and vertical curves. This road was originally a farm to market road but has now become a collector due to the residential development in the area. This road is now a "cut through road" for motorists attempting to access US 31W, the schools (Warren East High, Warren East Middle, and Bristow Elementary) which are located on US 31W in this area, and Ephram White County Park which is located at the intersection with KY 1320. There is an entrance for the high school on KY 526. As the multimodal transpark is developed in this section of Warren County, the traffic volume is expected to increase.		\$10,420,000	5	0	3
	1	3	8			47.22	36	03 114 B0231 62.00	24.243	24.443	Improve the safety of the intersection at US 231-KY 626	The US 231 - KY 626 (East) intersection is located near the crest of a long vertical curve. This vertical curve is known locally as Hadley Hill. A safety (HES) construction project has been completed on a portion of this hill south of this intersection. This is a "T" intersection with KY 626 intersecting in a skew. The skew is of such magnitude that left turns from and right turns onto KY 626 are very difficult, especially for large vehicles. Sight distance is limited due to the crest of the vertical curve. The sight distance is not sufficient to allow for safe turning movements at the intersection. This is compounded by the skew, lack of turning lanes, and narrow width of KY 626. KYTC has recommended the reconstruction of the intersection at KY 626 (east).		\$600,000	0	0	0
	2	2	7		1	47.22	34	03 114 B0031W 67.00	18.085	20.905	Provide bicycle and pedestrian facilities in order to improve the safety on US 31W between KY 957 and US 68	US 31W between KY 957 and US 68 is a four lane facility. US 31W is a major route through this area, as indicated by the traffic volume. US 31W has been designated by the Kentucky Department of Highways as the route in this region to be the focus of a year long safety campaign. The industrial development at the property at the US 31W - US 68 intersection and the multimodal transpark on US 68 will increase the volume of large commercial vehicles in this area. There are three schools located along this roadway, as well as, numerous multi-family and/or low income housing units. There is a large volume of pedestrian and bicycle activity in this area. Many of the pedestrians are walking to school, commercial establishments, or places of employment.		\$3,300,000	32	0	14

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	1	3	8			47.22	14	03 114 B0231 60.00	23.156	23.356	Improve the safety of the intersection at US 231 & KY 626 (west).	The US 231 - KY 626 (West) intersection is located below the crest of a verticle curve. This is a "T" intersection. This intersection is located south of a verticle curve known locally as "Hadley Hill." Sight distance is limited due to the verticle curve and roadside obstructions. The sight distance is not sufficient to allow for safe turning movements at the intersection, especially for large vehicles. This is compounded by the lack of turning lanes and the narrow width of KY 626.		\$600,000	3	0	1
		5	6	1		44.44	72	03 114 D2632 10.00	4.110	5.057	Improve the safety of KY 2632 from Whitestone Quarry Road to US 231 and the KY 2632-US231 intersection.	KY 2632 between US 231 and Whitestone Quarry Road is a long vertical curve with several horizontal curves along the way. The road has recently been resurfaced and 18" penetrated shoulders added where possible. Although the truck percentage is unknown, it is believed to be low due to the fact that it would be very difficult for a large vehicle to travel on this road. This area has experienced significant growth in both subdivision and individual residences. The ADT is expected to increase. Safety is a great concern on this section of roadway. Two recent fatal crashes have increased this concern. The intersection of KY 2632 and US 231 also creates safety concerns. A horizontal curve on US 231 south of the intersection restricts sight distance. KY 2632 intersects US 231 in a skew of such magnitude that turning movements are difficult. This concern is compounded by the lack of turning lanes on either road.		\$3,400,000	8	0	3
	1	2	9			44.44	41	03 114 D0526 11.00	2.803	3.793	Improve the safety and reduce travel time on KY 526 from the eastern intersection of Garrett Hollow Road to KY 957.	KY 526 between the eastern intersection with the Garrett Hollow Road and KY 957 is a narrow two lane facility with numerous horizontal and verticle curves. The road was originally a farm to market road but has become a collector due to the residential development in the area. New subdivisions are now being developed in the area near the intersection with KY 957. Pedestrian activity is beginning to increase with the residential development. The road is now used as a "cut through road" for motorists attempting to access US 31W, the schools (Warren East High, Warren East Middle, and Bristow Elementary) that are located on US 31W in this area, and Ephram White County Park which is located at the intersection with KY 1320. As the multimodal transpark is developed in this section of Warren County, the traffic volume is expected to increase.		\$4,400,000	1	0	0
		5	6	1		44.44	39	03 114 D1435 1.00	0.000	14.039	IMPROVE KY-1435 FROM US-231 TO THE PROPOSED KY-263 BRIDGE CONNECTOR IN WARREN AND BUTLER COUNTIES	KY 1435 is a narrow two lane facility that extends from US 231 in Butler County to US 68 (Veteran's Memorial Boulevard) in Bowling Green. The Barren River runs parallel to KY 1435, acting as a natural divide by cutting off easy access to northern Warren County and southern Butler County. Residents living in this portion of Warren County wishing to utilize the Natcher Parkway must travel a great distance to Bowling Green to access an interchange. Improvements to KY 1435 will improve will reduce the travel time and distance for motorists in Warren and Butler Counties.		\$17,600,000	10	0	4
	1	2	9			44.44	27	03 114 D0526 12.00	3.793	5.646	Improve the safety and reduce the travel time on KY 526 between KY 957 TO KY 1320.	KY 526 between KY 957 and KY 1320 is a narrow, two lane facility. This road was originally a farm to market road but now the area around the KY 526 - KY 957 intersection is developing rapidly with substantial residential uses that spread into the City of Plum Springs. Pedestrian activity has begun to increase due to the residential development and the construction of the Ephram White County Park at the KY 526 - KY 1320 intersection. This road is now being used as a "cut through road" for motorists attempting to access US 31W or the schools (Warren East High, Warren East Middle, and Bristow Elementary) that are located on US 31W in this area. This is expected to increase as the multimodal transpark continues to develop in this section of Warren County. Safety is a concern on this roadway.		\$6,240,000	7	0	4

FINAL TAC RANKING (1-20)	HIGH	MEDIUM	LOW	INACTIVE	NO RESPONSE	TAC SCORE (OUT OF 100)	2015 TECHNICAL REVIEW SCORE (out of 100)	CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES
		4	7	1		41.67	39	03 114 B0068 10.00	10.816	14.771	Reconstruct US 68 (Veterans Memorial Ln) to include curb, gutter, sidewalk, greenways connection, street lights, storm sewer/drainage and landscaping.		Assume removal of existing shoulder, addition of storm sewer, curb, gutter, sidewalk, widening of two bridges for sidewalk on EB side, 10 entrance pavements. Limited utilities for anticipated roadway crossings. Limited ROW for perm drainage easements	\$5,900,000	83	1	30
		5	5	2		41.67	33	03 114 C0000 54.00	0.000	0.000	A new route around the eastern edge of Bowling Green has been proposed to address the existing and future congestion along the internal street network of the city, to improve connections among that network, and access to all parts of the city.	For over thirty years, the citizens of Bowling Green have discussed the need for a freeway highway that would be like a belt around the city. This new highway would connect all of the major roads that reach from outside of the city into the heart of Bowling Green. This road could quickly move many cars and trucks from one side of the city to the other. Much like the way a belt holds your pants in place by connecting all of the belt loops, the Outer Belt highway would pull the different sides of the city together. This specific need has been emphasized by the rapid residential commercial growth in this area of the community.	This cost estimate is a "marker" until finalization of selected corridor of this massive project.	#####	New route; No crash data		
		4	7	1		41.67	23	03 114 D0101 1.00	0.000	7.865	Improve the safety and reduce travel time on KY 101 between the Allen County Line and I-65	KY 101 between the Allen County Line and I-65 is a two lane facility with horizontal and verticle curves. This route serves as a connection between US 31E in Scottsville and I-65 at Smiths Grove. Much of the traffic is commuter traffic. This is expected to increase with the development of the multimodal transpark west of Smiths Grove. Historically, crashes have been a concern on this route at certain locations. The intersections with KY 1402, KY 1297, and US 68 have been identified at one time or another as "High Accident Locations" by the Kentucky Department of Highways. Flashing beacons have been installed at these locations by the Kentucky Department of Highways due to safety concerns. KYTC has recommended the reconstruction of KY 101 from the Allen County Line to the I-65 interchange in Smiths Grove.		\$32,800,000	18	2	8
	0	3	8	1		38.89	24	03 114 A0066 1.00	0.000	0.000	To provide a freeway connection from the L. B. Nunn Parkway to the William H. Natcher Parkway.	In 1991, the United States Congress passed a bill about an idea for new interstate highway from Washington, D.C. to southern California. Engineer, planners, and officials investigated the need for a new coast to coast highway to alleviate the stress on the other east-west interstates (I-40/I-81 and I-64). They decided that the entire road was not a good idea, but several sections of the new road were needed. One of these sections would link the states of West Virginia, Kentucky, and Missouri. Those working on the I-66 project began to plan on how to fill in the gaps so that an interstate highway could run from the West Virginia into our state connecting the cities of Pikeville, London, Somerset, Bowling Green, and Paducah, and then cross the Mississippi River into Missouri. The connection between the Nunn Parkway and the Natcher Parkway in this area was further investigated.	This cost estimate is a "marker" until finalization of selected corridor of this massive project. Costs could range from \$350 million to \$485 million for the total project.	#####	New route; No crash data		
	2	2			8	27.78	39	03 114 D0622 76.00	5.262	8.332	Reconstruct and widen KY 622 from Plano-Richpond Rd to US 231.	KY 622 between the Plano - Richpond Road and US 231 is a two lane facility. There are a number of horizontal curves on the road. One reverse turn situation is especially an area of concern. The road was originally a farm to market road, but has experienced a tremendous growth pattern. Residential development continues to occur. After construction of the interchange with the Natcher Parkway, the traffic volume will increase even more. At certain times traffic queues develop, especially at the intersection with US 231. Evidence of this can be seen by the construction of dual left turn lanes on KY 622 at the US 231 intersection. Crashes have been a problem at certain locations, especially the reverse turn location. The speed limit on this section of roadway was reduced to 45 MPH and a safety project (HES) was completed on the entire section of roadway to help with the safety issue.	3 lane rural to Natcher; 5 lane urban beyond. Some realignment at reverse curves (MP 6.4-6.8). Approx. 95 parcels. Proximity damages in narrow corridor areas.	\$21,200,000	23	0	11

FINAL TAC RANKING (1-20)	HIGH	MEDIUM	LOW	INACTIVE	NO RESPONSE	TAC SCORE (OUT OF 100)	2015 TECHNICAL REVIEW SCORE (out of 100)	CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES
	2	1	1		8	25.00	73	03 114 B0031W 10.00	12.789	12.834	Reconstruct the US 31W intersection with Broadway to accommodate left-turn lanes on each approach.	The intersection of US 31W and US 231X is the intersection of two major routes through Bowling Green. Both routes are four lane facilities with no turning lanes on any of the approaches. Due to the traffic volumes, types of vehicles, and lack of turning lanes, the traffic signal is split phased with each approach having an exclusive phase. The traffic signal, at this intersection is known locally as "the longest light in town. Traffic queues and congestion are common at the intersection. The intersection has been designated at different times as a "high accident location" by the Kentucky Department of Highways.	Costs per 2014 Downtown Circulation Study.	\$3,300,000	13	0	1
						0.00	41	03 114 A0065 52.00	14.797	14.897	Construct new interchange at KY 240.	I 65 between KY 100 (Exit # 6) in Simpson County and the Natcher Parkway (Exit #20) in Warren County is a heavily travelled facility. This section has recently been widened to six lanes. The barrier median wall could possibly hamper efforts by emergency personnel due to the adverse travel distance and time to get to an exit and then get back on in the opposite direction. An additional access point between these two interchanges would help relieve this problem. This would also assist maintenance efforts and reduce adverse travel time for many motorists in southern Warren County and northern Simpson County. The KY 240 area would seem to be a logical choice.	Construct new interchange with I-65 at KY 240 east of Woodburn	\$10,600,000	1	0	1
NOT RANKED								03 114 D0234 9.00	9.746	10.157	Minor widening or reconstruction on KY 234 east of I-65 from MP 9.746 near the Drakes Creek Bridge to the four lane section at MP 10.157		Active project scheduled for L	\$5,850,000	3	0	1
NOT RANKED								03 114 B0031W 62.00	4.980	6.684	Widen to 5 lanes from 1.0 miles south of KY 242 to Dillard Road.	US 31W between a point 0.3 mile south of KY 242 and the Dillard Road is a two lane facility. Turning lanes exist only at the intersection with KY 242 and are the result of a safety (HES) project. US 31W is one of the major non-interstate, north-south routes through Warren County. The road has been designated as a safety corridor by the Kentucky Department of Highways. The Warren County School System has constructed a high school, middle school, and sports fields at the intersection of 242 and US 31W.		\$15,000,000			
NOT RANKED								03 114 B0031W 67.50	18.722	18.966	This project is intended to realign the current offset intersections of Moorman Lane and Bristow Road at US 31W.			\$1,175,000			
NOT RANKED								03 114 B0231 58.00	9.457	10.455	Improve the capacity and reduce the number of crashes on US 231 between KY 884 (Three Springs Rd) and US 231X/KY 880.	US 231 between I-65 and US 231X/KY 880 is a five lane facility with 12' lanes and 10' shoulders. The center lane is designated as a left turn only lane. The route is a major commuter facility with the Greenwood Mall and numerous other traffic generators located adjacent to it. At certain times, especially during the afternoon rush hour, it experiences near gridlock conditions. Historically the road has had the highest number of crashes in the region. Various portions of the road have been designated as high accident locations by the Kentucky Department of Highways. Continued commercial and residential development in southern areas of the county will only increase the problems with congestion and safety. KYTC D-3 has recommended widening to 6 lanes from I65 to KY 880 in Bowling Green. See 2000 Bowling Green Transportation Plan and 1998 Advance Planning Study.		\$675,000			

FINAL TAC RANKING (1-20)	HIGH	MEDIUM	LOW	INACTIVE	NO RESPONSE	TAC SCORE (OUT OF 100)	2015 TECHNICAL REVIEW SCORE (out of 100)	CONTROL #	BMP	EMP	DESCRIPTION / PURPOSE STATEMENT	NEEDS STATEMENT	COST ESTIMATE ASSUMPTIONS	COST ESTIMATE	TOTAL CRASHES (2014)	FATALITIES	INJURIES
NOT RANKED								03 114 D00884 2.00	5.516	7.438	Improve safety and mobility on KY 884 from the intersection with Long Road to intersection with Natcher Parkway overpass.	KY 884 between Long Road and the Natcher Parkway overpass is a narrow two lane facility with 9' lanes and 3' shoulders. KY 884 is developing rapidly with numerous large subdivisions emerging, as well as private residences and small commercial development. With high volumes of traffic and limited shoulder widths, safety is a concern on this roadway. Also, a private elementary school has recently been constructed on KY 884 adding to the safety concern and volumes of traffic are expected to increase due to the new developments in the area.		\$9,000,000			
NOT RANKED								03 114 D00884 3.00	7.400	8.700	Improve safety and mobility on KY 884 from the Natcher Parkway overpass to MP 8.700 near Flealand.	KY 884 from the Natcher Parkway overpass to MP 8.700 near Flealand is a major urban connection from the developing residential area in southern Warren County to the US 231 (Scottsville Road) commercial/entertainment neighborhood. Faced with increasing traffic volumes, this narrow two lane roadway no longer operates as rural connection and the lack of dedicated left turn opportunities and shoulders creates issues in safety and mobility for motorists and pedestrians.		\$14,500,000			
NOT RANKED								03 114 D9007 74.00	1.604	1.704	Provide additional access to the Natcher Parkway and reduce congestion and travel time on US 231, KY 884, and US 31W.	The Natcher Parkway between I 65 and US 31W is a four lane facility. The traffic volume is expected to increase upon the completion of the Natcher Parkway Extension Project. This project will extend the parkway to intersect with US 231 south of Bowling Green and will allow motorists to avoid US 231 (Scottsville Road) in Bowling Green. An access point on the parkway between I 65 and US31W would allow these motorists to reach various destinations without using either US 231 (Scottsville Road) or US 31W (Nashville Road). It would also allow motorists in the heavily populated Elrod Road and Three Springs Road areas to access the parkway, thus reducing the traffic volumes on both US 231 and US 31W. This would help relieve the congestion experienced on both those routes. Since KY 884 is too close to the I 65 interchange and environmental issues exist at that location, Elrod Road would appear to be the logical choice.		\$9,000,000			
NOT RANKED								03 114 D0526 14.00	5.546	5.746	Reconstruct KY 526 at the intersection with KY 1320 to correct the horizontal alignment issue.	KY 526 is a connection providing access to the residential and agricultural activities in northeastern Warren County including access to Warren East High and Middle Schools and Bristow Elementary School and Ephram White Park. The intersection of KY 526 with KY 1320 has the horizontal alignment issues and limited sight distance.	Design will be relatively simple and done in-house. ROW involves 3-4 parcels mostly strip taking, but the Girken property requires a corner of the lot for realignment. Utilities will be impacted but should be relatively minor depending on alignment	\$650,000			
NOT RANKED								03 114 D9007 75.00	7.222	7.622	Improve the safety and capacity of the existing interchange at Natcher Parkway and US 231.	The removal of toll booths on the Natcher Parkway at Exit 7 (US 231) has created a congestion and safety problem at this cloverleaf interchange. The existence of the toll booths provided a control of traffic entering and exiting the Natcher Parkway. The removal of the booths and the current design of the ramps has created a situation where vehicles entering the Parkway will interfere with vehicles exiting the Parkway. With the removal of the toll booths, traffic has increased since this is now a no-cost alternative which additional motorists will choose when they navigate around the western end of Bowling Green. The removal of the toll booths have also resulted an increase in the speed of vehicular traffic, decreasing safety, especially in this area with traffic entering and exiting at the same point.		\$7,800,000			
NOT RANKED								03 114 B0031W 2.00	1.464	4.258	Minor widening from KY 240 (WOODBURN) to Buchanan Park at MP 4.258.			\$19,050,000	8	0	2

FINAL PC RANKING (1-20)	FINAL TAC RANKING (1-20)	DESCRIPTION / PURPOSE STATEMENT	BMP	EMP	COST ESTIMATE	Click Link for Online Map	CONTROL #
1	1	MAJOR WIDENING/RECONSTRUCTION ON NASHVILLE RD FROM CAMPBELL LANE (US 231) TO UNIVERSITY BOULEVARD (US 231X) at Roundabout.	10.561	11.688	\$8,800,000	http://www.warrenpc.org/mpo/pdf/03114B0031W63.10.pdf	03 114 B0031 1459.0 (03 114 B0031W 63.10)
		Project includes realigning the intersections with Nashville Rd (US 31W) at Highland Way and Emmett Avenue.	10.900	11.000	\$2,550,000	http://www.warrenpc.org/mpo/pdf/03114B0031W11.00.pdf	03 114 B0031W 11.00
2	3	Major widening with urban section on 31W Bypass from Fairview Ave to Louisville Rd (US 68).	13.699	14.670	\$14,100,000	http://www.warrenpc.org/mpo/pdf/03114B0031W66.00.pdf	03 114 B0031W 66.00
3	8	Southwest Parkway - New Construction from US 68 to US 31W SW of Bowling Green including installation of a bridge at the intersection with the R.J. Corman Railroad. See 2000 Bowling Green transportation plan.	0.000	2.000	\$26,600,000	http://www.warrenpc.org/mpo/pdf/03114C000056.00.pdf	03 114 C0000 56.00
4	2	EXTEND SHIVE LANE TO LOVERS LANE (KY 880) IN BOWLING GREEN.	0.600	0.632	\$3,820,000	http://www.warrenpc.org/mpo/pdf/03114E99991.00.pdf	03 114 E9999 988.00 (03 114 E9999 1.00)
5	4	Improve mobility and reduce the number of crashes on Smallhouse Road from Scottsville Road (US231X) to Cave Mill Road (CS1401).	0.656	3.227	\$23,800,000	http://www.warrenpc.org/mpo/pdf/03114C000061.00.pdf	03 114 E9999 3.00 (03 114 C0000 61.00)
6	5	Improve access along Scottsville Rd (US 231) from Campbell Ln to Plano Rd.	7.885	10.455	\$44,950,000	http://www.warrenpc.org/mpo/pdf/03114B0231_7.00.pdf	03 114 B0231 7.00
7	6	Reduce the congestion and improve the safety along section of US 231X from 31W Bypass to Campbell Ln intersection.	0.000	2.066	\$11,250,000	http://www.warrenpc.org/mpo/pdf/03114B0231X56.10.pdf	03 114 B0231X 56.10
8	7	Reduce the congestion and improve safety on this section of Russellville Rd (US 68X) from Veteran's Memorial (US 231/KY880) to US 231X (University Boulevard).	0.000	1.524	\$15,000,000	http://www.warrenpc.org/mpo/pdf/03114B006862.00.pdf	03 114 B0068 62.00
9	9	Widen northbound US 231X to accommodate two through lanes and a left-turn lane (intersection of University Blvd and Avenue of Champions).	2.445	2.526	\$2,000,000	http://www.warrenpc.org/mpo/pdf/03114B0231X_2.00and0068X_2.00.pdf	03 114 B0231X 2.00
		Widen southbound US 68X to accommodate two through lanes and a right-turn lane (intersection of University Blvd and Avenue of Champions).	1.524	1.626	\$2,000,000	http://www.warrenpc.org/mpo/pdf/03114B0231X_2.00and0068X_2.00.pdf	03 114 B0068X 2.00
10	10	MAJOR WIDENING/RECONSTRUCTION OF CEMETERY ROAD (KY-234) FROM FOUNTAIN TRACE TO ROGER PORTER ROAD.	7.878	9.625	\$10,750,000	http://www.warrenpc.org/mpo/pdf/03114D023474.80.pdf	03 114 D0234 1532.0 (03 114 D0234 74.80)
11	11	MAJOR WIDENING of US 31W Bypass from UNIVERSITY BLVD TO FAIRVIEW AVE (KY 234).	11.805	13.699	\$9,800,000	http://www.warrenpc.org/mpo/pdf/03114B0031W64.00.pdf	03 114 B0031W 64.00

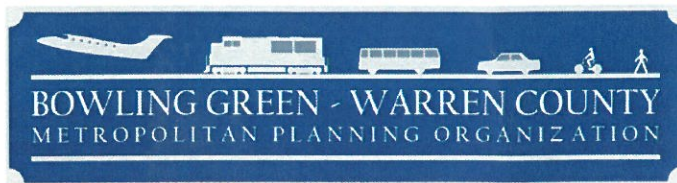
FINAL PC RANKING (1-20)	FINAL TAC RANKING (1-20)	DESCRIPTION / PURPOSE STATEMENT	BMP	EMP	COST ESTIMATE	Click Link for Online Map	CONTROL #
12	12	Accommodate increased traffic from the residential and industrial development north of Bowling Green along the section of US 31W (Louisville Rd) from US 68 to Mizpah Road.	21.148	22.490	\$4,861,000	http://www.warrenpc.org/mpo/pdf/03114B0031W69.00.pdf	03 114 B0031W 69.00
13	13	Reconstruct US 31W from Old Porter Pike to KY 957 including the reconstruction of the interchange with KY 446.	16.559	18.085	\$32,000,000	http://www.warrenpc.org/mpo/pdf/03114B0031W16.00.pdf	03 114 B0031W 16.00
14	14	IMPROVE THE SAFETY AND CAPACITY ON US-31W AT THE INTERSECTION OF 10TH AVENUE.	13.000	13.100	\$1,575,000	http://www.warrenpc.org/mpo/pdf/03114B0031W1.00.pdf	03 114 B0031W 1.00
15	15	Improve the safety and reduce travel time on KY 622 (Plano Rd) from 0.1 mile south of Collett Road to Dewey Lake Road.	6.454	6.895	\$2,000,000	http://www.warrenpc.org/mpo/pdf/03114D062276.50.pdf	03 114 D0622 76.50
16	16	Reconstruction of I-65 at US 68 to include a full interchange at Exit 36.	35.500	35.600	\$7,100,000	http://www.warrenpc.org/mpo/pdf/03114A0065_35.00.pdf	03 114 A0065 35.00
17	17	Improve safety along US 68X by relocating the US 68X (Kentucky St/Adams St) split near Old Morgantown Rd, as well as widen Adams St to accommodate a five lane section and convert Adams Street and Kentucky Street to two-way streets.	2.000	2.300	\$22,700,000	http://www.warrenpc.org/mpo/pdf/03114B0068X_1.00.pdf	03 114 B0068X 1.00
18	18	Improve the connection and mobility to US 231 by connecting KY 2158 (Cumberland Trace) to Cherry Farm Ln.	0.000	0.500	\$4,950,000	http://www.warrenpc.org/mpo/pdf/03114D2158_1.00.pdf	03 114 D2158 1.00
19	19	Reconstruct the US 31W intersection with Broadway to accommodate left-turn lanes on each approach.	12.789	12.834	\$3,300,000	http://www.warrenpc.org/mpo/pdf/03114B0031W_10.00.pdf	03 114 B0031W 10.00
20	20	Extend the new I-65 Connector from its intersection with US 31W, north toward Girkin Boiling Springs Road to accommodate major development possibilities north of Bowling Green.	0.000	0.000	\$24,000,000	http://www.warrenpc.org/mpo/pdf/03114C0000_1.00.pdf	03 114 C0000 1.00

APPENDIX C

MPO Public Participation Process

- Agency and Public Comments
- MPO 2016-2040 MTP Questionnaire
- MPO 2040 MTP Public Meetings and Notifications

Agency and Public Comments



US Federal Transit Administration
Regional Administrator
Atlanta Federal Center
Suite 17T50
61 Forsyth Street, SW
Atlanta, GA 30303

To Whom it May Concern:

The Bowling Green-Warren County Metropolitan Planning Organization (MPO) is requesting your agency's input and comments regarding the 2015-2040 Metropolitan Transportation Plan (MTP) that is currently under development. The MTP is a fiscally constrained document that addresses the future needs of the urbanized area, considering all modes of transportation including highway, bicycle, pedestrian, and public transportation. The Bowling Green-Warren County MPO has assembled a team to evaluate the future needs of our area. The primary goal of the 2015-2040 MTP is to capture existing and proposed transportation facilities and services that are necessary to meet the transportation needs of Bowling Green and Warren County by the year 2040.

We ask that you identify specific issues or concerns of your agency that could affect the development of the 2015-2040 Metropolitan Transportation Plan. We believe that early identification of issues and concerns can potentially minimize negative impacts on the development of the plan as we move forward. In particular, we are asking that you provide the following information:

- Comments on uncompleted existing projects or needed projects that are not included in the plan;
- Significant issues or concerns in Bowling Green and Warren County that may need to be addressed in the 2040 Metropolitan Transportation Plan; and
- Any development plans your agency or organization has ongoing or is aware of, and any environmental issues involved.

You can review the existing 2010-2035 Metropolitan Transportation Plan at:

<http://www.warrenpc.org/mpo/MetropolitanTransportationPlan.php>

Sincerely,

A handwritten signature in blue ink that reads "Rachel Hetzler". The signature is fluid and cursive, with a long horizontal line extending from the end.

Rachel Hetzler
MPO Coordinator

BOWLING GREEN-WARREN COUNTY MPO
1141 STATE STREET, BOWLING GREEN, KY 42101
[PHONE] 270.842.1953 [FAX] 270.842.1282
WWW.WARRENPC.ORG/MPO



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059
FAX: (502) 315-6677
<http://www.lrl.usace.army.mil/>

April 24, 2015

Operations Division
Regulatory Branch (South)
ID No. LRL-2015-328-pjl

Ms. Rachel Hetzler
MPO Coordinator
Bowling Green - Warren County MPO
1141 State Street
Bowling Green, Kentucky 42101

Dear Ms. Hetzler:

This is in response to your letter requesting environmental review for the 2015-2040 Metropolitan Transportation Plan (MTP for Bowling Green and Warren County, in Kentucky.

The U.S. Army Corps of Engineers (USACE) exercises regulatory authority under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act, 1972 (33 USC 1344) for certain activities in "waters of the United States (U.S.)." Section 404 requires that a Department of the Army (DA) permit be obtained for the placement or discharge of dredged and/or fill material into "waters of the U.S.," including wetlands, prior to conducting the work.

"Waters of the U.S.," include hydrologically connected lakes, rivers and stream channels exhibiting an Ordinary High Water Mark (OHWM), wetlands, sloughs, wet meadows and wetlands adjacent to "waters of the U.S." The OHWM elevation is the line on the bank established by the changing water surface and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and other indications as determined upon inspection of the area.

Section 10 requires that a DA permit be obtained for any work that occurs in, under, or over navigable water. These waters include all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. Section 10 waters located in Warren County include Barren River and portions of its tributaries - Gasper River, Drakes Creek, Trammel Fork and West Fork Drakes Creek (tributaries to Drakes Creek).


Based on the information provided by you, it does appear that "waters of the U.S." are located within the project boundaries. "Waters of the U.S." may include any stream channels (perennial, intermittent, ephemeral) and/or hydrologically connected lakes exhibiting an OHWM and any adjacent wetlands within the proposed project area. A jurisdictional determination must be completed if a proposed project would impact any "waters of the U.S.," including wetlands.

Our comments on this project are limited to only those effects which may fall within our area of jurisdiction and thus does not obviate the need to obtain other permits from State or local agencies.

If the project would necessitate the discharge of dredged or fill material into any "waters of the U.S.," including jurisdictional wetlands, then you should submit a DA permit application for review by this office. We will need a completed DA permit application along with additional details regarding the project's design, scope, photos, construction methods, purpose and the locations (coordinates) of all "waters of the U.S." Please allow sufficient time in your preconstruction schedule for the processing of a DA permit application. Copies of DA permit application forms can be obtained by writing to the above address ATTN: CELRL-OPF-S or online at <http://www.lrl.usace.army.mil/Missions/Regulatory.aspx>.

If we can be of any further assistance, please contact us by writing to the above address, ATTN: CELRL-OPF-S, or by calling me at 502-315-6693.

Sincerely,



Pam Loeffler
Regulatory Specialist
Regulatory Branch

Transportation Questionnaire
2016-2040 Metropolitan Transportation Plan



TRANSPORTATION QUESTIONNAIRE

2016-2040 Metropolitan Transportation Plan

Public Meeting #1 - June 9, 2015

The Bowling Green - Warren County Metropolitan Planning Organization, the transportation planning agency for the Bowling Green - Warren County urbanized area, is currently updating its 2016-2040 Metropolitan Transportation Plan. The draft plan is currently under development and will ultimately be used as a guide for transportation improvements through the year 2040.

Your opinions are very important to us, as transportation issues affect **everyone** in our community. We would like your input on a variety of transportation issues impacting the Bowling Green - Warren County area. Please take a few minutes to answer the following questions and share your suggestions regarding transportation in our region. Thank you!

- 1) Please rate the following **personal transportation issues** on a scale of 1 to 5 (please circle one number per statement).

	Unacceptable	1	2	3	4	5	Excellent
Your commute time to work (length of time per trip).....		1	2	3	4	5	
Reliability of commute time (time is similar day-to-day).....		1	2	3	4	5	
Time and reliability on non-commute trips (shopping, recreation, etc).....		1	2	3	4	5	
Weekend traffic congestion on area roadways.....		1	2	3	4	5	
Safety of area roadways.....		1	2	3	4	5	
Your alternatives to driving for routine trips (walking, bicycling, etc).....		1	2	3	4	5	
Condition of existing roads and bridges.....		1	2	3	4	5	
Availability of bus service in your area.....		1	2	3	4	5	
Availability of sidewalks in your area.....		1	2	3	4	5	
Quality of life in the community.....		1	2	3	4	5	

- 2) Please rate the following **community quality of life** issues on a scale of 1 to 5 (please circle one number per statement).

	Unimportant	1	2	3	4	5	Extremely Important
Safety for drivers.....		1	2	3	4	5	
Cross-town mobility.....		1	2	3	4	5	
Walkable neighborhoods and commercial centers.....		1	2	3	4	5	
Increased safety for pedestrians and bicyclists.....		1	2	3	4	5	
Support of neighborhood business.....		1	2	3	4	5	
Coordinated land use and transportation planning.....		1	2	3	4	5	
Protection of community character.....		1	2	3	4	5	
Protection of historic resources (i.e. significant buildings).....		1	2	3	4	5	
Preservation of the natural environment (water, air, habitat, etc).....		1	2	3	4	5	
Improvements to air quality.....		1	2	3	4	5	
Security of the transportation system.....		1	2	3	4	5	

- 3) Please rate the following **transportation improvement strategies** on a scale of 1 to 5 (please circle one number per statement).

	Least Effective	1	2	3	4	5	Most Effective
Improved access management (driveway spacing, turn lanes).....	1	2	3	4	5		
Improved traffic signals (timing, placement, coordination).....	1	2	3	4	5		
Improved intersections (layout, lanes).....	1	2	3	4	5		
Widening of existing roads.....	1	2	3	4	5		
Construction of new roads.....	1	2	3	4	5		
Improvement of freight movement through the area.....	1	2	3	4	5		
Improved bicycle facilities (routes, lanes, parking).....	1	2	3	4	5		
Improved pedestrian facilities (sidewalks, signals, paths).....	1	2	3	4	5		
Expanded or improved public transportation opportunities and facilities.....	1	2	3	4	5		
Promotion of alternative work hour programs (shift work schedules to off-peak hours; fewer work days per week).....	1	2	3	4	5		
Promotion of ride sharing (i.e. car/van pools for large employment centers).....	1	2	3	4	5		

- 4) **Highway Concerns.** Please provide three highway-related problem locations (i.e. intersection of US 31W and Broadway, Scottsville Road, etc), and rank them in order of importance to you, with 1 being your top priority.

1. _____
2. _____
3. _____

- 5) **Non-Highway Transportation Concerns.** Please provide three non-highway-related transportation concerns (public transportation availability, unsafe location for pedestrians, etc), and rank them in order of importance to you, with 1 being your top priority.

1. _____
2. _____
3. _____

PLEASE TELL US ABOUT YOURSELF:

1. What is your HOME zip code? _____
2. What is your WORK or SCHOOL zip code _____
3. Do you have regular access to a motor vehicle for work and other trips? _____

WE APPRECIATE YOUR TIME AND INPUT WITH THIS SURVEY. THANK YOU FOR YOUR ASSISTANCE!

BOWLING GREEN-WARREN COUNTY METROPOLITAN PLANNING ORGANIZATION
1141 STATE STREET
BOWLING GREEN, KY 42101
(270) 842-1953

THIS SURVEY IS ALSO AVAILABLE ONLINE...TELL YOUR FRIENDS AND FAMILY, AS WE APPRECIATE THEIR INPUT, AS WELL!

WWW.WARRENPC.ORG/MPO

Metropolitan Transportation Plan 2016-2040
Public Meeting #1
Meeting Advertisements and Materials



**BOWLING GREEN-WARREN COUNTY METROPOLITAN PLANNING ORGANIZATION
SEEKING PUBLIC INPUT ON TRANSPORTATION ISSUES**

Tuesday, June 2, 2015 – The Bowling Green-Warren County Metropolitan Planning Organization will hold a public forum Tuesday, June 9, 2015, to receive the community's input on transportation issues. The forum will be held from 4 to 6 p.m. in the second floor conference room of the City-County Planning Commission office, located at 1141 State Street.

The MPO, part of the Planning Commission, is updating its 2016-2040 Metropolitan Transportation Plan (MTP), which will serve as a guide for transportation improvements. According to Planner Rachel Hetzler, "The MTP identifies existing and proposed transportation facilities and services that are necessary to meet the transportation needs of Bowling Green and Warren County." The MPO values public comment as part of this process. The purpose of the forum is to collect input on a variety of transportation issues involving highway, bicycle, pedestrian, and public transportation.

The community's opinions are important to us, as transportation issues affect everyone in our community. "Without community input, the plan will not adequately reflect the desires of our community. Public participation is a central component to effective planning and making our city a better place," said MPO Coordinator Karissa Lemon. Community members may also fill out the MPO's transportation questionnaire to voice their opinions. The questionnaire is available at <https://www.surveymonkey.com/s/QRPLDQZ>.

For more information on the MPO and a copy of the current MTP, please visit <http://www.warrenpc.org/mpo>, or contact Karissa at 270-842-1953 or karissa.lemon@bgky.org.

###

About the Bowling Green-Warren County Metropolitan Planning Organization:

On June 3, 2003, the Governor of Kentucky designated the Bowling Green-Warren County MPO. Its boundary includes the Bowling Green urban area as well as the balance of Warren County. The MPO is the transportation policy-making organization for Bowling Green and Warren County. The MPO reviews the transportation plans and programs and annually endorses a course of action for implementing these plans.

About the City-County Planning Commission of Warren County:

Formed in 1953, the City-County Planning Commission of Warren County is a joint planning agency serving Warren County, Bowling Green, and the four incorporated cities of Oakland, Plum Springs, Smiths Grove, and Woodburn. The Planning Commission provides a variety of services to the public, including community planning. For more information, visit <http://warrenpc.org/>, or call 270-842-1953. The Planning Commission is located at 1141 State Street, Bowling Green, Ky. 42101.

First Day

**BG-WC
Metropolitan
Planning
Organization
(MPO) Public
Notice:**

The BG-WC MPO will hold a public forum from 4-6 PM, Tuesday, June 9, 2015 in the 2nd floor conference room of the City-County Planning Commission office, 1141 State Street, Bowling Green, KY.

The MPO is currently updating its 2016-2040 Metropolitan Transportation Plan (MTP). The primary goal of this MTP update is to capture existing and proposed transportation facilities and services that are necessary to meet the transportation needs of Bowling Green and Warren County by the year 2040. The purpose of this forum is to collect input on a variety of transportation issues involving highway, bicycle, pedestrian and public transportation. You can review the existing 2010-2035 MTP at: http://www.warren-pc.org/mpo/pdf/Metro_Trans_Plan2010-2035.pdf

Your opinions are very important to us, as transportation issues affect everyone in our community. We invite you to fill out our transportation questionnaire which can be found at:

<https://www.surveymonkey.com/s/QRPLDQZ>

Participation is actively sought from the following groups: minority, elderly, low income, disabled and persons with limited English speaking ability.

An interpreter for the deaf and hard of hearing will be provided, if needed. For additional information or to request an interpreter, please contact the MPO, at (270) 842-1953. If you have a disability for which the MPO needs to provide accommodations please notify us of your requirements by June 4, 2015.

Rachel Hetzler,
MPO Coordinator
Bowling Green-
Warren County
MPO
1141 State Street
Bowling Green, KY
42101
(270) 842-1953
rachel.hetzler@bgky.org

Metropolitan Transportation Plan 2016-2040
Public Meeting #2
Meeting Advertisements and Materials



**BOWLING GREEN-WARREN COUNTY METROPOLITAN PLANNING ORGANIZATION
SEEKING PUBLIC INPUT ON TRANSPORTATION PLAN DRAFT**

September 6, 2015 – The Bowling Green-Warren County Metropolitan Planning Organization (MPO) will hold a public forum Tuesday, September 15, 2015, to receive the community's input on a transportation plan draft. The forum will be held from 4 to 6 p.m. in the second floor conference room of the City-County Planning Commission office, located at 1141 State Street.

The MPO is updating its 2016-2040 Metropolitan Transportation Plan (MTP), which will serve as a guide for transportation improvements. According to Planner Rachel Hetzler, "After our first public meeting regarding the MTP, MPO staff evaluated the concerns expressed by community members, as well as feedback received from our transportation questionnaire, and worked diligently to address these issues within the update of the document. We look forward to meeting once again with the public to make sure the final draft of the MTP best serves the needs of the Bowling Green and Warren County community."

The MPO values public comment as part of the update process. The purpose of the forum is to collect input on the MTP draft, which addresses a variety of transportation issues involving highway, bicycle, pedestrian, and public transportation.

"The upcoming forum will be the second opportunity for the public to participate in the planning process of the MTP update. While public comment is always welcomed by the MPO, participation in the upcoming meeting will allow the community to interact with staff and express any concerns regarding the draft of the MTP," said MPO Coordinator Karissa Lemon.

A public comment period will open beginning September 11, 2015, and ending October 10, 2015. The comments received from the public both at the meeting and throughout the public comment period will be taken into consideration during the finalization of the MTP.

For more information on the MPO, a copy of the current MTP, or to comment, please visit <http://www.warrenpc.org/mpo>, or contact Karissa at 270-842-1953 or karissa.lemon@bgky.org.

###

About the Bowling Green-Warren County Metropolitan Planning Organization:

On June 3, 2003, the Governor of Kentucky designated the Bowling Green-Warren County MPO. Its boundary includes the Bowling Green urban area as well as the balance of Warren County. The MPO is the transportation policy-making organization for Bowling Green and Warren County. The MPO reviews the transportation plans and programs and annually endorses a course of action for implementing these plans.

General

First Day

**BG-WC
Metropolitan
Planning
Organization
(MPO)
Public Notice:**

The BG-WC MPO will hold a public forum from 4 to 6 p.m., Tuesday, September 15, 2015, in the second floor conference room of the City-County Planning Commission office, 1141 State Street, Bowling Green, KY.

The MPO is currently updating its 2016-2040 Metropolitan Transportation Plan (MTP). The primary goal of the MTP update is to capture existing and proposed transportation facilities and services that are necessary to meet the transportation needs of Bowling Green and Warren County by the year 2040. The purpose of the forum is to collect input from the public on the MTP draft, which addresses a variety of transportation issues involving highway, bicycle, pedestrian, and public transportation. You can review the draft 2016-2040 MTP at: <http://warrenpc.org/mpo/pdf/2040DraftMTP.pdf>.

Participation is actively sought from the following groups: minority, elderly, low income, disabled, and persons with limited English speaking ability.

An interpreter for the deaf and hard of hearing will be provided, if needed. For additional information or to request an interpreter, please contact the MPO at 270-842-1953. If you have a disability for which the MPO needs to provide accommodations, please notify us of your requirements by September 8, 2015.

Karissa Lemon,
MPO Coordinator
Bowling Green-
Warren County
MPO
1141 State Street
Bowling Green, KY
42101
270-842-1953
karissa.lemon@bgky.org



Kentucky Transportation Cabinet
Division of Planning
200 Mero Street 5th Floor West
Frankfort, KY 40601

To Whom it May Concern:

The Bowling Green-Warren County Metropolitan Planning Organization (MPO) is requesting your agency's input and comments regarding the Draft 2016-2040 Metropolitan Transportation Plan (MTP). The MTP is a fiscally constrained document that addresses the future needs of the urbanized area, considering all modes of transportation including highway, bicycle, pedestrian, and public transportation. The Bowling Green-Warren County MPO has assembled a completed draft of the 2016-2040 MTP, capturing existing and proposed transportation facilities and services that are necessary to meeting the transportation needs of the MPO area by the year 2040.

We ask that your agency review the Draft 2016-2040 MTP and notify the MPO of any comments or concerns you may have regarding this draft document. We believe that participation from all facets of our community, in conjunction with state and federal agencies, are a critical part in planning for the future of our transportation system. The Draft 2016-2040 MTP will be available for public review and comment from September 11, 2015 through October 10, 2015.

You can review the Draft 2016-2040 Metropolitan Transportation Plan at:

<http://warrenpc.org/mpo/pdf/2040DraftMTP.pdf>

Thank you for your cooperation in this update process.

Sincerely,

A handwritten signature in purple ink that reads "Karissa Lemon". The signature is written in a cursive, flowing style.

Karissa Lemon
MPO Coordinator

NOTICE

THE
CITY-COUNTY
PLANNING
COMMISSION
OF WARREN
COUNTY
KENTUCKY

ANNOUNCEMENTS

The following subdivisions have been filed for preliminary approval with the City-County Planning Commission. Written comments may be received from the general public by the Planning Commission's Director for a period of five (5) days from the date of this publication.

1. William T. Hey has filed a subdivision entitled **Cherry Tree Subdivision** - Revision of Lots 7 & 7-1 containing two (2) lots totaling 6.609 acres located at 328 Motley Lane.

2. Browning Investors, LLLP has filed a subdivision entitled **Browning Center Subdivision** - Revision of Lot 2-1 & 4 containing one (1) lot totaling 1.83 acres located on Mel Browning Street.

3. Ronnie & Betty Brooks have filed a subdivision entitled **Brooks' Hunts Bend Subdivision** - Revision of Lots 4 & 5 containing two (2) lots totaling 15.45 acres located on Hunts Bend Road.

Bowling Green
and Warren
County
Historic
Preservation
Board
Announces

A regularly scheduled meeting will be held on Thursday, September 24, 2015 at 5:00 p.m. at the City-County Planning Commission office, 1141 State Street, Bowling Green, Kentucky, to review:

1. 2015-15-COA:
1403 State Street -
New Construction

A copy of the application may be seen at the City-County Planning Commission office, 1141 State Street, Bowling Green, Kentucky. Phone: (270) 842-1953.

BOWLING GREEN-WARREN COUNTY
METROPOLITAN PLANNING ORGANIZATION

NOTICE

BOWLING GREEN-WARREN COUNTY
METROPOLITAN PLANNING
ORGANIZATION
SEEKING PUBLIC INPUT ON
METROPOLITAN TRANSPORTATION PLAN

September 11, 2015 – The Bowling Green-Warren County Metropolitan Planning Organization, the transportation planning agency for the Bowling Green-Warren County urbanized area, has prepared the Draft 2016-2040 Metropolitan Transportation Plan (MTP). The Draft 2016-2040 MTP will be available for public review and comment from September 11, 2015, through October 10, 2015, on the BGWC website at <http://warrenpc.org/mpo/pdf/2040DraftMTP.pdf> and at the following locations:

Bowling Green City Hall, 1001 College Street
Bowling Green-Warren County Planning Commission, 1141 State Street
Office of the Warren County Judge-Executive, 429 East 10th Ave, Suite 201
Kentucky Transportation Cabinet – District 3, 900 Morgantown Road

The MTP is a long-range transportation plan that addresses the future needs of the Bowling Green-Warren County MPO area. Analyzing trends that will affect the BGWC transportation system over the next 25 years, the MTP helps guide decisions for funding and implementation of transportation projects. It is approved by the MPO Committees, the Governor of Kentucky and/or the Kentucky Transportation Cabinet.

Participation is actively sought from the following groups: minority, elderly, low income, disabled, and persons with limited English speaking ability. For more information or for special accommodations, please contact the MPO at 270-842-1953.

All comments directed to:
MPO Coordinator
Bowling Green-Warren County MPO
1141 State Street
Bowling Green, KY 42101
270-842-1953

APPENDIX C: Public and Stakeholder Comments

2016-2040 Metropolitan Transportation Plan

Agency/Public	Comments
The Kentucky Heritage Council - State Historic Preservation Office	The agency stated that many of the projects listed in the draft will invoke the Section 106 process, being they will have federal funding. No specific comments were made regarding the draft document, but the agency requested to review projects on a case-by-case basis.
Resident of Wilkinson Trace Area Apartments - Bowling Green	This resident expressed concerns for an improved public transportation system. It was suggested that more advertisement be made to make Bowling Green residents aware of the availability of public transportation as well as promoting special discounts for transit passes. This resident also suggested better use of a public transportation website, in addition to analyzing the effective use of routes. Overall, the resident is supportive of the current system, but would like to see greater use and awareness of all of the Bowling Green community.
U.S. Department of the Interior – Fish & Wildlife Service	<p>The Service reviewed the 2016-2040 MTP projects with regards to the effects that may impose wetlands and/or other jurisdictional waters. It is recommended that project plans be developed to avoid impacting wetland areas and/or streams. The Service reserves the right to review any required federal or state permits at the time of public notice issuance.</p> <p>The Service also evaluated the potential for all the direct, indirect, and cumulative effects of a proposed project on federally listed species. A list of potential threatened and/or endangered species within the project vicinity was provided, as well as a series of recommendations related to these species. No other comments were made.</p>