Paducah-McCracken County Transportation Study

Final Report

Submitted to:
Kentucky Transportation Cabinet
Division of Multimodal Programs
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March 2002

JORDAN JONES & GOULDING

KENTUCKY TRANSPORTATION CABINET

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JORDAN JONES & GOULDING

WORKING TO BETTER OUR COMMUNITIES AND ENVIRONMENT

Paducah-McCracken County Transportation Study

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CHAPTER I – INTRODUCTION

The Kentucky Transportation Cabinet (KYTC), through its Division of Multimodal Programs, has the responsibility for assisting urban areas of the Commonwealth with an examination of their transportation systems. To this end, the Cabinet, in cooperation with local governmental officials and the U.S. Department of Transportation, has sponsored urban transportation studies for areas having populations greater than 5,000 persons.

The urban transportation studies are primarily oriented to the analysis of present and future highway travel and identify, on a system-level basis, existing deficiencies and forecasts of future deficiencies in the urban area's roadway system. Transportation improvements to alleviate those deficiencies are subsequently developed, with projects largely involving improvements to state and federal highway systems facilities. These studies provide for the development of both short-range and long-range highway improvements. In addition, these studies may address multimodal and intermodal transportation concerns at levels of detail appropriate for individual areas, including bicycle and pedestrian facilities, transit service, trucking operations, rail facilities, and aviation issues.

BACKGROUND

The ability of Paducah to function effectively as an urban society depends upon the efficient movement of people and goods. Paducah is the largest city in western Kentucky and serves as the county seat of McCracken County. It is a regional commercial hub for shopping and medical care. McCracken County is located in the western part of Kentucky, originally part of the Jackson Purchase. The location of Paducah relative to the surrounding counties of the state can be seen in **Figure I-1**.

Figure I-1. Project Location

Originally a small village named Pekin, the village was platted and renamed "Paducah" by William Clark (of the famed Lewis and Clark Expedition) in 1827. Bound by multiple waterways, Paducah grew to the west and south. It quickly reached prominence as a regional trade and supply center. With the arrival of the railroad in the latter part of the 19th century, Paducah became a true multimodal hub for transportation of goods by river, rail and ground. The railroad, however, created some boundaries and restrictions for the continuing land development and roadway construction. Today the city limits have grown from the original 40 to 50 downtown blocks and now encompass 18.5 square miles of the 251 square miles in McCracken County.

McCracken County is part of a tract of land purchased from the Chickasaw in 1818. The county was formed in 1825, and was named for Captain Virgil McCracken, who was killed at the Battle of the River Raisin in the War of 1812.

PURPOSE

The basic objectives for a study of this type are:

- Establish an integrated system of streets and roads that efficiently accommodate existing and future travel demands;
- Base future travel desires and resulting plans on projected socioeconomic and land use activities;
- Produce a recommended transportation plan that reasonably reflects the financial capabilities of the Commonwealth of Kentucky, the City of Paducah, and McCracken County; and
- Conduct this study and develop a long-range plan that can be updated easily in the future.

SCOPE

The scope of this study was to conduct a comprehensive transportation study for the Paducah – McCracken County Area and develop a financially feasible transportation plan that will sufficiently accommodate projected transportation demands through the Year 2025. There are four components of the recommended plan:

1. Public Involvement Plan. This consists of holding five (5) Transportation Work Group meetings and two (2) public meetings. The purposes of these meetings were to receive input from a wide cross-section of public sources such as, political and public works officials from the City and County, business leaders, and citizens at-large. This input is considered vital to understanding the issues important to the community regarding transportation in general, transportation safety, and future growth within McCracken County.

2. Transportation Modeling and Forecasting. A transportation model was developed using data from multiple sources and the most recent travel demand modeling software available. The base year for the model network is 1999 and all long-range projections for population and employment were made for the future year 2025.

3. Operational Improvement Plan. This consists of short-term small scale, relatively low cost projects that can be implemented easily. Projects in the Operational Improvement Plan can be

incorporated into the State *Six Year Highway Plan* or may be implemented by either local or state government.

4. Long Range Transportation Plan. Projects in the Long Range Plan are larger-scale, capacity expansion-type projects. Long Range Plan projects are prioritized and, depending on those priorities, are consistent with Kentucky's *Six Year Highway Plan* (i.e. Years 1 through 6) and the *Statewide Transportation Plan* (Years 7 through 20).

The recommended Paducah Long Range Transportation Plan is intended to also serve as the transportation element of the *City of Paducah Comprehensive Plan* and *McCracken County Comprehensive Plan*. This has not been the case with previous versions of the Comprehensive Plan, as there has been no new urban area study for nearly 30 years.

The length of this study was 15 months.

CHAPTER II – PUBLIC INVOLVEMENT PLAN

Public involvement is an important component of any urban area transportation study. The public must be a partner in the development of the long range transportation plan by which it will be served. Public ownership of the product through participation in its development is a necessary criterion for plan acceptance.

A public involvement plan was developed for the Paducah - McCracken County Transportation Study. With the assistance of the Mayor and County Judge/Executive, a Transportation Work Group (Work Group) was established to provide input and guidance to the Transportation Cabinet and its consultant. Regular Work Group meetings were held throughout the course of the study. Additionally, two public meetings were held to present information about the study, and to receive input and comments. At the first public meeting, basic study facts and existing system deficiencies along with details of the downtown traffic analyses were made available. At the second public meeting, future system demands and deficiencies were presented, along with the analyses of alternatives and the recommended transportation plan.

TRANSPORTATION WORK GROUP

The Transportation Work Group was established to provide input and guidance, and was comprised of state and local officials and other community leaders. The Work Group was viewed as a collective representative of the citizens of Paducah and McCracken County. Individual Work Group members were:

- Bill Paxton, Mayor (Alternate - Jim Zumwalt, City Manager)
- Danny Orazine, County Judge/Executive
- Steve Doolittle, County Administrator
- Tom Barnett, City Planning and Zoning (Alternate - Steve Ervin)
- Buddy Smith, McCracken County – At - Large
- Van Newberry, McCracken County Engineer
- Rick Murphy, Paducah City Engineer
- Danny Murphy, Paducah Area Transit System (Alternate - Gary Kitchin)
- John Penrod, City of Paducah – At - Large
- Mike Noonan, Developer
- Henry Hodges, Executive Director – Purchase ADD (Alternate - Mark Davis)
- Wayne Mosley, Kentucky Transportation Cabinet, District 1 Engineer
- Barry House, Kentucky Transportation Cabinet, Multimodal Programs

SIGNIFICANT ISSUES

As the study progressed, several key issues were identified through interaction with the Work Group. These issues were considered in the development of the Long Range Transportation Plan and include:

- US 60 from I-24 through the Kentucky Oaks Mall area;
- Traffic growth on I-24 through McCracken County;
- The impact of the proposed interstates I-66 and I-69;
- Old Mayfield Road (KY 994) interchange with I-24, route safety, and development adjacent to the interchange;
- Paducah Outer Loop (formerly Massac Creek Parkway) alignment;
- The Paducah-McCracken County Riverport and;
- The proposed Regional Industrial Park just south of the McCracken County Line in Graves County that would likely impact several roads and particularly US 45.

GOALS AND OBJECTIVES

Goals are the basis for all human decisions. In order to make sound decisions, goals must be clearly identified and logically organized. Goals also must be measurable, at least qualitatively, as there is no reason to have goals when progress toward those goals cannot be measured.

While goals are generalized statements that reflect public interest and give direction, objectives are more specific statements that grow out of goals. While goals typically are too broad or general to quantify, objectives represent elements that can be accomplished and directly measured.

A set of Goals and Objectives was developed for the Paducah-McCracken County Transportation Study. These were used as the basis for developing the elements of the Recommended Long Range Transportation Plan. The Goals and Objectives are:

Goal 1: Provide for a Safe, Efficient, And Balanced Transportation System

Objective 1.1. Identify high accident locations and develop improvements.

Objective 1.2. Increase transportation system efficiency by making the most effective use of existing facilities and by using advanced technologies and management methods, as appropriate.

Objective 1.3. Identify existing and projected future congestion locations and develop strategies to reduce congestion and improve travel times.

Objective 1.4. Improve intermodal connectivity of the transportation system.

Goal 2: Enhance Economic Development Opportunities

Objective 2.1. Enhance highway and/or public transportation access to industrial sites, water ports and terminals, the airport, rail and intermodal facilities, freight distribution points, and military installations.

Objective 2.2. Improve access to undeveloped areas.

Objective 2.3. Enhance access to recreational areas and tourist sites.

Goal 3: Provide for an Environmentally Sensitive Transportation System

Objective 3.1. Protect and preserve existing scenic views.

Objective 3.2. Preserve special historic districts, historic sites, prehistoric sites, and natural environments.

Objective 3.3. Develop a transportation system that minimizes adverse impacts on noise, air quality and water.

Goal 4: Proactively Plan for Future Transportation System Needs

Objective 4.1. Identify and prioritize future transportation system needs.

Objective 4.2. Develop a prioritized list of projects for inclusion in the State's Long Range Plan.

Objective 4.3. Encourage inclusion of projects in the State's Six Year Plan and promote funding for those projects.

Objective 4.4. Develop (promote) alternative funding mechanisms for State and local projects.

CHAPTER III - EXISTING TRANSPORTATION SYSTEM

Through the years, Paducah's transportation system has evolved into what it is today. Paducah lies on the Ohio River which in turn provides direct access to the inland waterway system, and especially access to the Mississippi River system which serves not only markets to the north and the south but also international trade through the Port of New Orleans. Over the years the highway and road system focused on providing access from McCracken and neighboring counties to the Ohio River.

In the period after the Civil War, Paducah became the midpoint of rail lines linking Louisville and Memphis. A railroad bridge built over the Ohio River in 1917 linking Paducah with rail lines in southern Illinois enabled the Illinois Central Railroad (IC) to make Paducah one of its hubs, and create the largest locomotive repair and maintenance facility in the country. The former IC Rail lines are now part of the Paducah & Louisville (P&L) short-line railroad.

The major highway routes of US 45, 60, and 62 provided the basic arterial highway system for Paducah. Cross-county movement has been improved considerably over the last 30 years. Many roads were reconstructed from two to four lane facilities. Interstate 24 was completed in the early 1970's in an area that was then the outer boundary of Paducah's development. In the downtown area, the US 60/I-24 Business Loop (one way couplet) was built in the mid 1970's.

More recently, in the 1980's and 1990's, various projects involving the reconstruction of US routes 45, 60, and 62 in the suburban areas evolved to the current roadway network. Today, there is a major relocation and reconstruction effort currently taking place on US 60 heading west toward Ballard County.

STUDY AREA

The study area includes all of McCracken County. It is bordered by the Ohio River to the north, the Tennessee River and Marshall County to the east, Graves County to the south, and Ballard County to the west. The study area is shown in **Figure III-1**.

TRANSPORTATION NETWORK

All of the principal highways connecting Paducah with the surrounding communities converge around downtown. The US routes that originally passed directly through downtown have been relocated around the downtown's perimeter. Business routes and one downtown Interstate Loop have been established to replace the primary route designations.

The transportation network considered for the Paducah-McCracken County Transportation Study includes Interstate 24, all US designated highways and state routes, and other significant local streets. Many local city streets and county roads serve as feeder roads and were excluded from consideration. The traffic model network is shown in **Figure III-2**.

Interstate 24 is the dominant route through McCracken County, passing to the south and west of Paducah. Presently there are five interchanges with I-24 in McCracken County – KY 305 (Exit 3) on the northwest side of Paducah, US 60 (Exit 4) on the west end, a split diamond with US 62 and US 45 (Exit 7) southwest of the city, KY 1954 (Exit 11), and finally US 68 (Exit 16) on the southeast side of town near the Marshall County line. Probably no other city in the U.S. of Paducah's size has this many Interstate interchanges. The result has been a large amount of

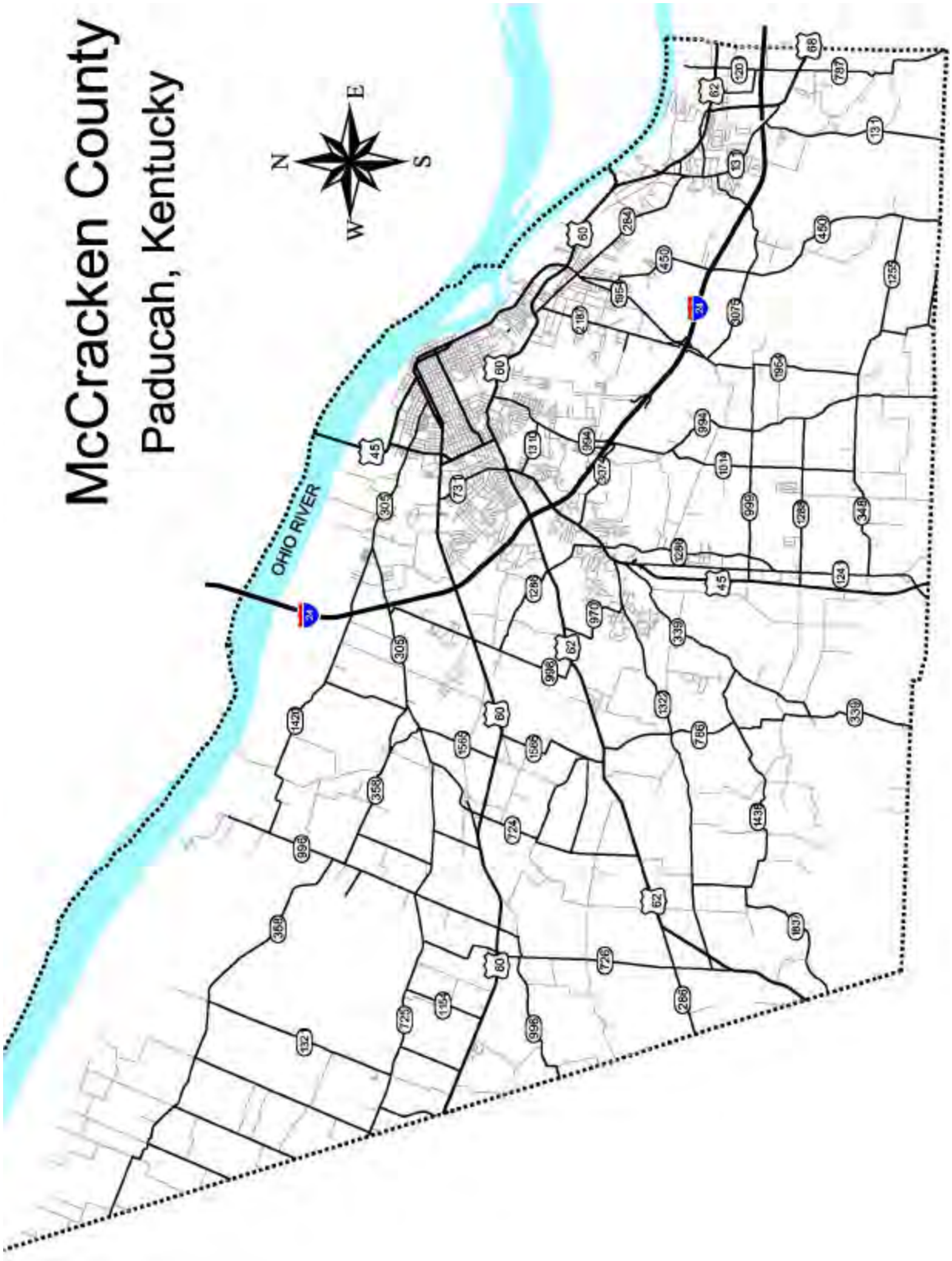

Figure III-1. Study Area

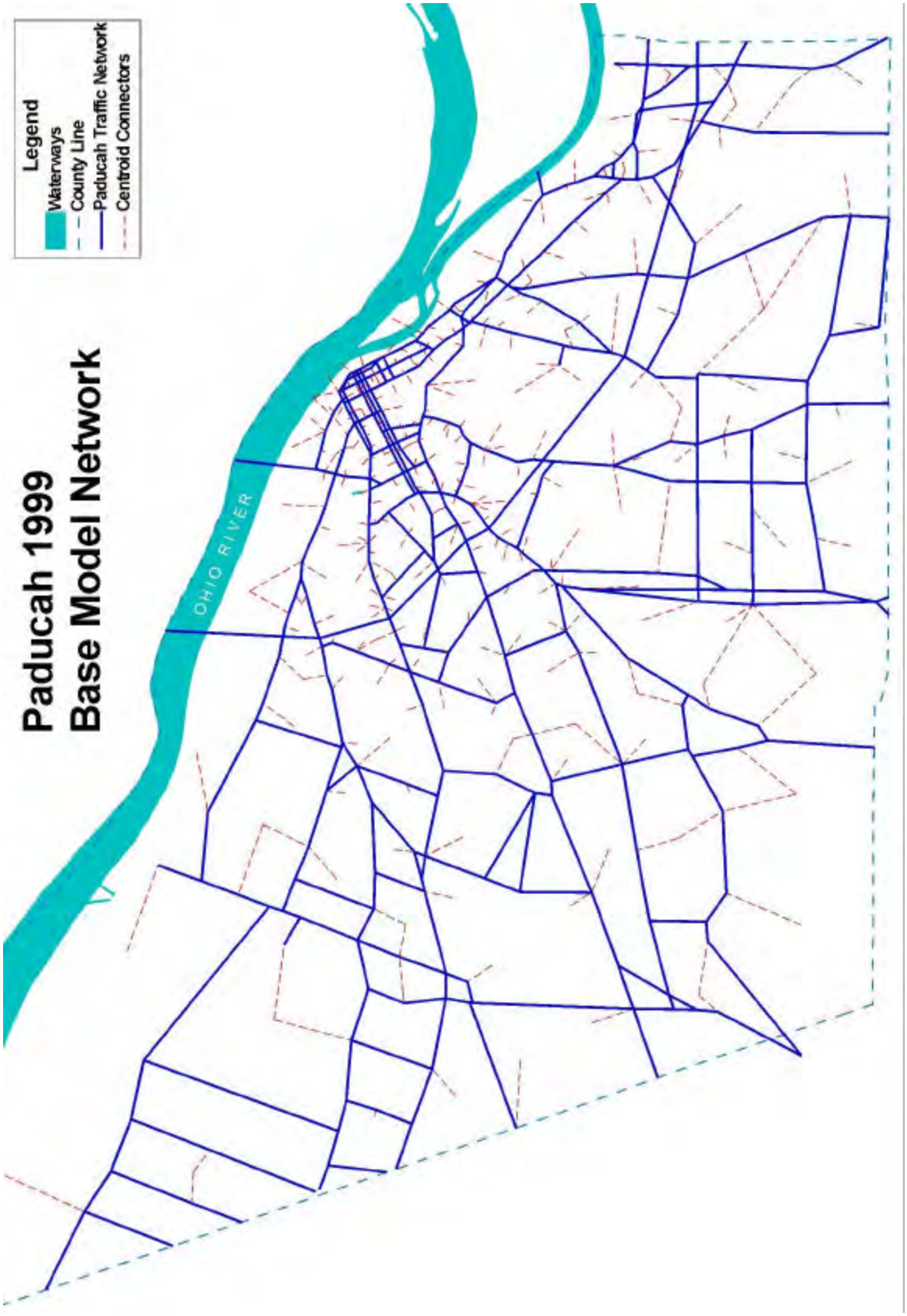

Figure III-2. Traffic Model Network

growth around the US 60, 45, and 62 interchanges. Additional development has started to occur around the KY 305 and US 68 interchanges. Between US routes 62 and 45, on the south side of I-24 is Kentucky's Whitehaven Welcome Center, a restored ante-bellum mansion.

Three other major regional highways pass through the study area. They are US routes 45, 60, and 62. US 60 enters McCracken County from the west at the Ballard County line and proceeds eastward. Along the way, US 60 passes through the most heavily developed area between Holt Road and Friedman Lane. From there, it passes through a mixed area of light industrial and commercial usage. The route then joins US 45 at 28th Street, departs and joins US 62 heading eastward away from town. The two routes split before reaching the town of Reidland where US 60 crosses the Tennessee River into Livingston County.

Entering the county from the south at the Graves County line, US 45 proceeds northward through the heavily commercialized City of Lone Oak to I-24. Lourdes Hospital lies just north of I-24 on US 45. The route then passes through a mixed area of commercial and residential sites and combines with US 62 at Jackson Street. US 45 leaves US 62 at 28th Street where it joins US 60. Near the end of 28th Street at H.C. Mathis Drive, US 45 separates from US 60 eventually crossing the Ohio River near Rockport, Illinois.

The other major route, US 62, follows a similar winding path through Paducah and McCracken County. US 62 enters the county south of US 60 and travels parallel to it. They finally converge at the intersection of 28th and Jackson Streets. Paducah Community College is located on US 62 less than one mile west of I-24. East of the interstate, US 62 passes through a scenic residential area including "Angles", the historic former home of Vice President Alben Barkley, before joining with US 45.

In addition US 68, which enters Kentucky in Maysville, and winds its way for several hundred miles across the state actually terminates on the east end of the county at US 62 in Reidland.

Interstate 24, US 60, and US 45 have designated business routes that pass through the central business district of Paducah. As Paducah grew the primary routes were relocated further from the heart of town. Until the completion of I-24, these US routes were still the primary routes through Paducah and the US 45 Bridge was one of only three regional Ohio River crossings into Illinois. The other two are US 51 between Ballard County, Kentucky and Cairo, Illinois; and KY 56 between Union County, Kentucky and Hardin County, Illinois.

Other significant state routes in the study area include:

- KY 305 (Cairo Road)
- KY 994 (Old Mayfield Road/16th Street)
- KY 998 (Olivet Church Road)
- KY 1286 (Friendship Road)
- KY 1954 (John L. Puryear Drive)
- KY 2187 (Husbands Road)

Some significant streets and local roads that were included in the study network were:

- Broadway
- Jefferson Street
- New Holt Road
- 21st Street

FEDERAL-AID ROUTES AND FUNCTIONAL CLASSIFICATION

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 restructured the Federal-aid system into two systems: the National Highway System (NHS) and the Interstate system, which is a component of the NHS.

Although there are only two Federal-aid systems, all public roads functionally classified above that of rural minor collector are eligible for Federal assistance under new and/or continued programs provided by legislation approved by Congress in 1991 and the subsequent Transportation Equity Act for the 21st Century (TEA-21) in 1998. These are primarily funded under the Surface Transportation Program (STP), the Congestion Mitigation and Air Quality Program (CMAQ) for which Paducah is not currently eligible, and the Highway Bridge Replacement and Rehabilitation Program (HBRR).

National Highway System

The National Highway System focuses Federal resources on routes which are most important to interstate travel and the national defense, and on roads that connect to other modes of transportation or are essential for interstate or international commerce. The NHS is designed to maintain system connectivity within the State and with adjacent states.

Section 103 (b) (1) of 23 U.S.C. defines the purpose of the NHS as:

> *"… to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel."*

The Federally mandated components of the NHS are: 1) the Interstate System, 2) other urban and rural principal arterials 3) intermodal connectors, which provide motor vehicle access to a major riverport, airport, public transportation facility, or other intermodal transportation facility, 4) the Strategic Highway Network (STRAHNET) which is a network of highways important to the United States strategic defense policy and which provides defense access, continuity, and emergency capabilities for the movement of personnel, materials, and equipment in both peace time and war time, 5) major Strategic Highway Network connectors. The McCracken County routes on the NHS are: Interstate 24 in its entirety, US 45 from the Graves County Line to I-24, and US 60 from the Ballard County Line to I-24.

Functional Classifications

Streets and highways are grouped into classes or systems according to the character of service they are intended to provide. This process is called functional classification. An integral part of this process is the recognition that individual roads and streets do not serve travel independent from the rest of the highway system. Rather, most travel involves movement through a network of roads, so it is necessary to determine how this travel can be categorized within the network in a logical and efficient manner.

Functional classification can be applied in planning highway system development, determining the jurisdictional responsibility for particular systems, and in fiscal planning. Functional classification is also important in determining eligibility for Federal-aid funding.

Urban and rural functional systems are classified as such:

Principal Arterials

Principal arterials are designed to provide for major travel desires between, across, and within urban areas. Expressways within this system do not provide access to adjacent land. Principal arterials are intended to carry high traffic volumes and serve the longest trip lengths.

Minor Arterials

Minor arterials are moderate volume streets and roads that interconnect with and augment the principal arterial system. More emphasis is placed on land access than for principal arterials, but the primary emphasis is on the movement of traffic. Also, travel desires typically are shorter for minor arterials than for principal arterials.

Collectors

Collector streets penetrate neighborhoods and the urban core, collecting and distributing trips from arterials to the local street system. Collectors provide both access to adjoining land and through movement of traffic.

Local Streets and Roads

The sole function of local streets is to provide access to abutting land. Local streets often comprise the largest portion of total street mileage in an urban area but carry only a small portion of the total vehicle-miles traveled. Local streets were not evaluated in this study.

In rural areas, collectors are further divided into two categories: **rural major collectors** and **rural minor collectors.**

A breakdown of the network by functional classification mileage for McCracken County is shown in **Table III-1**. The functional classification system for the Paducah McCracken County Transportation Study Network is shown in **Figure III-3**. This includes National Highway System routes.

Table III-1. Total Road Miles by Classification

Road Classification	Miles	Percent of Total
Rural Interstate	6.920	2.59%
Rural Principal Arterial	16.054	6.02%
Rural Minor Arterial	0.000	0.00%
Rural Major Collector	58.109	21.79%
Rural Minor Collector	69.511	26.06%
Rural Local Road	0.000	0.00%
Urban Interstate	10.400	3.90%
Urban Principal Arterial	27.930	10.47%
Urban Minor Arterial	48.643	18.24%
Urban Collector Street	29.119	10.92%
Urban Local Road	0.000	0.00%
Totals	266.686	100.00%

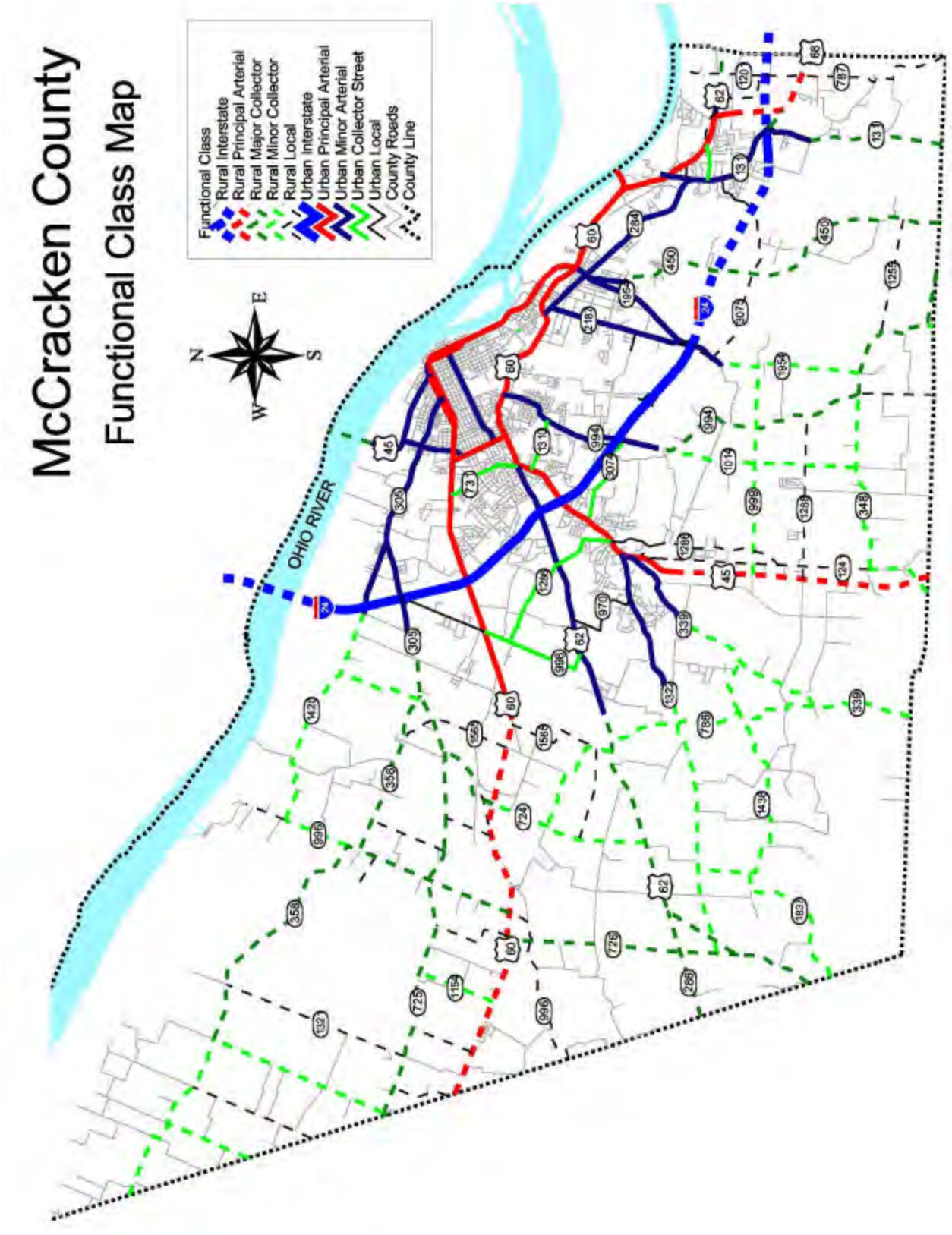

Figure III-3. Functional Classification of McCracken County Highways

DAILY TRAFFIC VOLUMES AND LEVELS OF SERVICE

These data were obtained from the Kentucky Transportation Cabinet for the Year 1999. The Transportation Cabinet maintains several permanent count stations in the area, plus numerous temporary locations at which counts are undertaken and updated on a regular basis.

In addition to I-24, there are two routes which presently carry more than 25,000 vehicles per day – US 60 and US 45. A number of facilities within the Paducah study area carry significant traffic volumes of more than 20,000 vehicles per day. A list of those roads and 1999 average daily traffic (ADT) volumes is presented in **Table III-2**. Other major traffic-carrying facilities are US 45X, US 60X, US 62, KY 305, KY 450, KY 998, KY 999, KY 1286, KY 1954, and KY 2187.

Table III-2. Routes With 1999 ADT Greater Than 20,000

Route	ADT	Location
US 60	30,700 – 45,000	From KY 998 to KY 788
I-24	26,400 – 35,500	From State Line to County Line
US 45	27,200	From KY 3074 to I-24
US 60	26,600	From KY 450 to US 62
US 45	24,800	From KY 1286 to KY 3074
US 60	22,200 – 24,100	From KY 788 to US 45
US 45	20,200 – 22,700	From I-24 to US 62
US 45	21,400	From US 62 to US 60

Levels of Service

Level of service is a qualitative measure of traffic conditions. There are six levels of service, expressed in letter grades "A" through "F". Level-of-service (LOS) "A" represents the best traffic conditions – free flowing, with high travel speeds and no delays. At the other end of the spectrum, LOS "F" represents the worst traffic conditions – heavy congestion, with long delays and low travel speeds resulting from stop-and-go flow. A facility is considered to have reached its physical capacity at LOS "E." For planning, it is typically desirable to minimally maintain a LOS "D" in urban areas and a LOS "C" in rural areas.

Level of Service Analysis

Level of service can be computed for specific facility types (e.g. freeways, arterial streets, signalized intersections, etc.) based on methodologies prescribed in the Highway Capacity Manual[1] (HCM). Depending on the facility type, there are a number of methods varying in complexity and accuracy that are described in the HCM and can be used to compute level of service. These methods range from generalized tables of daily traffic volumes to very detailed, data intensive operational analyses.

[1] *Highway Capacity Manual*, Special Report 209, Transportation Research Board, National Academy of Sciences, Washington, D.C., 1997.

For the Paducah study, a planning LOS analysis was used to identify current and projected future capacity deficiencies. The method estimates level of service for roadway sections based on observed or forecasted daily traffic volumes. For individual streets and roads, specific parameters related to geometry, traffic control, and traffic characteristics serve as input variables. This planning LOS analysis method is a widely accepted practice in urban area planning and corridor studies.

In the study base year (1999) there are several roadway segments that have a LOS of "D" or worse. They are:

- US 45 (28th Street) from Jackson Street to Jefferson Street (LOS = D)
- US 45 (Lone Oak Road) from Interstate 24 to Bleich Road (LOS = E)
- US 45X (Kentucky Avenue) from 10th to 3rd Streets (LOS = D)
- US 60 from Friedman Lane to Holt Road (LOS = F)

Base year (1999) levels of service for roadways and average daily traffic volumes in the Paducah study area are shown in **Figure III-4**. Outside the peak periods, traffic on these facilities is noticeably less, thus the impact of peak hour demands on daily traffic volumes and overall LOS is slightly underestimated using this method.

CRASH ANALYSIS

Crash data were collected from the Kentucky Transportation Cabinet for the three-year period from January 1, 1997, through December 31, 1999. Of the roads comprising the study area network, there were 4,441 reported crashes during this time frame.

Crash rates were computed for roadway sections of the network. Crash rates, expressed in terms of *crashes per 100 million vehicle-miles*, normalize the comparison by taking into account the amount of traffic on a section. The Critical Crash Rate is a statistically derived value that the Kentucky Transportation Cabinet uses as a threshold to identify high crash locations. Those roadway sections having an crash rate higher than the critical crash rate therefore are considered to be high crash locations and thus candidates for safety improvements. Critical crash rates for the roadway study sections were computed based on information obtained from the Kentucky Transportation Center[2]. The following formula was used to calculate critical crash rates:

$$A_c = A_a + K\sqrt{A_a / M} + 1/2M$$

Where:

A_c = Critical Crash Rate A_a = Average Crash Rate

K = Constant related to level of statistical significance (a probability of 0.95 was used wherein K = 2.576), and

M = Exposure (for roadway section, M is expressed in terms of 100 million vehicle-miles)

[2] *Analysis of Traffic Crash Data in Kentucky (1993 – 1997)*, Research Report KTC-98-16, Kentucky Transportation Center, College of Engineering, University of Kentucky, Lexington, Kentucky, September 1998.

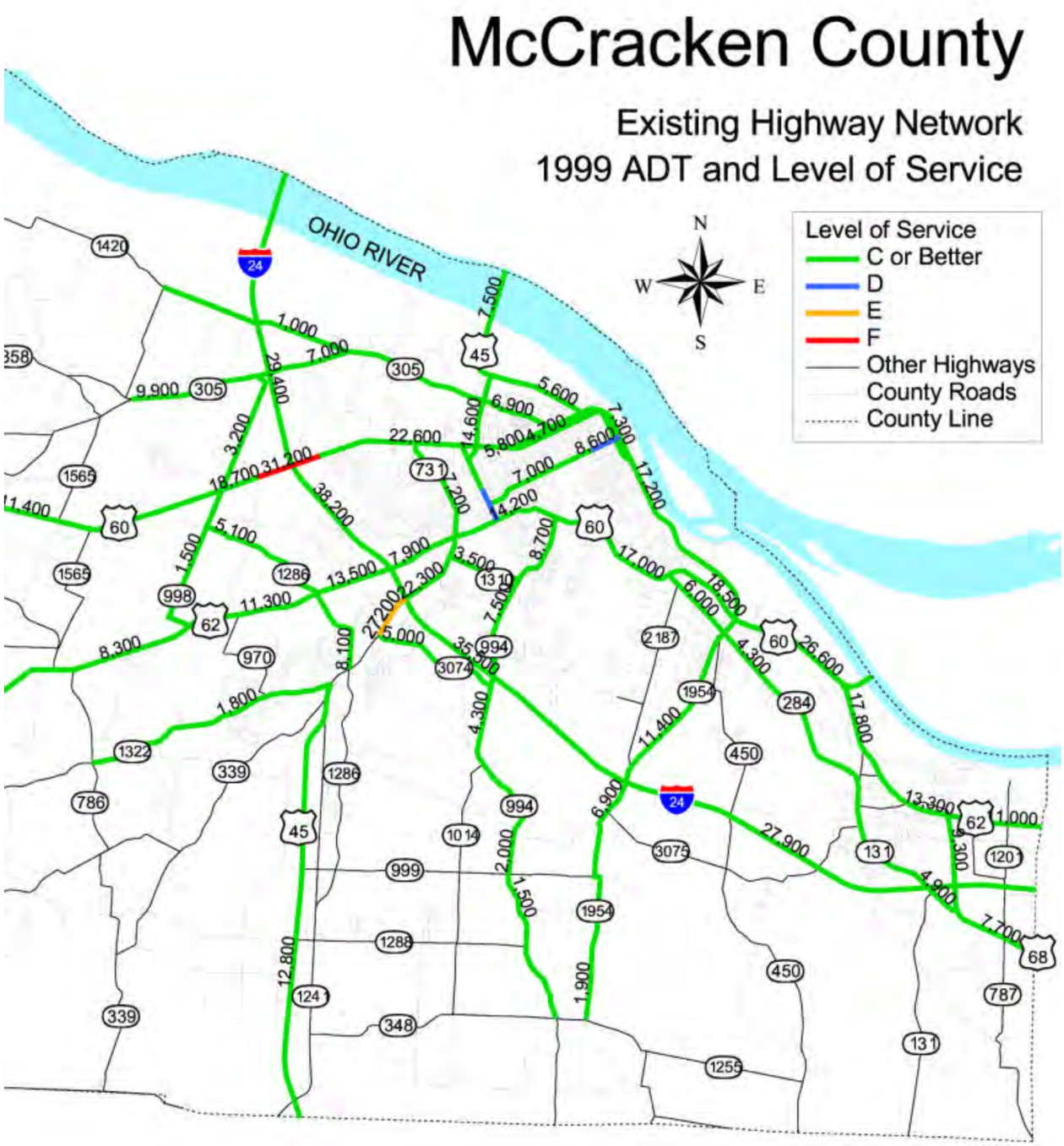

Figure III-4. 1999 ADT and Lev

Figure III-5 illustrates high crash roadway sections based on the three years of data. For each section, a Critical Crash Rate Factor (CCRF) was computed as the observed crash rate divided by the critical crash rate. Where this ratio is greater than 1.0, the roadway section can be considered to be a high crash location when compared to like facilities throughout Kentucky. The crash analysis results are summarized in **Table III-3**.

High Crash Locations

Because Paducah/McCracken County is dominantly a residential, commercial, industrial, and medical services area, and because its traffic is heavily influenced by peak travel patterns of commuting workers, it is not surprising that several roads were computed to have a CCRF greater than 1.0. It is most reasonable to focus on those roads or sections having an extremely high CCRF; that is, where the computed rate is two to three times higher than the critical rate. There are eleven roadway sections that have a CCRF of 0.95 or greater. They are:

- I-24 from KY 305 to US 60 (primarily at the US 60 Interchange)
- I-24 Bridge over the Ohio River
- US 45 from the Graves County Line to KY 1241
- US 45 from Jackson Street to US 60 (Park Avenue)
- US 45 from Park Avenue to the Ohio River Bridge to Rockport, Illinois
- US 45X (Kentucky Avenue) from 28th Street to 3rd Street, and continued on US 45X (3rd and 4th Streets) from Kentucky Avenue to Martin Luther King Boulevard
- US 60 from the Ballard County Line to KY 1565
- US 62 from the Ballard County Line to KY 286
- KY 1286 (Friendship Road) from KY 998 (Olivet Church Road) to US 62
- KY 994 (Old Mayfield Road) from KY 1014 (Houser Road) to the Graves County Line
- KY 1954 (Husbands Road) from north of I-24 to KY 2187

For these sections, crash records obtained from the KYTC were examined in more detail in an attempt to identify causative factors. The computer records are less detailed than the actual police reports, however, which make it difficult to evaluate some of the records. Many of the accidents are the result of congestion and heavy traffic demand. Also, the majority of crashes were at intersections where rear-end and right-angle crashes are the dominant types.

The following intersections had the highest crash frequencies for the three-year period between 1997 and 1999 (see **Figure III-6 for locations**):

- US 60 at I-24 Interchange – 142 crashes (Includes both ramps)
- US 45 at US 62 – 72 crashes
- US 45 at I-24 Interchange – 66 crashes (Includes both ramps)
- US 45 at KY 1286 – 63 crashes
- US 45 at KY 1241 – 51 crashes
- US 60 at Holt Road – 49 crashes
- US 45 at KY 3074 – 45 crashes
- US 60/US 45 at US 60X – 41 crashes
- US 60 at KY 284 – 37 crashes
- US 60 at Coleman Road – 34 crashes
- US 62 at I-24 Interchange – 33 crashes (Includes both ramps) crashes
- US 60 at KY 994 – 31 crashes
- US 60 at Friedman Lane – 29 crashes
- US 45 at Lakeview Drive – 29 crashes
- US 45X at 16th Street – 25 crashes
- US 62 at KY 1286 – 23 crashes
- US 60 at KY 731 – 23 crashes
- US 60 at KY 998 – 22 crashes
- US 45/US 60 at US 45X – 21 crashes

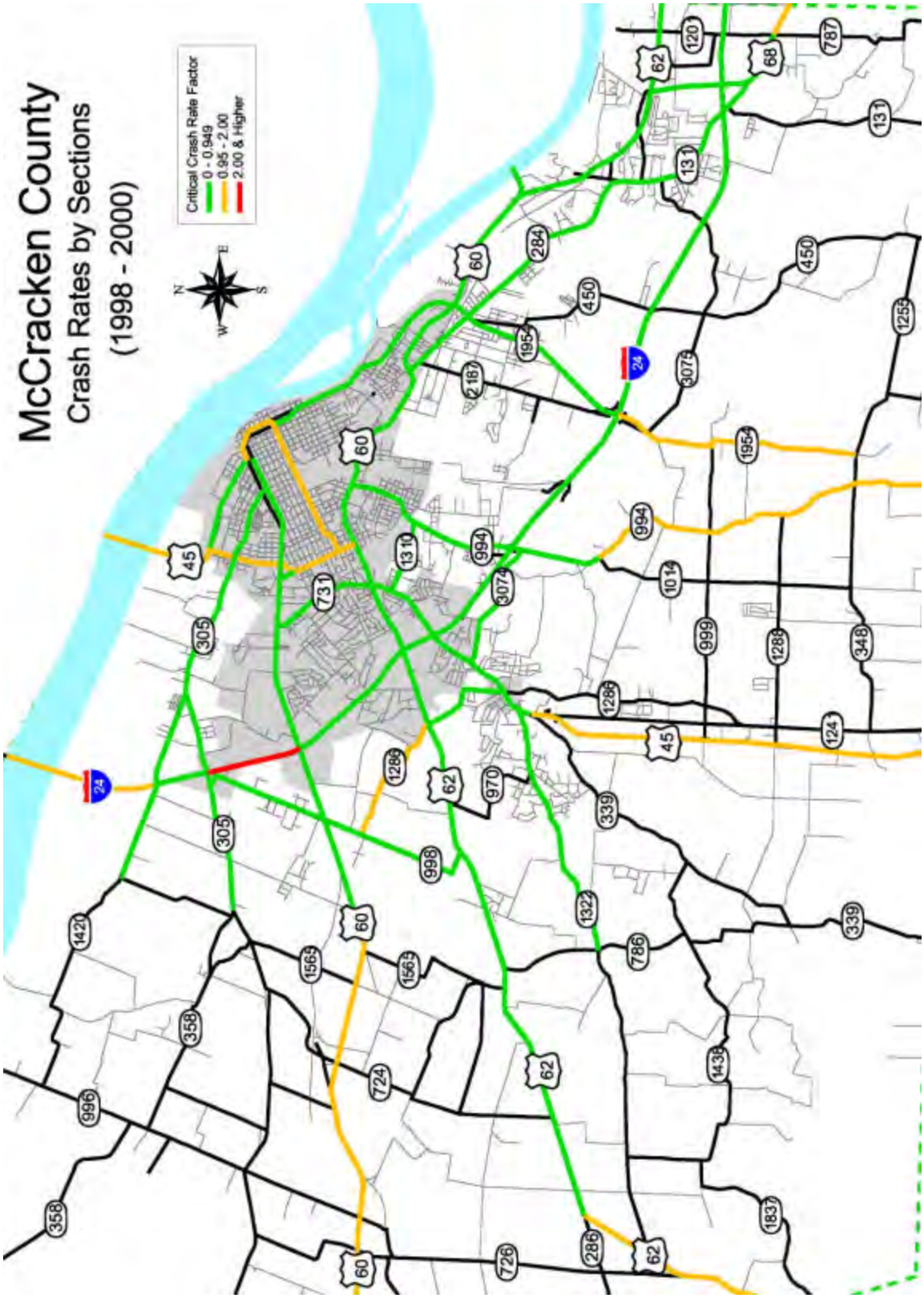

Figure III-5. High Crash Roadway Sections

Table III-3. Roadway Segment Accident Analysis

Facility	AADT	Begin MP	End MP	Length (miles)	Number of Crashes ('97 - '99)	Crash Rate (Crashes per MVM)	Funct. Class Code	Location	Functional Class	Statewide Average Crash Rate (per 100 MVM)	Critical Crash Rate (per 100 MVM)	Critical Crash Rate Factor*
I-24	29,400	0.000	2.212	2.212	54	**76**	1	Rural	Interstate	53	**76**	**1.00**
I-24	29,400	2.212	2.958	0.746	26	**108**	11	Urban	Interstate	99	**153**	0.70
I-24	31,700	2.958	4.415	1.457	140	**277**	11	Urban	Interstate	99	**136**	**2.04**
I-24	40,600	4.415	6.387	1.972	91	**104**	11	Urban	Interstate	99	**127**	0.82
I-24	35,500	6.387	11.117	4.730	153	**83**	11	Urban	Interstate	99	**118**	0.70
I-24	28,600	11.117	15.785	4.668	73	**50**	1	Rural	Interstate	53	**69**	0.73
I-24	28,600	15.785	16.270	0.485	23	**151**	11	Urban	Interstate	99	**168**	0.90
I-24	26,300	16.270	17.320	1.050	7	**23**	1	Rural	Interstate	53	**89**	0.26
US-45	11,370	0.000	5.785	5.785	149	**207**	2	Rural	Principal Arterial	131	**193**	**1.07**
US-45	23,670	5.785	8.018	2.233	314	**543**	14	Urban	Principal Arterial	454	**582**	0.93
US-45	23,850	8.018	9.870	1.852	220	**455**	14	Urban	Principal Arterial	454	**594**	0.77
US-45	12,620	9.870	10.806	0.936	98	**758**	14	Urban	Principal Arterial	454	**730**	**1.04**
US-45	5,590	10.806	13.800	2.994	117	**638**	16	Urban	Minor Arterial Street	420	**642**	**0.99**
US 45X	8,880	0.000	2.946	2.946	216	**754**	16	Urban	Minor Arterial Street	420	**596**	**1.26**
US 45X	5,350	2.946	4.370	1.424	32	**384**	14	Urban	Principal Arterial	454	**801**	0.48
US 60	7,700	0.000	1.968	1.968	65	**392**	2	Rural	Principal Arterial	131	**265**	**1.48**
US 60	10,020	1.968	7.770	5.802	214	**336**	2	Rural	Principal Arterial	131	**197**	**1.70**
US 60	12,600	7.770	9.729	1.959	99	**366**	14	Urban	Principal Arterial	454	**642**	0.57
US 60	46,400	9.729	10.828	1.099	226	**405**	14	Urban	Principal Arterial	454	**584**	0.69
US 60	24,750	10.828	13.544	2.716	215	**292**	14	Urban	Principal Arterial	454	**567**	0.52
US 60	17,350	13.544	17.700	4.156	270	**342**	14	Urban	Principal Arterial	454	**563**	0.61
US 60	26,800	17.700	19.700	2.000	104	**177**	14	Urban	Principal Arterial	454	**581**	0.30
US 60	19,700	19.700	20.028	0.328	15	**212**	2	Rural	Principal Arterial	131	**344**	0.62
US 60X	7,150	0.000	1.311	1.311	44	**429**	14	Urban	Principal Arterial	454	**765**	0.56
US 60X	8,190	1.311	2.230	0.919	39	**473**	14	Urban	Principal Arterial	454	**803**	0.59
US 60X	10,500	2.230	5.065	2.835	12	**37**	14	Urban	Principal Arterial	454	**625**	0.06
US 62	3,480	0.000	3.269	3.269	65	**522**	7	Rural	Major Collector	267	**486**	**1.07**
US 62	5,410	3.269	4.719	1.450	25	**291**	7	Rural	Major Collector	267	**533**	0.55
US 62	9,950	4.719	7.002	2.283	53	**213**	7	Rural	Major Collector	267	**419**	0.51
US 62	8,910	7.002	9.544	2.542	52	**210**	16	Urban	Minor Arterial Street	420	**610**	0.34
US 62	14,850	9.544	12.881	3.337	190	**350**	16	Urban	Minor Arterial Street	420	**547**	0.64
US 62	10,280	12.881	15.627	2.746	77	**249**	14	Urban	Principal Arterial	454	**630**	0.40
US 62	7,310	15.627	16.409	0.782	15	**240**	16	Urban	Minor Arterial Street	420	**809**	0.30
US 62	7,310	16.409	16.895	0.486	7	**180**	7	Rural	Major Collector	267	**675**	0.27
US 68	9,330	0.000	1.008	1.008	27	**262**	14	Urban	Principal Arterial	454	**765**	0.34
US 68	7,800	1.008	2.677	1.669	36	**253**	2	Rural	Principal Arterial	131	**277**	0.91
KY-131	2,370	0.000	3.603	3.603	26	**278**	7	Rural	Major Collector	267	**521**	0.53
KY-131	7,630	3.603	6.377	2.774	13	**56**	16	Urban	Minor Arterial Street	420	**616**	0.09
KY-284	5,200	0.000	4.219	4.219	129	**537**	16	Urban	Minor Arterial Street	420	**613**	0.88
KY-284	5,740	4.219	4.666	0.447	14	**498**	7	Rural	Major Collector	267	**755**	0.66
KY-305	2,430	0.000	2.815	2.815	27	**360**	7	Rural	Major Collector	267	**553**	0.65
KY-305	11,800	2.815	9.236	6.421	126	**152**	16	Urban	Minor Arterial Street	420	**522**	0.29
KY-731	18,600	0.000	1.579	1.579	19	**59**	17	Urban	Collector Street	284	**421**	0.14
KY-787	600	0.000	5.394	5.394	1	**28**	9	Rural	Local	203	**583**	0.05
KY-787	1,850	5.394	6.896	1.502	1	**33**	17	Urban	Collector Street	284	**764**	0.04
KY-994	801	0.000	5.641	5.641	51	**1031**	7	Rural	Major Collector	267	**625**	**1.65**
KY-994	7,100	5.641	9.558	3.917	50	**164**	16	Urban	Minor Arterial Street	420	**591**	0.28
KY-998	1,370	0.000	1.718	1.718	9	**349**	17	Urban	Collector Street	284	**811**	0.43
KY-998	3,480	1.718	2.207	0.489	5	**268**	17	Urban	Collector Street	284	**915**	0.29
KY-998	3,480	2.207	4.076	1.869	17	**239**	19	Urban	Local	264	**557**	0.43
KY-1286	725	0.000	0.631	0.631	6	**1198**	9	Rural	Local	203	**1401**	0.86
KY-1286	2,670	0.631	3.623	2.992	32	**366**	19	Urban	Local	264	**526**	0.70
KY-1286	8,140	3.623	5.000	1.377	37	**301**	17	Urban	Collector Street	284	**511**	0.59
KY-1286	4,810	5.000	7.026	2.026	60	**562**	9	Rural	Local	203	**412**	**1.37**
KY-1310	3,710	0.000	1.055	1.055	13	**303**	17	Urban	Collector Street	284	**682**	0.44
KY-1322	575	0.000	4.778	4.778	13	**432**	8	Rural	Minor Collector	267	**737**	0.59
KY-1322	2,930	4.778	7.564	2.786	17	**190**	8	Rural	Minor Collector	267	**528**	0.36
KY-1322	7,140	7.564	8.489	0.925	12	**166**	16	Urban	Minor Arterial Street	420	**781**	0.21
KY-1420	1,250	0.000	4.892	4.892	15	**224**	8	Rural	Minor Collector	267	**571**	0.39
KY-1420	1,000	4.892	6.297	1.405	6	**390**	16	Urban	Minor Arterial Street	420	**1255**	0.31
KY-1954	1,260	0.000	3.125	3.125	36	**835**	8	Rural	Minor Collector	267	**653**	**1.28**
KY-1954	5,010	3.125	3.923	0.798	42	**959**	16	Urban	Minor Arterial Street	420	**891**	**1.08**
KY-2187	7,090	0.000	0.902	0.902	3	**43**	16	Urban	Minor Arterial Street	420	**787**	0.05
KY-2187	10,400	0.902	2.702	1.800	22	**107**	16	Urban	Minor Arterial Street	420	**629**	0.17
KY-3074	6,570	0.000	1.861	1.861	16	**120**	17	Urban	Collector Street	284	**501**	0.24

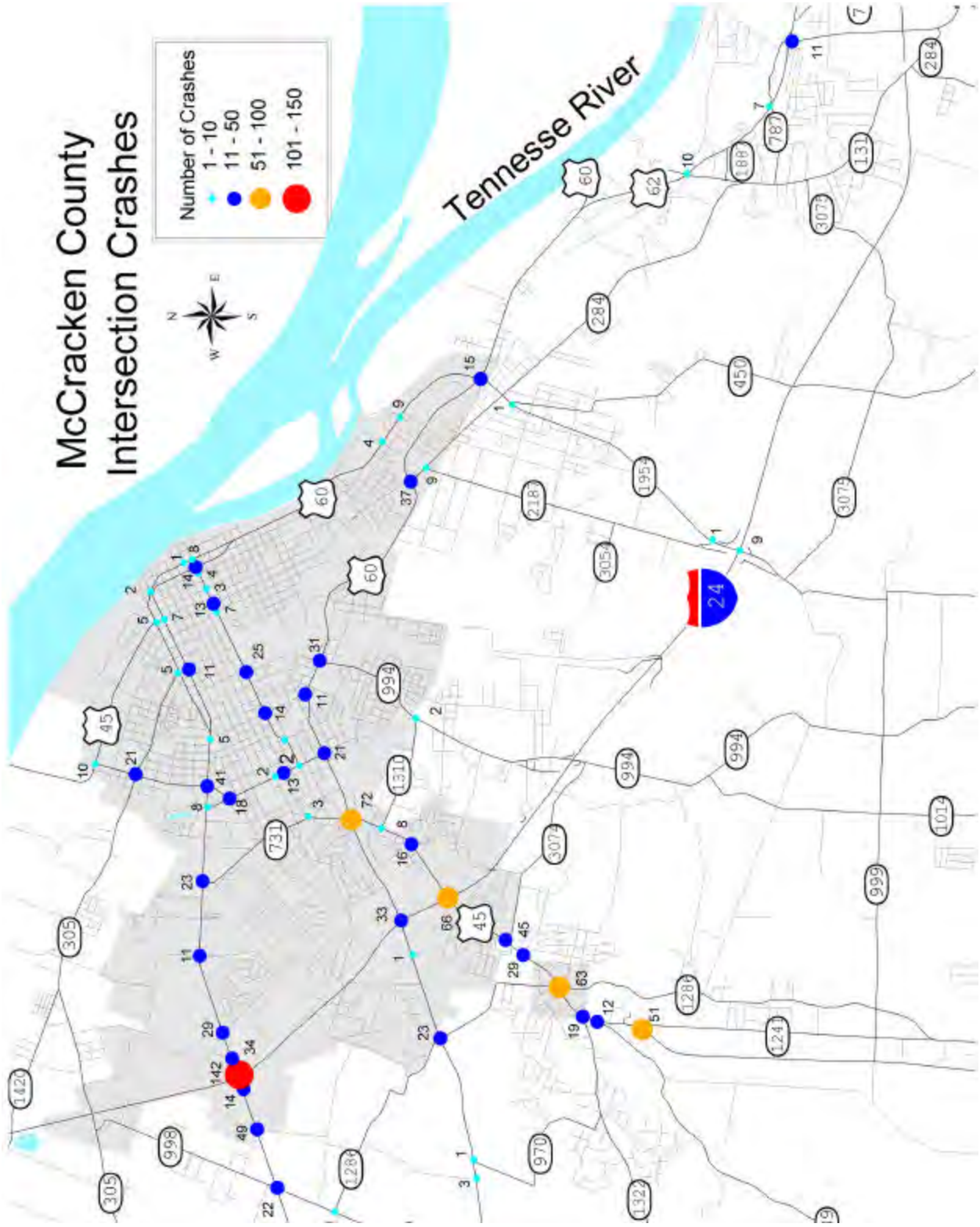

Figure III-6. High Crash Intersections

SYSTEM DEFICIENCIES

Congested Areas

Regularly occurring traffic congestion in Paducah is confined mostly to the traditional A.M. and P.M. peak commute periods. The one exception is Hinkleville Road (US 60) in the vicinity of the Kentucky Oaks Mall. This area experiences unusually high rates of congestion during holiday shopping seasons and weekends, including Friday and Saturday nights. A system-wide level of service analysis is beneficial in identifying the majority of the congested facilities or areas in Paducah and McCracken County. This analysis is based on traffic counts and other roadway characteristics. The JJG team relied on its extensive knowledge of the area plus input from the Transportation Work Group to identify all areas with regularly occurring congestion.

Those areas where congestion is most significant include many of the principal arterials, especially US 60 from Friedman Lane to New Holt Road in the area of the Kentucky Oaks Mall and the I-24 Interchange. Another major area of congestion is US 45 through Lone Oak to US 62. Lack of access management is a contributing factor to the congestion on US 45 in the City of Lone Oak. Along with the signalized intersections, there are numerous driveway entrances and other access points between KY 339 and I-24 that add to the congestion.

Other congested areas include: I-24 at the US 60 (Hinkleville Road) interchange eastbound and westbound exit ramps; US 45 (Joe Clifton Drive); US 60X (Park Avenue) from US 60 to 21st Street; US 62 from KY 1286 to I-24; US 60 (Beltline Highway) from KY 284 to KY 1954 (John Puryear Drive); US 60X (3rd Street) from Ohio Street to KY 1954 (John Puryear Drive); US 45X (Kentucky Avenue) from 9th Street to 4th Street; and US 45X (3rd & 4th Streets) from Kentucky Avenue to Martin Luther King Drive.

The congestion on the I-24 Ramps at the US 60 interchange is linked to extremely high demand at various times of the year. Holidays, weekends, and other peak shopping seasons draw more shoppers to the Kentucky Oaks Mall area than the interchange can accommodate. Enhancements have been made to the critical ramps as well as on US 60 over the past 10 years. However, continued commercial growth in the area now attracts even more shoppers on a regional basis. This has consumed the additional capacity and is once again causing congestion at the I-24 and US 60 interchange.

Safety Deficiencies

The analysis of crashes showed that, overall, safety deficiencies were related mostly to a combination of speed, winding roads, and congestion. That is, high crash locations were concentrated in areas where traffic volumes were highest and where there is a lot of turning activity – at intersections and along sections with numerous driveways. This was confirmed through examination of actual crash records at high crash locations.

Land Use-Transportation Relationship

Peak hour congestion is compounded by the relationship between land use and transportation, especially along some principal arterials. In the Kentucky Oaks Mall area of the US 60 corridor, land use is heavily oriented toward commercial retail. Not only does this area "capture" a lot of weekday commuter pass-by traffic, the area also attracts primary trip destinations from throughout the region, particularly on evenings, weekends, and major shopping holidays.

The elected leaders and major local developers have ensured that the downtown Paducah Business District remains a viable trip destination for government and professional offices, restaurants, and commercial activities. The I-24 Business Loop, along with adequate downtown parking, and direct access to the Ohio River have all contributed to maintaining the viability of Downtown Paducah. Therefore, with the expansion of the Convention Center and the new River Heritage Museum traffic volumes in the downtown area should increase as downtown becomes an increasingly attractive activity center. This would reverse the decline in ADT on downtown routes noticed in the 1990's.

OTHER TRANSPORTATION MODES

Private passenger automobiles and trucks dominate transportation in Paducah. However, some alternative modes exist, as discussed below:

Transit

Public transportation in Paducah is provided primarily by the *Paducah Area Transit System (PATS)*, which offers fixed route bus service. PATS is moving to a newly remodeled facility at 850 Harrison Street. The route system is being revised to significantly reduce headways by a combination of adding new buses and providing transfer stations in outlying areas to both attract new riders and enable existing users to reduce travel and wait times. The primary transfer points will be at the Harrison Street headquarters for the downtown routes and a new trolley system which is scheduled to go into service soon, and at Hannan Plaza for outlying areas.

PATS provides regular weekday service and abbreviated weekend service. Paratransit service is also provided on a one-way fixed fee basis. Wheelchair lifts are available on all regular routes. The composition of the ridership is typical of most urban areas; that is, primarily the transportation disadvantaged.

Aviation

The Barkley Regional Airport is a very busy general aviation airport located off Hinkleville Road (US 60), one mile southwest of Paducah. The airport has two runways. The primary runway is 6,500 feet long by 150 feet wide and the second runway is 4,000 feet long by 150 feet wide. It provides the only commercial air service in the Purchase Area, and also serves southern Illinois.

The airport offers the following aviation services:

- Commuter flights to St. Louis (TW Express) and Memphis (Northwest Airlink)
- Charters
- Air Freight
- Air taxi service
- Aircraft rental
- Fuel sales
- Aircraft painting and customization
- Flight instruction
- Car rental
- Vending
- Tie downs and hangars

- On site National Weather Station with NEXRAD Doppler RADAR

The U.S. Army originally constructed the Barkley Regional Airport in 1941. The facility was given to Paducah and McCracken County after World War II in 1945, and is managed by the Paducah Airport Corporation. In recent years, there have been about 60 based aircraft and over 2,650 total annual aircraft operations, an average of about 77 operations per day.

Taxi

There are two taxi services that serve the Paducah-McCracken County study area. *Airport Taxi Service* operates a total of 32 taxis on an around the clock basis, seven days a week. In addition Airport Taxi operates vans between the airport and major destinations in the area. *Security Taxicab Inc.* operates approximately 18 vehicles around the clock and seven days a week.

Waterways

Paducah is located at the confluence of the Ohio and Tennessee Rivers. This key location has played a role in Paducah's development and commercial operations since the city was established in 1827. While the rivers were Paducah's access to the world in the 1800s, to this day there has continued to be a major water based industry including barge building and repair, intermodal shipping, regular stops by steamboats which ply the Mississippi and Ohio River systems, and a significant training program for employment in the water industries.

The Paducah-McCracken County Riverport continues to provide both a significant bulk transportation service and a major source of revenue generation for the region. The Riverport has three dock facilities, and can handle up to as many as four barges with different products. The Port offers both on-site rail and truck service to provide direct land transportation to or from the port via the P&L Railroad or the I-24 / US 60 Business Loop.

CHAPTER IV – FORECASTS

Development of a long-range transportation plan is dependent on defining a set of parameters at some point in the future that will establish the framework for the plan. For the Paducah – McCracken County Transportation Study, the Year 2025 was established as the horizon year for which the transportation plan was to be developed. Year 2025 socioeconomic conditions then would be predicted from which future transportation needs could be identified. Some of those needs exist already and simply will increase in magnitude over time. Other needs do not exist today, but will surface at some point between now and 2025. The Paducah – McCracken County Long Range Transportation Plan is the result of a systematic process to identify those needs and develop strategies to sufficiently meet them.

Population and employment are two variables commonly used in urban transportation studies to forecast traffic. A computer travel demand model is a valuable tool that uses these and other variables to forecast traffic volumes on the roadway system. Such a tool, the Paducah – McCracken County Traffic Model, was developed for this study. Using this model, Year 2025 traffic forecasts were developed, from which future needs of the transportation system were identified. The model also was used to compare the effectiveness of alternative transportation improvements so that the best and most cost effective projects would be incorporated into the Long Range Transportation Plan.

Socioeconomic Data Forecasts

The accuracy of the traffic forecasts is highly dependent on the accuracy of the data that go into the model. These data include population and employment, two socioeconomic variables that are integral to the trip generation model. As shown previously (Chapter III, Figure III-1), the transportation study area includes all of McCracken County.

1999 Base Year Estimates

The first step in developing population and employment forecasts was to estimate these numbers for the Base Year, 1999. The Purchase Area Development District (PADD) assisted in this process, collecting population and employment data for the study area. The area was divided into traffic analysis zones, or TAZs. This scheme is presented in **Figure IV-1**.

The number of dwelling units in each TAZ was counted. The zonal population was estimated by applying average occupancy rates developed from the 1990 Census to the number of dwelling units. Occupancy rates varied by section of town, ranging from 1.48 to 2.96 persons per dwelling unit. Population estimates also included group quarters – persons living in dormitories, regional jails, nursing homes, etc.

A sampling of businesses within the study area was contacted to determine the number of employees. For purposes of predicting trip generation, the employment data by TAZ were classified in two ways: 1) as retail or non-retail; and 2) as commercial, industrial, or public.

The 1999 Base Year study area population and employment are presented in **Table IV-1**. The 1999 study area population was estimated to be 64,994. The actual count compiled by the U.S. Bureau of the Census for year 2000 was 65,514, a remarkable correlation.

Total employment for McCracken County in 1999 was estimated through counts, surveys, and compilations of data from independent sources to be 41,779, while statistics compiled by the U.S. Bureau of Economic Analysis showed that the employment was 41,824.

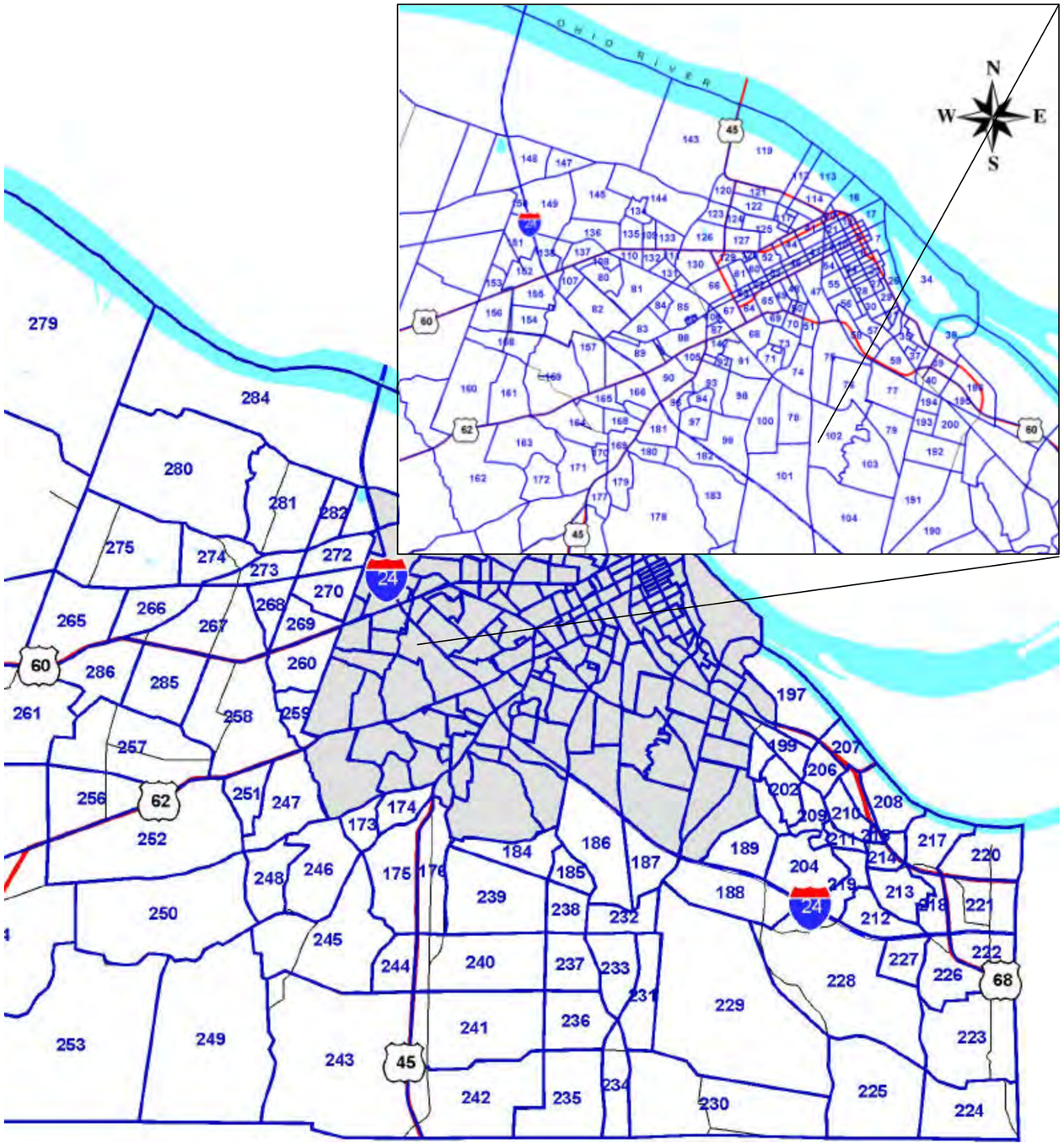

Figure IV- 1. TAZs for McCracken County

Table IV- 1. 1999 Study Area Population and Employment Data

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
1	Urban	15	36	214	0	2	216	55	161	216
2	Urban	13	31	779	0	41	820	193	627	820
3	Urban	25	60	433	65	4	502	270	232	502
4	Urban	28	67	129	201	86	416	43	373	416
5	Urban	24	58	9	0	559	568	0	568	568
6	Urban	2	5	30	21	55	106	0	106	106
7	Urban	4	10	70	376	4	450	20	430	450
8	Urban	6	14	38	42	7	87	16	71	87
9	Urban	12	29	189	150	4	343	81	262	343
10	Urban	120	289	122	83	2	207	83	124	207
11	Urban	15	36	201	1	10	212	160	52	212
12	Urban	25	60	87	0	1	88	12	76	88
13	Urban	8	19	125	0	316	441	0	441	441
14	Urban	40	96	189	31	162	382	180	202	382
15	Urban	6	14	0	0	0	0	0	0	0
16	Urban	0	0	553	133	19	705	348	357	705
17	Urban	0	0	137	325	0	462	13	449	462
18	Urban	18	43	16	0	0	16	14	2	16
19	Urban	42	101	47	22	0	69	0	69	69
20	Urban	87	210	40	1	0	41	32	9	41
21	Urban	136	328	114	227	5	346	47	299	346
22	Urban	51	123	158	10	101	269	34	235	269
23	Urban	39	94	37	50	0	87	15	72	87
24	Urban	46	111	2	5	8	15	2	13	15
25	Urban	94	227	12	1	0	13	10	3	13
26	Urban	0	0	64	28	12	104	63	41	104
27	Urban	59	142	26	17	2	45	0	45	45
28	Urban	49	118	42	9	0	51	1	50	51
29	Urban	37	89	33	0	52	85	15	70	85
30	Urban	70	169	10	20	0	30	10	20	30
31	Urban	46	111	5	0	0	5	5	0	5
32	Urban	51	123	0	0	0	0	0	0	0
33	Urban	23	55	6	0	0	6	6	0	6
34	Urban	0	0	7	1260	0	1267	0	1267	1267
35	Urban	74	178	23	0	0	23	22	1	23
36	Urban	59	142	20	28	0	48	20	28	48
37	Urban	125	301	33	0	0	33	26	7	33
38	Urban	0	0	19	333	0	352	0	352	352
39	Urban	3	7	219	243	93	555	9	546	555
40	Urban	148	357	253	130	0	383	188	195	383
41	Urban	103	248	24	0	0	24	14	10	24
42	Urban	63	152	147	106	1	254	97	157	254
43	Urban	28	67	231	0	74	305	127	178	305
44	Urban	45	108	11	0	10	21	10	11	21
45	Urban	58	140	14	0	0	14	0	14	14
46	Urban	81	195	490	22	84	596	204	392	596
47	Urban	38	92	19	264	0	283	19	264	283
48	Urban	206	496	109	17	0	126	29	97	126
49	Urban	91	219	39	50	0	89	27	62	89
50	Urban	51	123	16	0	0	16	11	5	16

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
51	Urban	20	48	93	18	0	111	80	31	111
52	Urban	134	323	0	0	0	0	0	0	0
53	Urban	117	282	428	0	9	437	104	333	437
54	Urban	12	29	46	51	0	97	15	82	97
55	Urban	120	289	2	0	0	2	0	2	2
56	Urban	60	145	16	20	0	36	0	36	36
57	Urban	58	140	7	9	0	16	7	9	16
58	Urban	23	55	195	1	3	199	86	113	199
59	Urban	217	523	183	12	0	195	164	31	195
60	Urban	77	186	77	0	0	77	3	74	77
61	Urban	150	362	8	0	0	8	5	3	8
62	Urban	91	219	328	84	0	412	52	360	412
63	Urban	30	72	1514	96	0	1610	41	1569	1610
64	Urban	104	251	77	0	0	77	14	63	77
65	Urban	49	118	54	0	102	156	41	115	156
66	Urban	372	897	280	0	22	302	85	217	302
67	Urban	115	277	196	2	40	238	34	204	238
68	Urban	521	1256	90	27	1	118	59	59	118
69	Urban	89	214	47	0	0	47	47	0	47
70	Urban	13	31	32	0	0	32	0	32	32
71	Urban	320	771	9	0	0	9	2	7	9
72	Urban	25	60	0	0	56	56	0	56	56
73	Urban	363	875	0	0	0	0	0	0	0
74	Urban	523	1260	36	0	0	36	0	36	36
75	Urban	110	265	40	0	6	46	15	31	46
76	Urban	8	19	0	0	0	0	0	0	0
77	Urban	264	636	113	0	0	113	62	51	113
78	Urban	119	287	5	66	65	136	0	136	136
79	Urban	114	275	51	0	0	51	0	51	51
80	Urban	271	653	9	0	0	9	1	8	9
81	Urban	298	718	23	0	1	24	2	22	24
82	Urban	218	525	9	0	0	9	1	8	9
83	Urban	183	441	10	0	0	10	0	10	10
84	Urban	8	19	6	0	0	6	2	4	6
85	Urban	313	754	103	0	57	160	13	147	160
86	Urban	4	10	1	0	0	1	1	0	1
87	Urban	25	60	35	3	74	112	34	78	112
88	Urban	326	786	5	0	0	5	2	3	5
89	Urban	99	239	32	0	0	32	0	32	32
90	Urban	131	316	66	2	0	68	41	27	68
91	Urban	12	29	10	0	0	10	10	0	10
92	Urban	10	24	1	0	0	1	0	1	1
93	Urban	65	157	213	0	13	226	23	203	226
94	Urban	228	549	0	0	0	0	0	0	0
95	Urban	84	202	0	0	0	0	0	0	0
96	Urban	0	0	2191	23	10	2224	26	2198	2224
97	Urban	67	161	1	100	0	101	1	100	101
98	Urban	187	451	5	5	0	10	2	8	10
99	Urban	144	347	47	0	0	47	0	47	47
100	Urban	27	65	71	8	8	87	52	35	87

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
101	Urban	154	371	16	0	0	16	13	3	16
102	Urban	320	771	0	0	0	0	0	0	0
103	Urban	144	347	4	0	0	4	3	1	4
104	Urban	20	48	6	19	0	25	6	19	25
105	Urban	50	121	253	5	0	258	167	91	258
106	Urban	38	92	169	40	2	211	4	207	211
107	Urban	22	53	241	0	9	250	66	184	250
108	Urban	42	101	156	0	54	210	56	154	210
109	Urban	0	0	23	0	0	23	22	1	23
110	Urban	0	0	14	0	0	14	0	14	14
111	Urban	14	34	120	0	0	120	109	11	120
112	Urban	0	0	13	22	0	35	11	24	35
113	Urban	0	0	15	0	0	15	14	1	15
114	Urban	150	362	41	155	37	233	34	199	233
115	Urban	24	58	34	0	61	95	16	79	95
116	Urban	0	0	0	0	55	55	0	55	55
117	Urban	105	253	3	0	0	3	1	2	3
118	Urban	106	255	0	25	0	25	0	25	25
119	Urban	0	0	82	61	13	156	54	102	156
120	Urban	45	108	71	66	10	147	42	105	147
121	Urban	23	55	339	119	36	494	199	295	494
122	Urban	324	781	69	11	0	80	52	28	80
123	Urban	56	135	0	0	0	0	0	0	0
124	Urban	48	116	49	0	102	151	36	115	151
125	Urban	26	63	0	0	0	0	0	0	0
126	Urban	0	0	7	0	0	7	4	3	7
127	Urban	271	653	129	0	0	129	58	71	129
128	Urban	0	0	0	0	71	71	0	71	71
129	Urban	159	383	168	0	0	168	155	13	168
130	Urban	192	463	348	0	0	348	142	206	348
131	Urban	193	465	20	6	0	26	20	6	26
132	Urban	0	0	123	0	0	123	122	1	123
133	Urban	5	12	124	0	104	228	120	108	228
134	Urban	2	5	0	0	0	0	0	0	0
135	Urban	2	5	94	28	0	122	69	53	122
136	Urban	31	75	41	12	0	53	41	12	53
137	Urban	40	96	76	0	0	76	76	0	76
138	Urban	2	5	62	130	0	192	62	130	192
139	Urban	1	2	475	0	0	475	475	0	475
140	Urban	2	5	8	0	16	24	4	20	24
141	Urban	2	5	8	0	0	8	8	0	8
142	Urban	0	0	354	0	59	413	70	343	413
143	Urban	35	84	8	5	0	13	7	6	13
144	Urban	123	296	4	101	0	105	3	102	105
145	Urban	10	24	36	8	34	78	34	44	78
146	Urban	163	393	2	39	0	41	0	41	41
147	Urban	35	84	29	16	0	45	25	20	45
148	Urban	7	17	38	1	0	39	36	3	39
149	Urban	15	36	309	186	4	499	210	289	499
150	Urban	9	22	9	0	0	9	8	1	9

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
151	Urban	16	39	0	0	0	0	0	0	0
152	Urban	0	0	2822	0	0	2822	2658	164	2822
153	Urban	25	60	81	0	0	81	70	11	81
154	Urban	13	31	207	6	46	259	132	127	259
155	Urban	494	1191	881	0	0	881	832	49	881
156	Urban	12	29	467	0	1	468	336	132	468
157	Urban	222	535	95	0	0	95	18	77	95
158	Urban	130	313	16	0	0	16	6	10	16
159	Urban	100	241	70	33	0	103	12	91	103
160	Urban	205	494	83	2	1	86	73	13	86
161	Urban	31	75	11	0	2	13	11	2	13
162	Urban	182	439	3	2	1	6	0	6	6
163	Urban	25	60	6	24	0	30	0	30	30
164	Urban	185	446	32	0	0	32	20	12	32
165	Urban	0	0	297	0	0	297	3	294	297
166	Urban	0	0	23	0	240	263	23	240	263
167	Urban	94	227	12	0	0	12	11	1	12
168	Urban	328	790	6	0	0	6	3	3	6
169	Urban	28	67	91	0	0	91	52	39	91
170	Urban	5	12	0	0	189	189	0	189	189
171	Urban	383	923	340	10	0	350	234	116	350
172	Urban	215	518	35	0	0	35	3	32	35
173	Urban	192	463	23	0	1	24	12	12	24
174	Urban	210	506	97	10	0	107	66	41	107
175	Rural	630	1518	71	0	20	91	1	90	91
176	Rural	53	128	150	122	7	279	106	173	279
177	Urban	168	405	203	11	3	217	158	59	217
178	Urban	159	383	2	18	2	22	2	20	22
179	Urban	222	535	393	22	0	415	172	243	415
180	Urban	56	135	63	8	32	103	25	78	103
181	Urban	76	183	260	0	5	265	194	71	265
182	Urban	101	243	40	0	0	40	6	34	40
183	Urban	452	1089	48	13	71	132	17	115	132
184	Rural	104	251	6	0	0	6	0	6	6
185	Rural	8	19	0	0	0	0	0	0	0
186	Rural	148	357	3	0	0	3	3	0	3
187	Urban	14	34	8	1	0	9	0	9	9
188	Rural	30	72	9	0	0	9	9	0	9
189	Urban	44	106	0	0	0	0	0	0	0
190	Urban	87	210	0	0	0	0	0	0	0
191	Urban	31	75	63	1	0	64	1	63	64
192	Urban	182	439	10	0	0	10	4	6	10
193	Urban	154	371	16	0	75	91	16	75	91
194	Urban	86	207	49	0	0	49	44	5	49
195	Urban	0	0	374	97	0	471	302	169	471
196	Urban	0	0	895	32	21	948	869	79	948
197	Urban	62	149	28	485	3	516	6	510	516
198	Urban	229	552	459	83	0	542	151	391	542
199	Urban	124	299	0	2	0	2	0	2	2
200	Urban	158	381	184	7	160	351	17	334	351

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
201	Urban	116	280	57	2	0	59	41	18	59
202	Urban	37	89	0	0	0	0	0	0	0
203	Urban	30	72	2	0	0	2	0	2	2
204	Rural	83	200	0	0	0	0	0	0	0
205	Urban	32	77	26	10	0	36	18	18	36
206	Urban	84	202	3	0	0	3	0	3	3
207	Urban	0	0	8	4	20	32	0	32	32
208	Urban	123	296	3	3	0	6	0	6	6
209	Urban	2	5	1	0	0	1	0	1	1
210	Urban	156	376	36	0	0	36	36	0	36
211	Urban	24	58	11	0	41	52	11	41	52
212	Rural	306	737	47	4	0	51	0	51	51
213	Urban	527	1270	16	69	0	85	1	84	85
214	Urban	220	530	22	37	0	59	7	52	59
215	Urban	70	169	3	0	0	3	0	3	3
216	Urban	43	104	0	0	0	0	0	0	0
217	Rural	212	511	36	0	7	43	34	9	43
218	Rural	50	121	51	0	0	51	31	20	51
219	Rural	244	588	2	0	112	114	2	112	114
220	Rural	55	133	5	4	0	9	0	9	9
221	Rural	23	55	99	0	4	103	99	4	103
222	Rural	72	174	73	0	0	73	31	42	73
223	Rural	220	530	2	0	0	2	0	2	2
224	Rural	16	39	1	0	0	1	0	1	1
225	Rural	15	36	14	0	0	14	0	14	14
226	Rural	148	357	30	0	0	30	6	24	30
227	Rural	145	349	6	0	0	6	0	6	6
228	Rural	40	96	5	2	0	7	4	3	7
229	Rural	52	125	4	5	0	9	0	9	9
230	Rural	146	352	4	0	0	4	0	4	4
231	Rural	48	116	7	0	0	7	1	6	7
232	Rural	41	99	2	0	0	2	0	2	2
233	Rural	43	104	0	42	0	42	0	42	42
234	Rural	52	125	1	0	0	1	0	1	1
235	Rural	65	157	0	0	0	0	0	0	0
236	Rural	37	89	0	0	0	0	0	0	0
237	Rural	41	99	7	0	0	7	0	7	7
238	Rural	30	72	0	0	0	0	0	0	0
239	Rural	165	398	13	6	0	19	6	13	19
240	Rural	215	518	74	0	0	74	43	31	74
241	Rural	91	219	11	0	0	11	11	0	11
242	Rural	192	463	28	30	0	58	0	58	58
243	Rural	136	328	12	0	0	12	3	9	12
244	Rural	27	65	16	9	0	25	7	18	25
245	Rural	119	287	11	0	0	11	0	11	11
246	Rural	133	321	20	0	0	20	12	8	20
247	Rural	282	680	16	0	0	16	14	2	16
248	Rural	82	198	4	0	0	4	3	1	4
249	Rural	172	415	5	0	0	5	1	4	5
250	Rural	66	159	1	1	0	2	0	2	2

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
251	Rural	10	24	0	109	0	109	0	109	109
252	Rural	103	248	36	0	0	36	3	33	36
253	Rural	81	195	4	0	0	4	0	4	4
254	Rural	52	125	3	0	0	3	1	2	3
255	Rural	7	17	2	0	0	2	0	2	2
256	Rural	49	118	8	8	0	16	2	14	16
257	Rural	50	121	1	0	0	1	0	1	1
258	Rural	205	494	333	0	0	333	12	321	333
259	Urban	25	60	256	1	0	257	14	243	257
260	Urban	43	104	68	19	0	87	7	80	87
261	Rural	45	108	0	0	0	0	0	0	0
262	Rural	57	137	0	0	0	0	0	0	0
263	Rural	97	234	13	0	0	13	2	11	13
264	Rural	198	477	3	13	4	20	16	4	20
265	Rural	200	482	0	0	158	158	0	158	158
266	Rural	45	108	4	0	0	4	0	4	4
267	Rural	98	236	14	11	0	25	6	19	25
268	Rural	46	111	0	7	0	7	0	7	7
269	Urban	108	260	1	0	0	1	1	0	1
270	Urban	193	465	3	3	6	12	0	12	12
271	Rural	65	157	20	0	0	20	17	3	20
272	Urban	47	113	101	219	0	320	79	241	320
273	Rural	25	60	5	12	0	17	0	17	17
274	Rural	45	108	78	33	0	111	70	41	111
275	Rural	186	448	18	0	0	18	6	12	18
276	Rural	35	84	85	1576	8	1669	17	1652	1669
277	Rural	225	542	5	14	0	19	0	19	19
278	Rural	81	195	38	0	0	38	16	22	38
279	Rural	57	137	10	404	352	766	0	766	766
280	Rural	126	304	12	10	4	26	4	22	26
281	Rural	79	190	0	11	0	11	0	11	11
282	Urban	41	99	12	22	0	34	0	34	34
283	Urban	26	63	98	0	0	98	19	79	98
284	Rural	60	145	8	0	0	8	8	0	8
285	Rural	68	164	14	79	0	93	0	93	93
286	Rural	0	0	55	33	0	88	20	68	88
	Totals	**26,971**	**64,994**	**27,681**	**9,654**	**4,444**	**41,779**	**13,732**	**28,047**	**41,779**

Footnotes:

TAZ – Traffic Analysis Zone
Com – Commercial Employment
Ind – Industrial Employment
Pub – Public Employment
Total Employment = Retail + Non-Retail
Total Employment = Industrial + Commercial + Public

2025 Socioeconomic Forecasts

Year 2025 population forecasts for the study area were provided initially by the Purchase Area Development District (PADD), then were reviewed and revised by a special subcommittee of the Transportation Work Group. The forecasts were based on the "High Growth" series population projections for McCracken County by the Kentucky State Data Center. The projections then were adjusted to include changing population-to-dwelling unit ratios and revised estimates for new dwelling units in McCracken County by 2025. Estimates for dwelling unit increases were consistent with the current Paducah/McCracken County Comprehensive Plan. The Year 2025 projected study area population is expected to grow to approximately 72,000 residents.

Employment forecasts were provided initially by the PADD and were based on data obtained from the Bureau of Economic Analysis (BEA). Employment forecasts also were revised to include already established industrial development areas located in western McCracken County, and at the Riverport. Due to the fact that Paducah – McCracken County is a regional employment center, employment is expected to increase at a faster rate than the population. The 2025 employment is forecasted to be approximately 50,000 persons.

Year 2025 population and employment projections by Traffic Analysis Zone for the Paducah – McCracken County Study Area are presented in **Table IV-2**. An important factor to consider, which may impact the ultimate accuracy of these projections, is the potential for a new Regional Industrial Park in Graves County just south of the McCracken County line. The size of this land area offers the potential for a huge employment base, and its development could create a major shift in the location of industrial employment by the year 2025.

Table IV- 2. 2025 Study Area Population and Employment Summary Data

	DU's	Population	Employment
1999	26,971	64,994	41,779
2025	29,878	72,000	50,000
Difference	2,907	7,006	8,221
Pct. Change	10.8%	10.8%	19.7%

Population and Employment Changes

The projected changes in population and employment from 1999 to 2025 are summarized in **Table IV-3**. Dwelling units and population are expected to increase by almost 11 percent. Employment is projected to increase by nearly 20 percent during this same time frame. The primary sources of increase are expected to be in industrial, commercial, and medical services employment.

The most noticeable change in population is expected to occur in the area south and west of I-24 between Old Mayfield Road and Hinkleville Road, where the population is anticipated to increase by 16 percent between now and 2025. This will occur as some new residential areas are developed due to a combination of limited areas available for growth, access to transportation facilities, and utility services over the next 25 years.

The largest changes in employment are expected to occur in many of the same areas which have been experiencing employment growth. Much of the retail growth is forecast along the US 60 corridor from Friedman Lane to Olivet Church Road, also around virtually all of the I-24 interchanges. Industrial growth is forecast to occur in the area between KY 305 and I-24, the Paducah Riverport, and redevelopment of the USEC plant facility. An unknown factor is still the proposed Regional Industrial Park in northern Graves County.

Table IV- 3. 2025 Study Area Population and Employment Data

		Demographics		Employment, C-I-P				Employment, R-NR		
Zone	Area Type	DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
1	Urban	15	36	214	0	2	216	55	161	216
2	Urban	13	31	779	0	41	820	193	627	820
3	Urban	25	60	433	65	4	502	270	232	502
4	Urban	28	67	129	201	86	416	43	373	416
5	Urban	24	58	9	0	609	618	0	618	618
6	Urban	2	5	30	21	55	106	0	106	106
7	Urban	18	43	70	376	4	450	20	430	450
8	Urban	6	14	38	42	7	87	16	71	87
9	Urban	12	29	189	150	4	343	81	262	343
10	Urban	120	289	122	83	2	207	83	124	207
11	Urban	15	36	201	1	10	212	160	52	212
12	Urban	25	60	87	0	1	88	12	76	88
13	Urban	8	19	125	0	316	441	0	441	441
14	Urban	40	96	189	31	162	382	180	202	382
15	Urban	6	14	0	0	0	0	0	0	0
16	Urban	0	0	553	133	19	705	348	357	705
17	Urban	0	0	137	325	0	462	13	449	462
18	Urban	18	43	16	0	0	16	14	2	16
19	Urban	42	101	47	22	0	69	0	69	69
20	Urban	87	210	40	1	0	41	32	9	41
21	Urban	165	398	114	227	5	346	47	299	346
22	Urban	51	123	158	10	101	269	34	235	269
23	Urban	39	94	37	50	0	87	15	72	87
24	Urban	46	111	2	5	8	15	2	13	15
25	Urban	94	227	12	1	0	13	10	3	13
26	Urban	0	0	64	28	12	104	63	41	104
27	Urban	59	142	26	17	2	45	0	45	45
28	Urban	49	118	42	9	0	51	1	50	51
29	Urban	37	89	33	0	52	85	15	70	85
30	Urban	70	169	10	20	0	30	10	20	30
31	Urban	46	111	5	0	0	5	5	0	5
32	Urban	51	123	0	0	0	0	0	0	0
33	Urban	23	55	6	0	0	6	6	0	6
34	Urban	0	0	7	1260	0	1267	0	1267	1267
35	Urban	74	178	23	0	0	23	22	1	23
36	Urban	59	142	20	28	0	48	20	28	48
37	Urban	125	301	33	0	0	33	26	7	33
38	Urban	0	0	19	333	0	352	0	352	352
39	Urban	3	7	219	243	93	555	9	546	555
40	Urban	148	357	253	130	0	383	188	195	383
41	Urban	103	248	24	0	0	24	14	10	24
42	Urban	63	152	147	106	1	254	97	157	254
43	Urban	28	67	231	0	124	355	127	228	355
44	Urban	45	108	11	0	10	21	10	11	21
45	Urban	58	140	14	0	0	14	0	14	14
46	Urban	81	195	490	22	84	596	204	392	596
47	Urban	38	92	19	264	0	283	19	264	283
48	Urban	206	496	109	17	0	126	29	97	126
49	Urban	91	219	39	50	0	89	27	62	89

		Demographics		Employment, C-I-P				Employment, R-NR		
Zone	Area Type	DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
51	Urban	20	48	93	18	0	111	80	31	111
52	Urban	134	323	0	0	0	0	0	0	0
53	Urban	117	282	428	0	9	437	104	333	437
54	Urban	12	29	46	51	0	97	15	82	97
55	Urban	120	289	2	0	0	2	0	2	2
56	Urban	60	145	16	20	0	36	0	36	36
57	Urban	58	140	7	9	0	16	7	9	16
58	Urban	23	55	195	1	3	199	86	113	199
59	Urban	217	523	183	12	0	195	164	31	195
60	Urban	77	186	77	0	0	77	3	74	77
61	Urban	150	362	8	0	0	8	5	3	8
62	Urban	91	219	328	84	0	412	52	360	412
63	Urban	30	72	1514	96	0	1610	41	1569	1610
64	Urban	104	251	77	0	0	77	14	63	77
65	Urban	49	118	54	0	102	156	41	115	156
66	Urban	386	930	280	0	22	302	85	217	302
67	Urban	115	277	196	2	40	238	34	204	238
68	Urban	535	1289	90	27	1	118	59	59	118
69	Urban	89	214	47	0	0	47	47	0	47
70	Urban	13	31	32	0	0	32	0	32	32
71	Urban	334	805	9	0	0	9	2	7	9
72	Urban	25	60	0	0	56	56	0	56	56
73	Urban	377	909	0	0	0	0	0	0	0
74	Urban	537	1294	36	0	0	36	0	36	36
75	Urban	110	265	40	0	6	46	15	31	46
76	Urban	8	19	0	0	0	0	0	0	0
77	Urban	264	636	113	0	0	113	62	51	113
78	Urban	119	287	5	66	65	136	0	136	136
79	Urban	114	275	51	0	0	51	0	51	51
80	Urban	271	653	9	0	0	9	1	8	9
81	Urban	312	752	23	0	1	24	2	22	24
82	Urban	218	525	9	0	0	9	1	8	9
83	Urban	183	441	10	0	0	10	0	10	10
84	Urban	8	19	6	0	0	6	2	4	6
85	Urban	328	790	103	0	57	160	13	147	160
86	Urban	4	10	1	0	0	1	1	0	1
87	Urban	25	60	35	3	74	112	34	78	112
88	Urban	341	822	5	0	0	5	2	3	5
89	Urban	99	239	32	0	0	32	0	32	32
90	Urban	131	316	66	2	0	68	41	27	68
91	Urban	12	29	10	0	0	10	10	0	10
92	Urban	10	24	1	0	0	1	0	1	1
93	Urban	65	157	213	0	13	226	23	203	226
94	Urban	228	549	0	0	0	0	0	0	0
95	Urban	84	202	0	0	0	0	0	0	0
96	Urban	0	0	2191	23	10	2224	26	2198	2224
97	Urban	67	161	1	100	0	101	1	100	101
98	Urban	187	451	5	5	0	10	2	8	10
99	Urban	144	347	130	0	0	130	83	47	130
100	Urban	27	65	154	8	8	170	135	35	170

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
101	Urban	154	371	100	403	0	503	97	406	503
102	Urban	335	807	0	0	0	0	0	0	0
103	Urban	144	347	4	0	0	4	3	1	4
104	Urban	20	48	6	19	0	25	6	19	25
105	Urban	50	121	253	5	0	258	167	91	258
106	Urban	38	92	169	40	2	211	4	207	211
107	Urban	22	53	241	0	9	250	66	184	250
108	Urban	42	101	156	0	54	210	56	154	210
109	Urban	0	0	23	0	0	23	22	1	23
110	Urban	0	0	14	0	0	14	0	14	14
111	Urban	14	34	120	0	0	120	109	11	120
112	Urban	0	0	13	22	0	35	11	24	35
113	Urban	0	0	15	0	0	15	14	1	15
114	Urban	150	362	41	155	37	233	34	199	233
115	Urban	24	58	34	0	61	95	16	79	95
116	Urban	0	0	0	0	55	55	0	55	55
117	Urban	105	253	3	0	0	3	1	2	3
118	Urban	106	255	0	25	0	25	0	25	25
119	Urban	0	0	82	61	13	156	54	102	156
120	Urban	45	108	71	66	10	147	42	105	147
121	Urban	23	55	339	119	36	494	199	295	494
122	Urban	339	817	69	11	0	80	52	28	80
123	Urban	56	135	0	0	0	0	0	0	0
124	Urban	48	116	49	0	102	151	36	115	151
125	Urban	26	63	0	0	0	0	0	0	0
126	Urban	0	0	7	0	0	7	4	3	7
127	Urban	271	653	129	0	0	129	58	71	129
128	Urban	0	0	0	0	71	71	0	71	71
129	Urban	159	383	168	0	0	168	155	13	168
130	Urban	192	463	348	0	0	348	142	206	348
131	Urban	193	465	20	6	0	26	20	6	26
132	Urban	0	0	123	0	0	123	122	1	123
133	Urban	5	12	124	0	104	228	120	108	228
134	Urban	2	5	0	0	0	0	0	0	0
135	Urban	2	5	94	28	0	122	69	53	122
136	Urban	31	75	41	12	0	53	41	12	53
137	Urban	40	96	76	0	0	76	76	0	76
138	Urban	2	5	62	130	0	192	62	130	192
139	Urban	1	2	975	0	0	975	770	205	975
140	Urban	2	5	8	0	16	24	4	20	24
141	Urban	2	5	8	0	0	8	8	0	8
142	Urban	0	0	354	0	59	413	70	343	413
143	Urban	35	84	8	5	0	13	7	6	13
144	Urban	123	296	4	101	0	105	3	102	105
145	Urban	10	24	36	8	34	78	34	44	78
146	Urban	163	393	2	39	0	41	0	41	41
147	Urban	35	84	29	16	0	45	25	20	45
148	Urban	7	17	38	1	0	39	36	3	39
149	Urban	15	36	309	186	4	499	210	289	499
150	Urban	9	22	9	0	0	9	8	1	9

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
151	Urban	16	39	296	0	0	296	296	0	296
152	Urban	0	0	3118	0	0	3118	2954	164	3118
153	Urban	25	60	377	0	0	377	366	11	377
154	Urban	13	31	503	6	46	555	428	127	555
155	Urban	494	1191	1177	0	0	1177	1128	49	1177
156	Urban	12	29	763	0	1	764	632	132	764
157	Urban	222	535	95	0	0	95	18	77	95
158	Urban	130	313	16	0	0	16	6	10	16
159	Urban	100	241	70	33	0	103	12	91	103
160	Urban	205	494	83	2	1	86	73	13	86
161	Urban	31	75	11	0	2	13	11	2	13
162	Urban	182	439	3	2	1	6	0	6	6
163	Urban	25	60	6	24	0	30	0	30	30
164	Urban	185	446	32	0	0	32	20	12	32
165	Urban	0	0	797	0	0	797	3	794	797
166	Urban	0	0	523	0	340	863	318	545	863
167	Urban	94	227	12	0	0	12	11	1	12
168	Urban	328	790	6	0	0	6	3	3	6
169	Urban	28	67	91	0	0	91	52	39	91
170	Urban	5	12	0	0	189	189	0	189	189
171	Urban	383	923	340	10	0	350	234	116	350
172	Urban	215	518	35	0	0	35	3	32	35
173	Urban	192	463	23	0	1	24	12	12	24
174	Urban	210	506	97	10	0	107	66	41	107
175	Rural	630	1518	71	0	20	91	1	90	91
176	Rural	53	128	150	122	7	279	106	173	279
177	Urban	168	405	203	11	3	217	158	59	217
178	Urban	159	383	2	18	2	22	2	20	22
179	Urban	222	535	393	22	0	415	172	243	415
180	Urban	56	135	63	8	32	103	25	78	103
181	Urban	76	183	260	402	5	667	194	473	667
182	Urban	101	243	124	0	0	124	6	118	124
183	Urban	452	1089	131	13	71	215	17	198	215
184	Rural	138	333	6	0	0	6	0	6	6
185	Rural	8	19	0	0	0	0	0	0	0
186	Rural	148	357	86	0	0	86	3	83	86
187	Urban	14	34	8	1	0	9	0	9	9
188	Rural	30	72	9	0	0	9	9	0	9
189	Urban	44	106	0	0	0	0	0	0	0
190	Urban	87	210	0	0	0	0	0	0	0
191	Urban	31	75	63	1	0	64	1	63	64
192	Urban	182	439	10	0	0	10	4	6	10
193	Urban	154	371	16	0	75	91	16	75	91
194	Urban	86	207	49	0	0	49	44	5	49
195	Urban	0	0	374	97	0	471	302	169	471
196	Urban	0	0	895	32	21	948	869	79	948
197	Urban	62	149	28	485	3	516	6	510	516
198	Urban	229	552	459	83	0	542	151	391	542
199	Urban	124	299	0	2	0	2	0	2	2
200	Urban	158	381	184	7	160	351	17	334	351

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
201	Urban	116	280	57	2	0	59	41	18	59
202	Urban	37	89	0	0	0	0	0	0	0
203	Urban	30	72	2	0	0	2	0	2	2
204	Rural	83	200	0	0	0	0	0	0	0
205	Urban	32	77	26	10	0	36	18	18	36
206	Urban	84	202	3	0	0	3	0	3	3
207	Urban	0	0	8	4	20	32	0	32	32
208	Urban	123	296	3	3	0	6	0	6	6
209	Urban	2	5	1	0	0	1	0	1	1
210	Urban	156	376	36	0	0	36	36	0	36
211	Urban	24	58	11	0	41	52	11	41	52
212	Rural	321	774	47	4	0	51	0	51	51
213	Urban	585	1410	16	69	0	85	1	84	85
214	Urban	235	566	22	37	0	59	7	52	59
215	Urban	70	169	3	0	0	3	0	3	3
216	Urban	43	104	0	0	0	0	0	0	0
217	Rural	227	547	36	0	7	43	34	9	43
218	Rural	50	121	51	0	0	51	31	20	51
219	Rural	244	588	2	0	112	114	2	112	114
220	Rural	55	133	5	4	0	9	0	9	9
221	Rural	23	55	99	0	4	103	99	4	103
222	Rural	72	174	73	0	0	73	31	42	73
223	Rural	220	530	2	0	0	2	0	2	2
224	Rural	16	39	1	0	0	1	0	1	1
225	Rural	15	36	14	0	0	14	0	14	14
226	Rural	148	357	30	0	0	30	6	24	30
227	Rural	145	349	6	0	0	6	0	6	6
228	Rural	40	96	5	2	0	7	4	3	7
229	Rural	52	125	4	5	0	9	0	9	9
230	Rural	146	352	4	0	0	4	0	4	4
231	Rural	48	116	7	0	0	7	1	6	7
232	Rural	41	99	2	0	0	2	0	2	2
233	Rural	43	104	0	42	0	42	0	42	42
234	Rural	52	125	1	0	0	1	0	1	1
235	Rural	65	157	0	0	0	0	0	0	0
236	Rural	37	89	0	0	0	0	0	0	0
237	Rural	41	99	7	0	0	7	0	7	7
238	Rural	30	72	0	0	0	0	0	0	0
239	Rural	257	619	13	6	0	19	6	13	19
240	Rural	505	1217	74	0	0	74	43	31	74
241	Rural	382	921	11	0	0	11	11	0	11
242	Rural	482	1162	28	30	0	58	0	58	58
243	Rural	402	969	12	0	0	12	3	9	12
244	Rural	55	133	16	9	244	269	7	262	269
245	Rural	245	590	11	0	0	11	0	11	11
246	Rural	200	482	20	0	0	20	12	8	20
247	Rural	282	680	16	0	0	16	14	2	16
248	Rural	121	292	4	0	0	4	3	1	4
249	Rural	172	415	5	0	0	5	1	4	5
250	Rural	244	588	1	1	0	2	0	2	2

Zone	Area Type	Demographics		Employment, C-I-P				Employment, R-NR		
		DU's	Population	Com	Ind	Pub	Total	Retail	Non-Retail	Total
251	Rural	35	84	0	109	0	109	0	109	109
252	Rural	271	653	36	0	0	36	3	33	36
253	Rural	81	195	4	0	0	4	0	4	4
254	Rural	52	125	3	0	0	3	1	2	3
255	Rural	7	17	2	0	0	2	0	2	2
256	Rural	116	280	8	8	0	16	2	14	16
257	Rural	166	400	1	0	0	1	0	1	1
258	Rural	322	776	833	0	0	833	12	821	833
259	Urban	45	108	256	1	0	257	14	243	257
260	Urban	80	193	364	19	0	383	7	376	383
261	Rural	45	108	0	0	0	0	0	0	0
262	Rural	57	137	0	0	0	0	0	0	0
263	Rural	97	234	13	0	0	13	2	11	13
264	Rural	198	477	3	13	4	20	16	4	20
265	Rural	200	482	0	0	158	158	0	158	158
266	Rural	83	200	4	0	0	4	0	4	4
267	Rural	176	424	14	11	0	25	6	19	25
268	Rural	68	164	0	7	0	7	0	7	7
269	Urban	133	321	297	0	0	297	1	296	297
270	Urban	223	537	299	3	6	308	0	308	308
271	Rural	65	157	20	0	0	20	17	3	20
272	Urban	74	178	101	621	0	722	79	643	722
273	Rural	49	118	5	12	0	17	0	17	17
274	Rural	45	108	78	33	0	111	70	41	111
275	Rural	186	448	18	0	0	18	6	12	18
276	Rural	35	84	85	1576	8	1669	17	1652	1669
277	Rural	225	542	5	14	0	19	0	19	19
278	Rural	81	195	38	0	0	38	16	22	38
279	Rural	57	137	10	404	352	766	0	766	766
280	Rural	126	304	12	412	4	428	4	424	428
281	Rural	165	398	0	11	0	11	0	11	11
282	Urban	62	149	12	22	0	34	0	34	34
283	Urban	41	99	98	0	0	98	19	79	98
284	Rural	60	145	8	402	0	410	8	402	410
285	Rural	68	164	114	481	0	595	0	595	595
286	Rural	0	0	155	33	0	188	20	168	188
	Totals	**29,878**	**72,000**	**33,045**	**12,067**	**4,888**	**50,000**	**16,348**	**33,652**	**50,000**

Footnotes:

TAZ – Traffic Analysis Zone
Com – Commercial Employment
Ind – Industrial Employment
Pub – Public Employment
Total Employment = Retail + Non-Retail
Total Employment = Industrial + Commercial + Public

Transportation Model Development

The Paducah – McCracken County Traffic Model was used in this study to predict future travel demand and to evaluate the impact of alternative transportation improvement projects. The traditional modeling approach was followed: trip generation, trip distribution and trip assignment. Due to the size of the Paducah urban area and the relatively minor role that other transportation modes play in the overall transportation system, this was an automobile model only. Thus, there was no mode choice component of the model. The MinUTP modeling package was used as the developmental tool.

Travel within the study area was divided into three trip categories:

1. Internal-Internal (I-I) Trips – trips with both the origin and destination within the study area;

2. External-Internal (E-I) Trips – trips with either origin or destination inside the study area and the other terminus outside the study area; and

3. External-External (E-E) Trips – trips that pass through the study area and have both the origin and destination outside the study area.

There were no current travel data that were applicable to the Paducah – McCracken County model. All trips, therefore, were synthesized mathematically using relationships derived from past studies in similar small urban areas. Using these relationships, production and attraction equations were derived for three internal trip purposes:

1. Home Based Work (HBW) – trips with one end at home and the other end at work;

2. Home Based Other (HBO) – all other trips with one end at home; and

3. Non-Home Based (NHB) – trips with neither end at home.

The gravity model was used to distribute internal trips (both I-I trips and E-I trips). The gravity model basically assumes that the number of trips between any two traffic zones is directly proportional to the amount of activity or "gravity" (productions and attractions) between the two zones and inversely proportional to the distance (and therefore travel time) separating the zones.

An initial internal trip rate of 2.4 daily trips per person was used in the model development process. This trip rate was carried forward from previous small urban area studies in Kentucky, dating back to the 1960's. However, a number of current studies point to a more mobile society today; that is, people make more trips today than they did in the 1960's, 1970's, and even in the 1980's. The internal trip rate was increased during the model calibration process, and the zones were separated into urban and rural categories to account for differing trip generation characteristics. Ultimately an internal trip rate of 3.9 daily trips per person in the urban areas and 2.5 daily trips per person in the rural areas produced the best results.

The 1999 base year model was calibrated to existing traffic counts. That is, for the base year, the model was used to "predict" traffic on specific network links and was compared to actual counts on those same links. A model is considered to be calibrated when the differences between predicted volumes and actual counts fall within acceptable limits. The root mean square error (RMSE) was used as a calibration

measure. Generally, a RMSE of 30 percent or less is considered to be acceptable. After adjustments to the individual model components were made, a final RMSE of 27.83 percent was obtained for the Paducah model.

Planned and Programmed Transportation Improvements

Beginning with the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, states were required to take an approach to transportation planning that included an emphasis on enhancing transportation system efficiency, monitoring and improving performance, and ensuring that future transportation investments reflect the impacts on the economy, the environment, and quality-of-life. With the passage of the Transportation Equity Act for the 21st Century (TEA-21) in 1998, the statewide transportation planning process established in ISTEA was continued and confirmed as the primary mechanism for cooperative transportation decision-making in Kentucky.

Kentucky's statewide planning process has both a short-range component and a long-range component. The *Statewide Transportation Plan* presents a long-range, 20-year vision of statewide needs and transportation improvements. The Plan only includes projects for which some type of funding is anticipated; however, TEA-21 allows states to include in the financial plan, for illustrative purposes, additional potential projects that would be included in the Long-Range Plan if reasonable additional resources beyond those identified in the financial plan become available. The current *Statewide Transportation Plan (FY 1999 – 2018)* was finalized in January 2000.

The short-range component of Kentucky's statewide planning process actually has two parts. The *Six Year Highway Plan* details the spending of state and federal monies for construction, maintenance and planning activities over the next six years. The Plan matches anticipated annual funding against estimated project costs. The current version of the Plan is for Fiscal Years 2001 – 2006.

The other short-range component is the *Statewide Transportation Improvement Program* (STIP). It lists projects to be advanced in the next three years with the appropriate federal agencies. The STIP is a subset of the *Six Year Highway Plan* and, like the *Six Year Plan*, is fiscally constrained. Kentucky's current STIP was completed in November 2000.

For McCracken County, there are several major construction projects contained in the current *Six Year Highway Plan FY 2001 – 2006*. Those are:

- US 60 (Wickliffe Road) – major widening from two to four lanes from Bethel Church Road to KY 1154, 1.6 miles;
- US 60 – new bridge and approaches over the Tennessee River at Livingston County Line, 0.6 miles;
- US 60 – relocation and minor widening from Clarks River to junction with US 62, 1.0 miles;
- US 62 – relocation from the US 60 departure to KY 1887 (Park Blvd), 1.5 miles;
- KY 998 (Olivet Church Road) – Bridge and approaches at P&L Railroad 0.3 mile south of KY 305;
- KY 994 – interchange with I-24; and
- Paducah Outer Loop – new connector from US 45 to US 60 west of I-24, 6.0 miles.

In addition, there was a project contained in the Plan to widen US 62 (Alben Barkley Drive) from US 45 to I-24 which has been delayed due to local opposition.

In the long-range *Statewide Transportation Plan (FY 1999 – 2018)*, there are two major "Illustrative Projects" in McCracken County. The provision for illustrative projects allows the State to include projects in the Long-Range Plan that do not currently have funding or projected funding within the twenty year period. These projects are:

- I-24 – widen to accommodate I-66; and
- I-66 – new road from the Missouri State Line to I-24 in Paducah;

A map containing short-term *Six Year Highway Plan* and long-term *Statewide Transportation Plan* projects is presented in **Figure IV-2**.

Future Traffic Forecasts

Year 2025 traffic forecasts for the Paducah – McCracken County study area are presented in **Figure IV-3**. Traffic volumes from the 1999 model are included in this figure as a baseline for comparison. The forecasts were developed using the Paducah – McCracken County Traffic Model. The transportation network was assumed to be that which exists today plus those McCracken County projects contained in the *Six Year Highway Plan FY 2001 – 2006*. Those roads anticipated to experience the heaviest traffic volumes include Interstate 24 (62,000 – 90,000 vehicles per day), US 45 Mayfield Road (45,000 vehicles per day), and US 60 Hinkleville Road (60,000 vehicles per day).

There is projected to be a net increase in traffic within the downtown area as a result of both a slight employment increase and the strong efforts by community leaders to maintain a viable downtown business district. This growth will reverse a trend of declining downtown area traffic that has occurred since the 1970's due to transportation projects such as Interstate 24 and the Hinkleville Road improvements that improved mobility within the urban area, along with the shift in the commercial base from downtown to the Park Avenue – Hinkleville Road corridor.

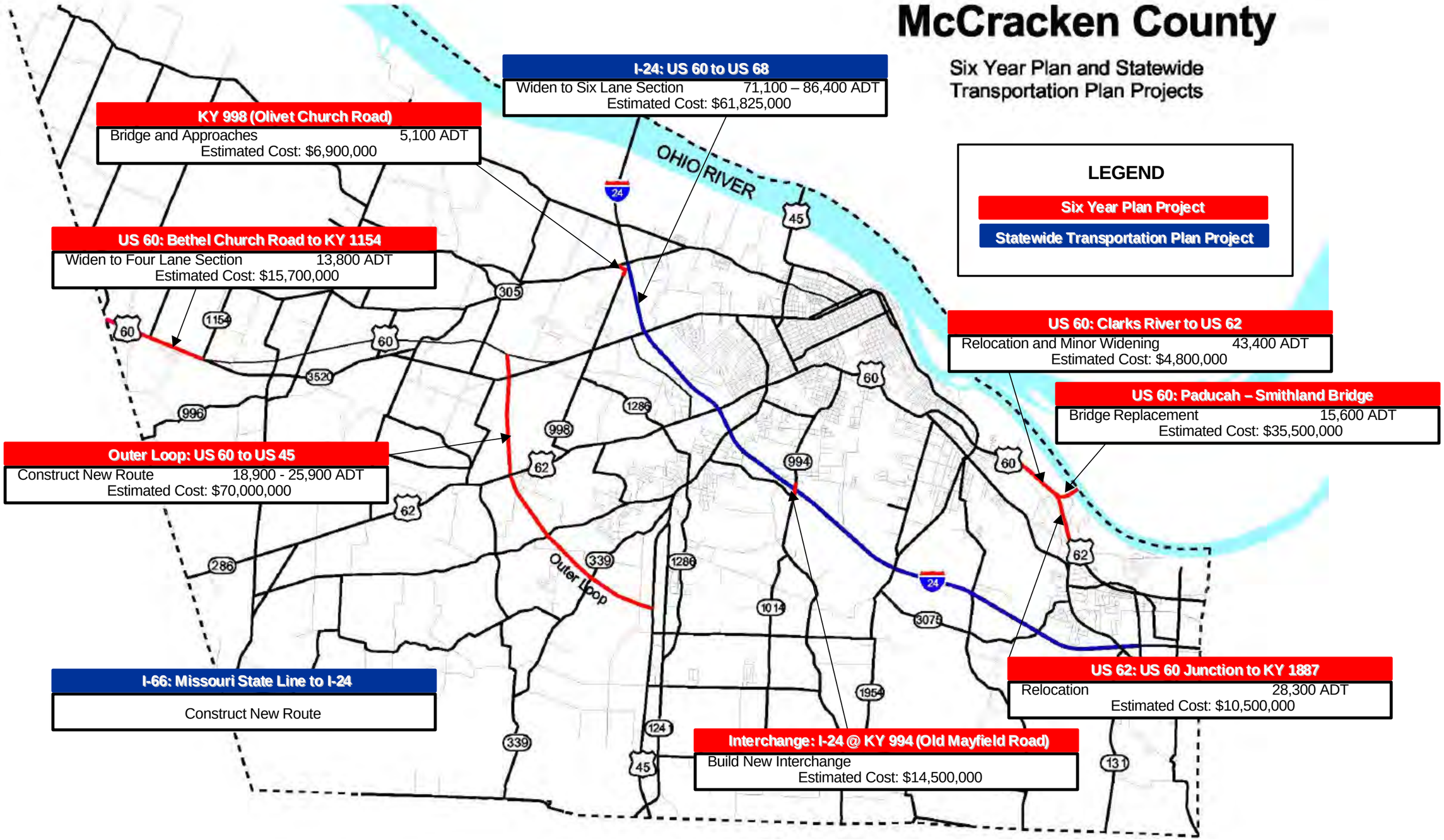

Figure IV- 2. Planned and Programmed Improvements

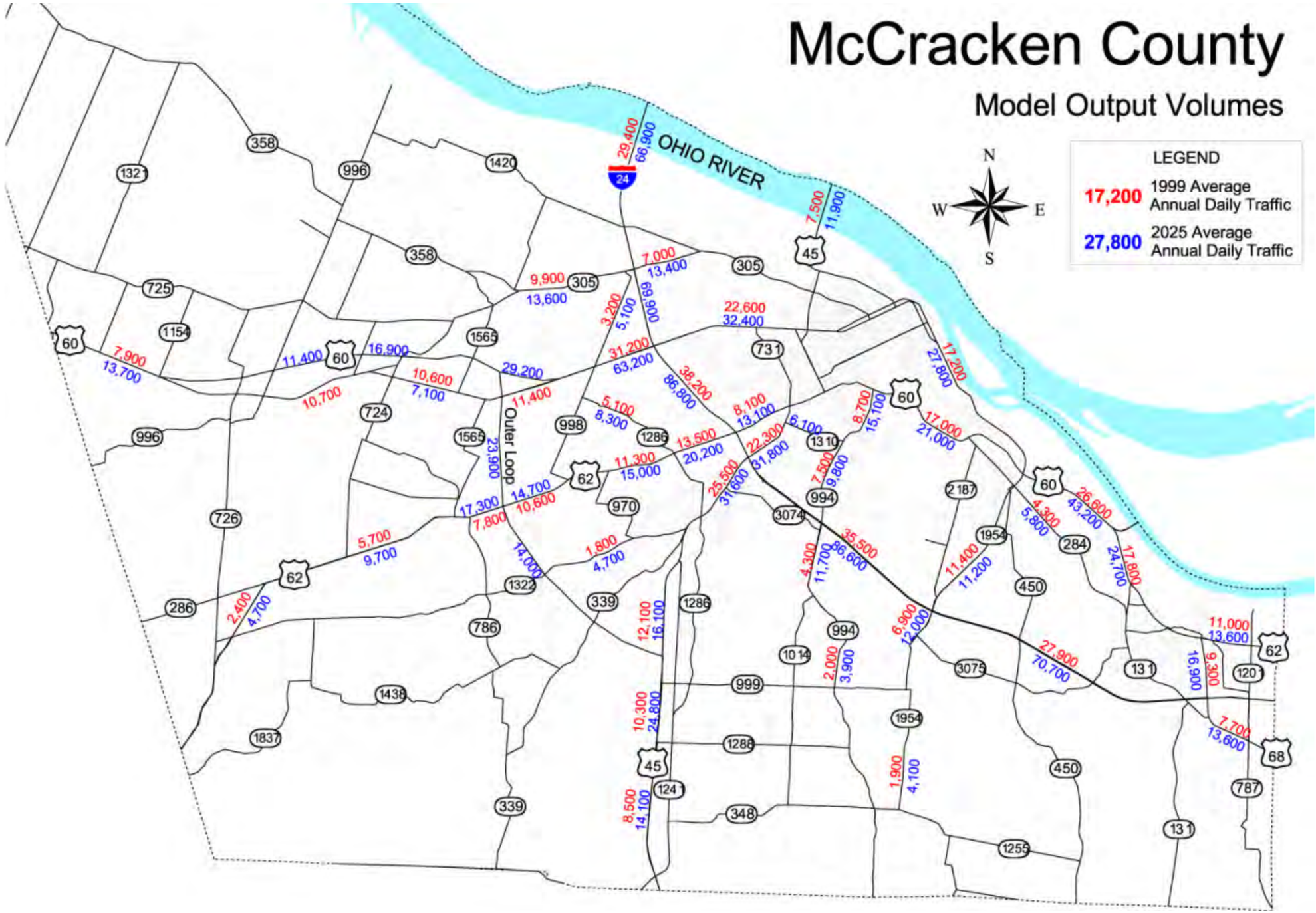

Figure IV- 3. 1999 Existing and 2025 E+C Traffic Volumes

Chapter V

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CHAPTER V - OPERATIONAL IMPROVEMENT PLAN

The Operational Improvement Plan is a list of short-term improvement projects that will provide incremental capacity and safety benefits in a cost effective manner. The focus of these projects is better, safer, and more efficient utilization of the existing transportation system. Several of these projects can be implemented quickly and at a relatively low cost.

Operational Improvement Projects

Capacity and safety are the typical basis for operational improvement projects. Operational improvements characteristically are very cost-effective. Unfortunately, these benefits are reduced over time as traffic grows. At some point, major improvements are needed to provide the desirable overall level of service. Many of the projects in this plan were developed in response to interviews with local law enforcement and public works officials and the District 1 Office of the Kentucky Transportation Cabinet (KYTC).

A list of operational improvement projects is listed in **Table V-1** and the locations of these projects are displayed in **Figure V-1**. The projects are generally listed geographically and have not been prioritized. They have been grouped into three categories that, on a scale of one to three, indicate which projects would yield the greatest benefits. Group I projects provide the greatest benefit at the least cost. At the other end, Group III projects, while still beneficial, have a higher relative cost and/or require more resources to implement. Many of these projects involve intersections on highly congested roadway sections. Some are high accident locations as well. These improvements provide an incremental benefit at specific locations that increase capacity, safety, and provide other enhancements.

1. Protected/Permitted Left Turn Signal Replacement Program

It is recommended that a program be established to review all traffic signals in Paducah and McCracken County that have protected only left turn phases. They should be reevaluated to determine whether a protected/permitted left turn treatment would be more appropriate. The use of protected/permitted left turn treatments can significantly reduce the delay experienced by left turning vehicles and improve the overall operation of the intersection. A list of candidate locations is presented in **Table V-2**.

This conversion process can be done quickly and with very little construction cost. The cost per intersection approach (leg) is approximately $1,000 for materials and labor. The implementation of any protected/permitted left turn treatments should be in accordance with the current KYTC policies regarding such signal indications.

2. Retrofit Existing Traffic Signals in High Speed Zones With Advance Vehicle Detection

It is recommended that all traffic signals in high speed zones, 45 miles per hour and higher, be checked for properly installed vehicle sensors, on high speed approaches, in advance of the intersections. These detectors, commonly referred to as a “green extension system,” are designed to keep high-speed traffic moving through the “dilemma zone” as it approaches the intersection. The dilemma zone is an area where the decision to stop or proceed through an intersection, with a yellow indication, poses a dilemma for most drivers. This system has been shown to be highly effective in reducing crashes at these intersections. Candidate intersections for green extension systems are listed in **Table V-3**.

Table V-1. Operational Improvement Projects

	Location	Description	Benefit Group*	Cost Estimate
1	Various Intersections	Replace protected only left turn phases at traffic signals	1	$1,000 per signal
2	Various Intersections	Retrofit traffic signals with "Green Extension Systems"	1	$10,000 per intersection
3	Various Areas	Traffic signal system timing maintenance and expansion	1	$65,000**
4	28th Street (US 45)	Resurface, repair, and remark 28th Street from Jackson Street to Noble Park as a three-lane road with a bi-directional left turn and bike lanes.	1	$1,465,000
5	Lone Oak Road (US 45) at the I-24 Eastbound Ramp	Hazard elimination	1	$4,000
6	Lone Oak Road (US 45) at Bleich Road (KY 3074)	Improve radii for KY 3074	2	$7,500
7	Lone Oak Road (US 45) at Friendship Road (KY 1286)	Add left turn lanes to Friendship Road (KY 1286)	3	$625,000
8	Blandville Road (US 62) at Friendship Road (KY 1286)	Add left turn lanes to Friendship Road (KY 1286) at the intersection with US 62	2	$110,000
9	Friendship Road (KY 1286)	Add right turn lane for traffic turning into the elementary school	3	$50,000
10	Jackson Street (US 60) at 21st Street	Modify traffic signal	1	$7,500
11	Blandville Road (US 62) at KY 286	Relocate KY 286 eastbound approach to create a 90 degree intersection	2	$250,000
12	Blandville Road (US 62) at Lovelaceville Road (KY 1322)	Relocate and raise KY 1322 approach to improve sight distance.	1	$220,000
13	Old Benton Road (KY 284) at Husbands Road	Increase turning radii on Husbands Road corners and rebuild traffic signal.	2	$100,000
14	Old Benton Road (KY 284) at Beltline Highway (US 60/62)	Straighten curve on westbound KY 284 approach, multiple lane marking revisions, and rebuilding the traffic signal.	3	$110,000
15	KY 131 at Old Benton Road (KY 284)	Relocate KY 284 eastbound approach to create a 90 degree intersection	2	$115,000
16	Kentucky Avenue at 16th Street	Create left turn lanes on Kentucky Avenue OR Resurface and remark as a three-lane road	3	$70,000 $27,500
17	Cairo Road (KY 305) at H.C. Mathis Dr. (US 45)	Turning radius improvement on the northwest corner	2	$55,000
18.	Friedman Lane At US 60	Add turning lane to Friedman Lane approach	2	$20,000

*Relative comparison of benefits, cost, and ease of implementation. Group I projects have the greatest benefits, least cost, and/or easily implemented.

**Estimate for timing plans and radio communications to interconnect additional traffic signals. Does not include the cost of major equipment upgrades (equipment cabinets, poles, signal heads, wiring, etc.) to signals owned and operated by the City of Paducah.

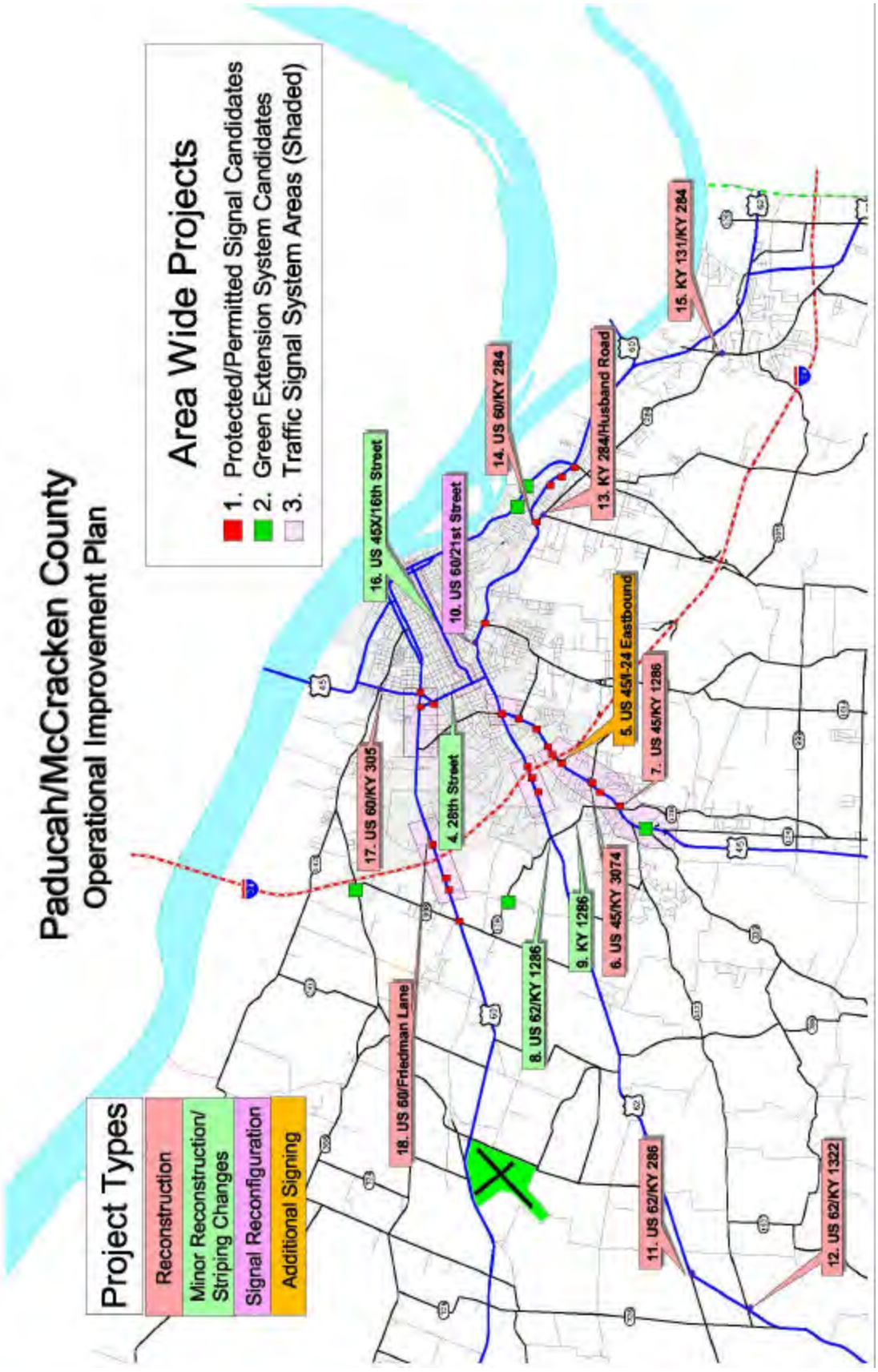

Paducah/McCracken County
Operational Improvement Plan
Area Wide Projects
1. Protected/Permitted Signal Candidates
2. Green Extension System Candidates
3. Traffic Signal System Areas (Shaded)
Project Types
Reconstruction
Minor Reconstruction/ Striping Changes
Signal Reconfiguration
Additional Signing
16. US 45X/16th Street
10. US 60/21st Street
14. US 60/KY 284
13. KY 284/Husband Road
15. KY 131/KY 284
5. US 45/I-24 Eastbound
7. US 45/KY 1286
17. US 60/KY 305
4. 26th Street
9. KY 1286
6. US 45/KY 3074
18. US 60/Friedman Lane
8. US 62/KY 1286
11. US 62/KY 286
12. US 62/KY 1322

Table V-2. Candidates for Protected/Permitted Left Turn Treatments

Intersection			Direction of Approach			
Major Street		Minor Street	Northbound	Southbound	Eastbound	Westbound
US 60	at	US 60 X (Puryear Dr.)			X	X
US 60	at	Paducah Town Cent. (West)			X	X
US 60	at	Paducah Town Cent. (East)			X	X
US 60	at	KY 284 (Bridge St.)	X	X		
US 60	at	KY 994 (Old Mayfield Rd.)			X	X
US 60	at	US 60X (Noble Park Ent.)			X	X
US 60	at	Coleman Road			X	X
US 60	at	Center Mall Entrance			X	X
US 60	at	Holt Road			X	X
US 60	at	KY 996 (Olivet Church Rd.)			X	X
US 45	at	KY 1286 (Friendship Rd.)	X	X		
US 45	at	Lakeview	X	X		
US 45	at	KY 3074 (Bleich Rd.)	X	X		
US 45	at	I-24 Eastbound Ramp	X			
US 45	at	I-24 Westbound Ramp		X		
US 45	at	Kennedy Rd.	X	X		
US 45	at	Highland Blvd.	X	X		
US 45	at	Berger Rd.	X	X		
US 45	at	US 62	X	X		
US 45	at	US 60 (28^{th} St.)			X	X
US 45	at	US 60X (J.C. Civic Cent.)			X	X
US 62	at	US 68				X
US 62	at	I-24 Westbound Ramp			X	
US 62	at	I-24 Eastbound Ramp				X
US 62	at	P.C.C. Entrance			X	X
A total of 45 intersection approaches are listed.						

Table V-3. Candidates for Advance Vehicle Detection

US 60 at KY 1154 (Hobbs Road)
US 60X (Loop) at Bethel Street
US 60X (Loop) at Locust Drive
US 45 at KY 339 (Contest Road)
KY 305 at KY 998 (Olivet Church Road)
KY 1286 at New Holt Road

3. Traffic Signal System Timing Maintenance and Expansion

Paducah has only three areas with coordinated signal systems. They are the downtown area, US 60 from Friedman Lane to Holt Road, and the area around the intersection of US 62 and US 45 (Hannan Plaza). The timing of these systems periodically requires revisions.

It was noted during field investigations that the downtown signal system was recently rebuilt as a traffic and pedestrian actuated system. That is to say, sensors are used to trigger the vehicular phases and pedestrians are required to use push buttons to activate pedestrian signals. For traffic flow and for the convenience of pedestrians in a downtown area, this is not the most efficient method of operation.

Traditionally, downtown signal systems are pre-timed. This means that all movements, vehicular and pedestrian, are activated automatically and given the same amount of time every cycle. This is fundamental in progressing traffic through multiple intersections on a two-dimensional street network. It is also beneficial for pedestrians in an area where they are most concentrated. It is recommended that the mode of operation for the downtown signal system be re-evaluated and reprogrammed as a pre-timed signal system.

It is also recommended that the City of Paducah upgrade the control equipment for three traffic signals on Broadway for integration into the State maintained signal system. This will increase the efficiency of traffic flow on City routes, especially where seams exist between City traffic signals and the State system.

The first group of coordinated traffic signals in Paducah was the US 60 corridor between Friedman Lane and Holt Road. This system still performs well during the average weekday, but US 60 is heavily congested during Friday and Saturday nights, as well as peak shopping seasons. The recommendation for this system is to develop special timing plans for weekend, evenings, and shopping seasons.

Finally, it is recommended that the implementation of coordinated signal systems continue by creating new systems on Lone Oak Road (US 45) from Kennedy Road to Lovelaceville Road (KY 1322), and Blandville Road (US 62) from I-24 to the Paducah Community College Campus. Figure V-1 highlights all of the areas with existing and proposed traffic signal systems.

4. 28th Street (US 45/60) – Reconfigure between Jackson Street and Park Avenue (US 60)

This project is intended to eliminate vehicular weaving that currently occurs between several blocks, establish a dedicated left turn lane for all intersections, and create a designated bike route. The vehicular weaving is caused in part by the lane assignments at some signalized intersections, and by the disjointed and misaligned roadway. Notice in **Figure V-2** how the white edge line of the near block is aligned with the double yellow centerline of the far block.

It is recommended that, through the use of limited curb reconstruction and resurfacing, this section of US 45/60 be changed from a four-lane road to a three-lane road with a bi-directional left turn lane and bike lanes. Currently, at multiple intersections, only one lane is allowed to pass through because the other lane is an exclusive right or left turn lane. This restricts the capacity of a four-lane roadway. A three-lane cross section would maintain the current level of vehicular capacity through those same intersections and provide:

1. A left turn lane for all intersections (signalized and unsignalized);
2. Leave space for bike lanes adjacent to the curbs; and
3. Ease lane shifting through the intersections.

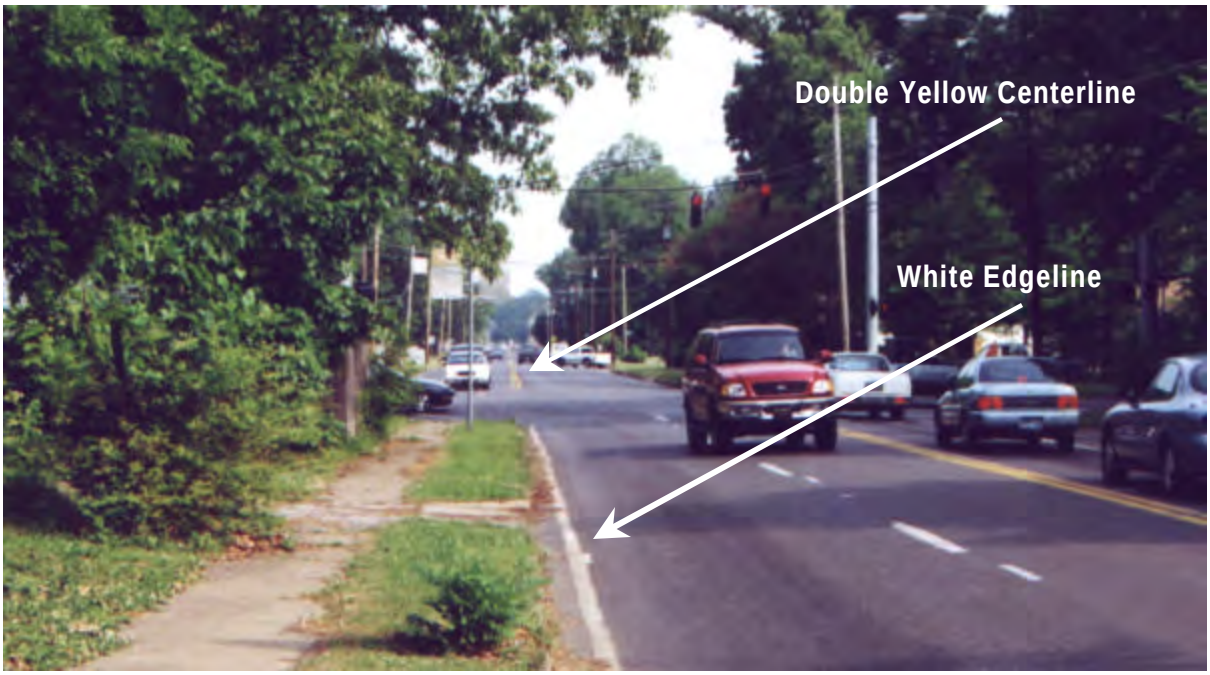


Figure V-2. 28th Street Looking North to Jefferson Street

This project should reduce the occurrence of rear-end and side-swipe accidents. Twenty-eighth Street also would provide an excellent route for cyclists as it passes near the Paducah Tilghman High School and Vocational School, Western Baptist Hospital, Carson Park, and the western terminus is directly at the entrance into Noble Park. Twenty-eighth Street could serve as the backbone of a bike network in Paducah. **Figure V-3** displays the recommended concept of this project.

11 X 17 Sheet

5. Lone Oak Road (US 45) at I-24 Eastbound Hazard Elimination

There is a distinctive pattern of accidents at this intersection. Not only does the type of collision indicate the problem, but motorist information also reveals a pattern. They are primarily non-local motorists passing though the Whitehaven Welcome Center on the extended I-24 ramp between US routes 62 and 45. It is theorized that non-local motorists expect to be immediately on I-24 when leaving the Welcome Center. In actuality, they are still on a ramp that must cross a signalized intersection with US 45 before rejoining Interstate 24. Not anticipating a traffic signal, these motorists often fail to stop and collide with US 45 traffic. It is recommended that additional "signal ahead" signs be placed on the ramp supplemented with flashing beacons. **Figure V-4** illustrates the I-24 ramp network between US routes 62 and 45.

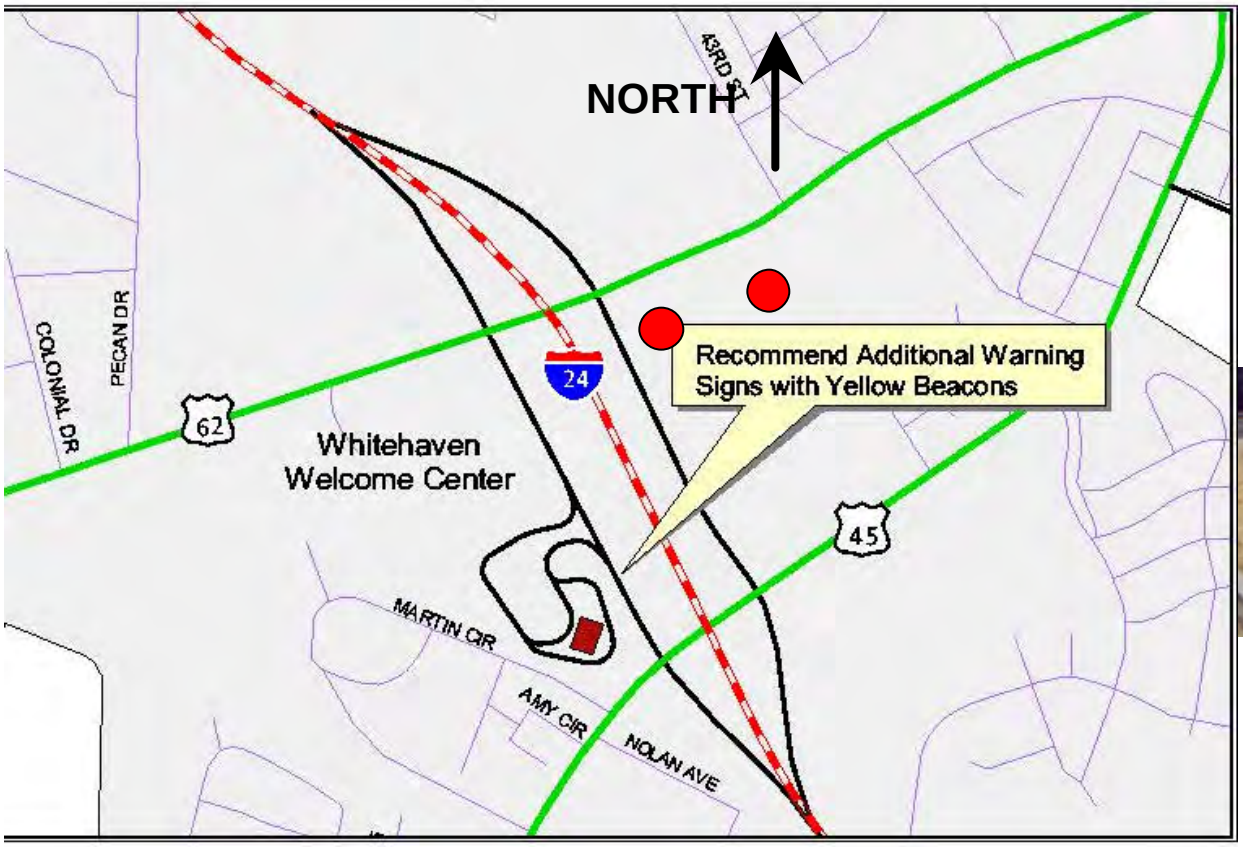


Figure V-4. Interstate 24, US 45, And US 62 Interchange

6. Improve Turning Radii for Bleich Road (KY 3074) at Lone Oak Road (US 45)

The curbs at this intersection have insufficient radii on both corners. It is very evident that large vehicles are mounting the curb and leaving ruts in the soil behind it as indicated in **Figure V-5**. The recommendation for this intersection is to reconstruct the curbs to provide larger turning radii on both corners of KY 3074.

Figure V-5. Corner Encroachment At Bleich Road (KY 3074) and US 45

7. Addition of Left Turn Lanes for Friendship Road (KY 1286) at Lone Oak Road (US 45)

The need for installing left turn lanes on KY 1286 at US 45 was brought about as a result of significant backups that occur during peak periods. Friendship Road provides an alternative connector route roughly paralleling I-24 from southern McCracken County to near the heavy commercial growth area along Hinkleville Road. Along the way, it crosses Krebs Station Road, US 45, US 62, Holt Road, and ends at Olivet Church Road. It is a collector route for the residential areas that lie between these major roadways. Currently, there are buildings that are extremely close to Friendship Road at the US 45 intersection, as shown in **Figure V-6**. The removal of one or more buildings on both sides of Lone Oak Road would be necessary to construct left turning lanes. The Right-of-Way costs may make this project not feasible.

Figure V-6. Friendship Road (KY 1286) at US 45

8. Add left turn lanes to Friendship Road (KY 1286) at Blandville Road (US 62)

Friendship Road is a two-lane roadway that serves as a vital collector route between the major arterial routes of US 45, US 60, and US 62. The intersection of Friendship Road with US 62 would benefit from additional capacity in the form of left turn lanes. This intersection experiences significant turning movements during the peak periods. The entrance to Paducah Community College is less than one mile from this intersection. Currently, a single left turning vehicle will delay through vehicles waiting behind it. The addition of left turn lanes would remove this interference to through and right turning vehicles.

9. Add right turn lane for the Elementary School on Friendship Road (KY 1286)

Again, Friendship Road is a two-lane roadway. Approximately half-way between US 45 and US 62 is an elementary school. The access point of this school does not have any turning lanes. The addition of a right turning lane would greatly decrease the potential of rear-end crashes for westbound KY 1286 in the immediate area of the school.

10. Modifying the Jackson Street (US 60) and 21st Street Traffic Signal

There is limited sight distance to the signal indications for westbound US 60. The use of a right turn signal to 21st Street can be confusing to motorists as it is seen well before those intended for the westbound movement. This is shown is **Figure V-7**. It is recommended that the traffic signal be reconfigured according to the diagram in **Figure V-8** to increase visibility and draw more attention to the Jackson Street signal indications.

Figure V-7. US 60 Westbound Approaching 21st Street

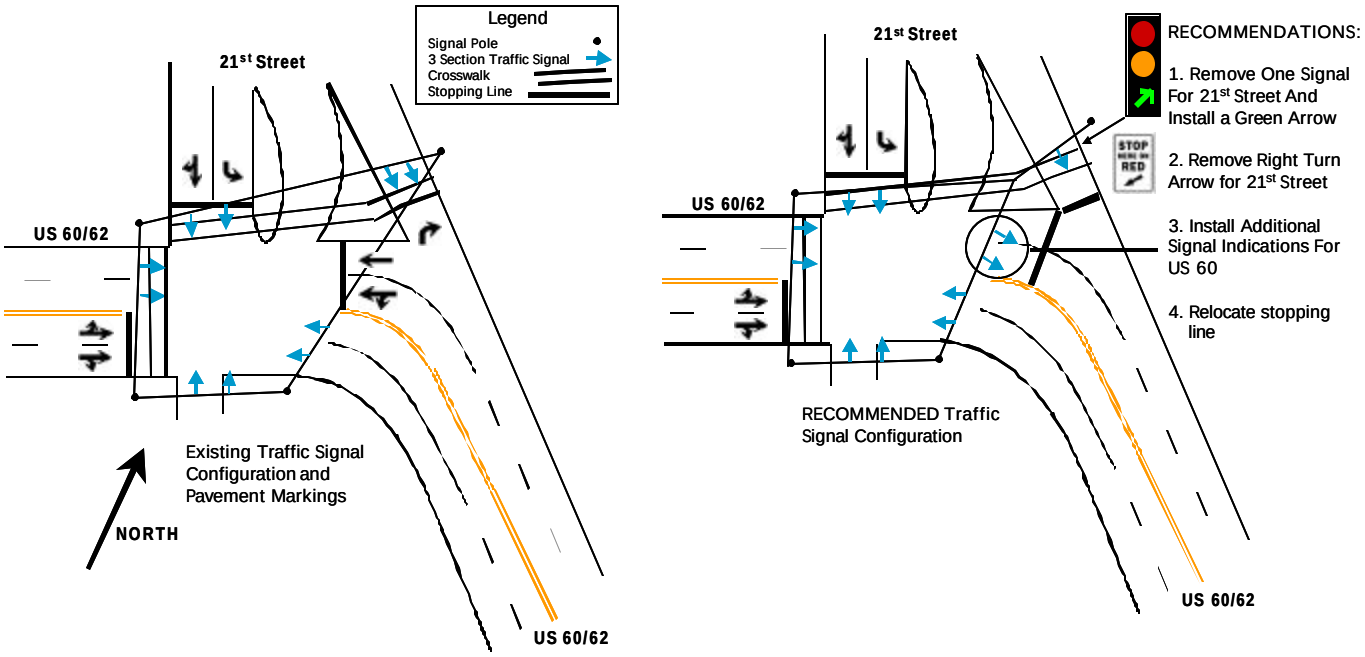


Figure V-8. Existing And Recommended Configuration For The Traffic Signal on US 60 at 21st Street

11. Relocate Blandville Road (US 62) at KY 286 To Create a 90 - Degree Intersection
This is one of McCracken County's many "Y"-intersections. At this intersection, eastbound KY 286 is controlled by a stop sign. Three views of the existing "Y"-intersection are shown in **Figure V-9**. Motorists must look over their right shoulders in order to see oncoming traffic while still yielding to westbound vehicles on US 62. The recommended concept for this project is to realign KY 286 to intersect US 62 at a right angle, as shown in **Figure V-10**.

Figure V-9. Three Views of Blandville Road (US 62) at KY 286

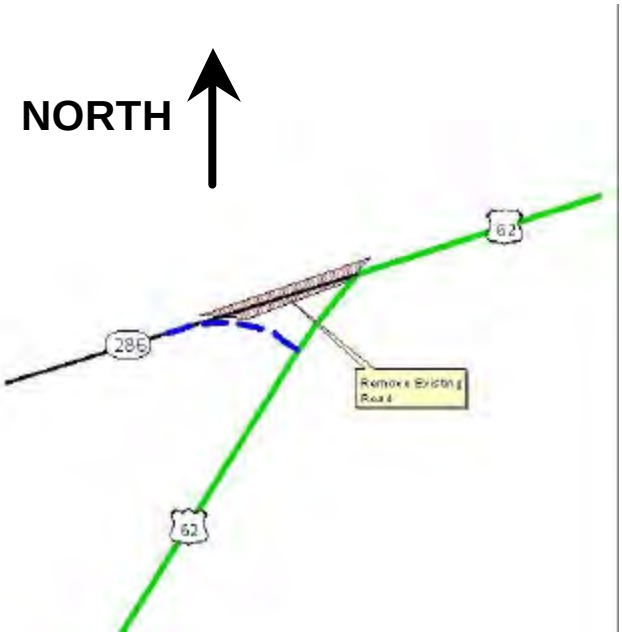


Figure V-10. Recommended Design and Alignment of US 62 at KY 286

12. Reconstruct Lovelaceville Road (KY 1322) at US 62 to Improve Vertical Alignment

This intersection has been the site of many accidents. KY 1322 has an uphill approach to US 62, and intersects at an approximate 45-degree angle. The combination of the grade on KY 1322 and vertical curve on US 62 drastically limits sight distance looking to the west from Lovelaceville Road, as shown in **Figure V-11**.

The recommendation for this intersection is to relocate KY 1322 a short distance to the north, creating a level approach and 90-degree intersection. **Figure V-12** displays this project concept.

Figure V-11. Looking West on US 62 From Lovelaceville Road (KY 1322)

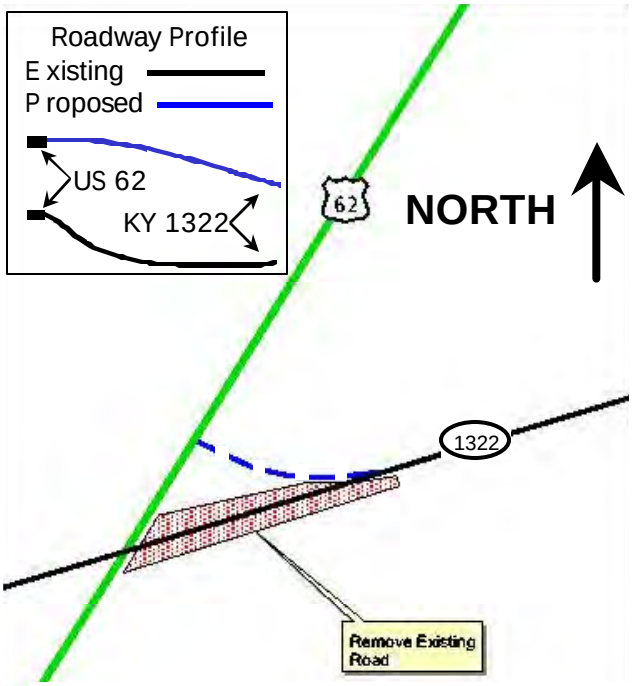


Figure V-12. Recommended Alignment And Profile For KY 1322 at US 62

13. Turning Radii for Husbands Road (KY 2187) at Old Benton Road (KY 284)

The Husbands Road intersection with KY 284 is signalized. It is an old intersection with little to no radius on either corner. A traffic signal pole is located very close the intersection and has been damaged by large turning vehicles. This is shown in **Figure V-13**. The recommendation for this site is to rebuild the traffic signal and revise the existing intersection to provide longer radii on both corners of Husbands Road.

Figure V-13. Small Turning Radius And Damaged Signal Pole Close to Intersection

14. Intersection Improvements For Old Benton Road (KY 284) at Beltline Highway (US 60/62)

This is a signalized intersection with a railroad crossing running diagonally through it. The westbound approach of KY 284 has a short, but sharp curve that limits sight distance to the traffic signal. The recommendation for this site is to straighten the curve, remark both sides of KY 284 for better lane utilization, and reconstruct the traffic signal using protected/permitted left turn treatments. **Figure V-14** shows the curve on the westbound approach.

Figure V-14. Westbound Approach of KY 284 at US 60

15. Relocate And Realign the Intersection of KY 131 and Old Benton Road (KY 284)

This is another of McCracken County's "Y"-intersections. At this location, a yield sign controls KY 284, and there is a high occurrence of crashes. In **Figure V-15**, KY 131 is on the right. There is a shopping center to the right of KY 131. Although there are multiple options available to correct the problem, there are two which appear to be cost-effective.

The first is relocate KY 284 or KY 131 across Freeman Drive, a connecting street approximately 1000 feet from this intersection. Various improvements to Freeman Drive would be required as part of this option. The second involves curving KY 284 into KY 131 opposite the shopping center entrance, creating a 90-degree intersection. **Figure V-16** illustrates the two options which would correct this intersection.

Figure V-15. Intersection of KY 284 (Left) and KY 131 (Right)

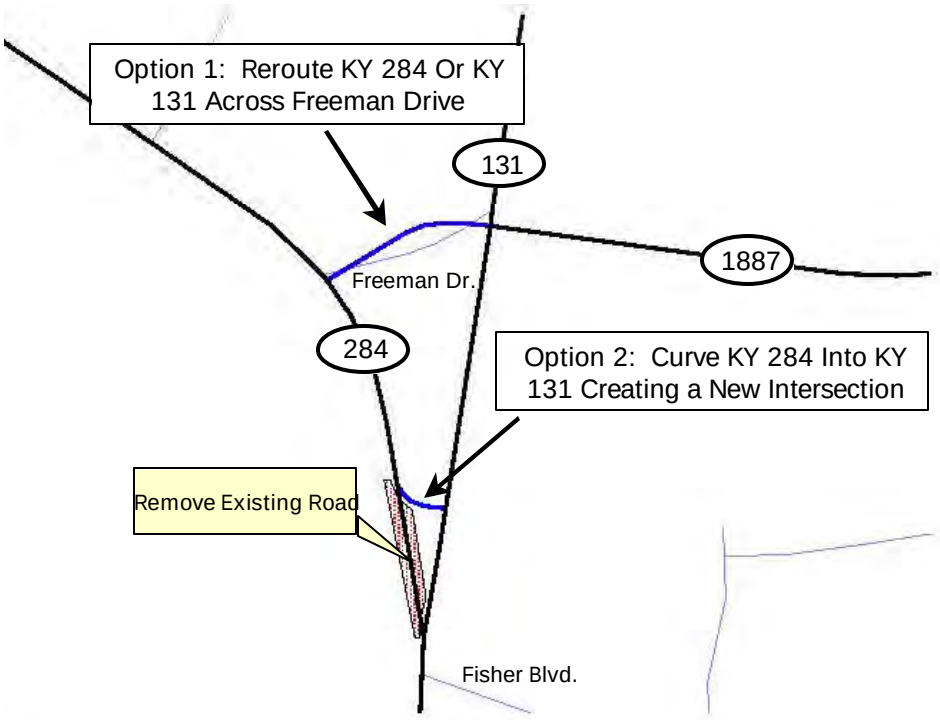


Figure V-16. Relocation of Benton Road (KY 284) at Old Benton Road (KY 131)

16. Kentucky Avenue (US 45X) at 16th Street

Kentucky Avenue is a four-lane roadway without left turn lanes. This intersection currently has a traffic signal that allows Kentucky Avenue two mutually exclusive phases in order to provide a protected left turn movement. There are two recommended approaches to increase the efficiency at this intersection. The first is to simply install left turn lanes. The second is to remark this section of Kentucky Avenue to a three-lane cross section as described for the 28th Street project. The second approach would utilize the existing street width of US 45X and avoid any heavy construction and right-of-way issues. Both alternatives would allow the traffic signal to be reprogrammed for better operation.

17. Turning Radius Improvement From H.C. Mathis Drive (US 45) to Cairo Road (KY 305)

Mathis Drive serves as the primary north/south access route for many of Paducah's shipping and storage facilities on the north side of town. Many of the surrounding streets are too narrow to accommodate heavy truck traffic and have truck restrictions posted. The main destination for most of the departing trucks is I-24 accessed via KY 305. The turning radius from southbound H. C. Mathis Drive to westbound KY 305 is too sharp for semi trailers to navigate without crossing into other travel lanes. This can be seen in **Figure V-17**. It is recommended that the traffic signal pole on the northwest corner of this intersection be relocated as far as possible away from the intersection, and the turning radius maximized.

Figure V-17. Short Turning Radius on the Northwest Corner of US 45 And KY 305

18. Add Turning Lane to Friedman Lane At US 60

The approach of Friedman Lane to US 60 is approximately 30 feet wide near the intersection and quickly tapers back to its normal two-lane cross section. The minor widening of Friedman Lane over a short distance would provide the opportunity to mark two separate lanes for traffic. This project would help exiting traffic from the large residential area fed by Friedman Lane by designating lanes for different directions of traffic and reducing the queue distance.

Other Global Measures

A global recommendation is made that access management principles be applied wherever practical and feasible. This is particularly true in highly commercialized areas with many closely spaced entrances such as US 45 south of I-24. As illustrated in **Figure V-18**, each unsignalized driveway or access point introduces a total of 36 conflict points where crashes can occur. Although the direct correlation is difficult to quantify, past experience has demonstrated that crash frequency increases with the number of access points. The use of shared driveways and interconnection of adjacent parcels are examples of low-cost access management measures that would reduce conflict points. No specific projects or cost estimates are given here, as these should be determined individually.

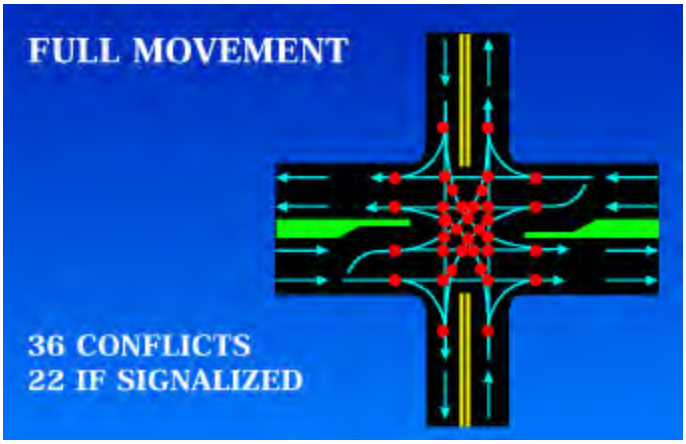
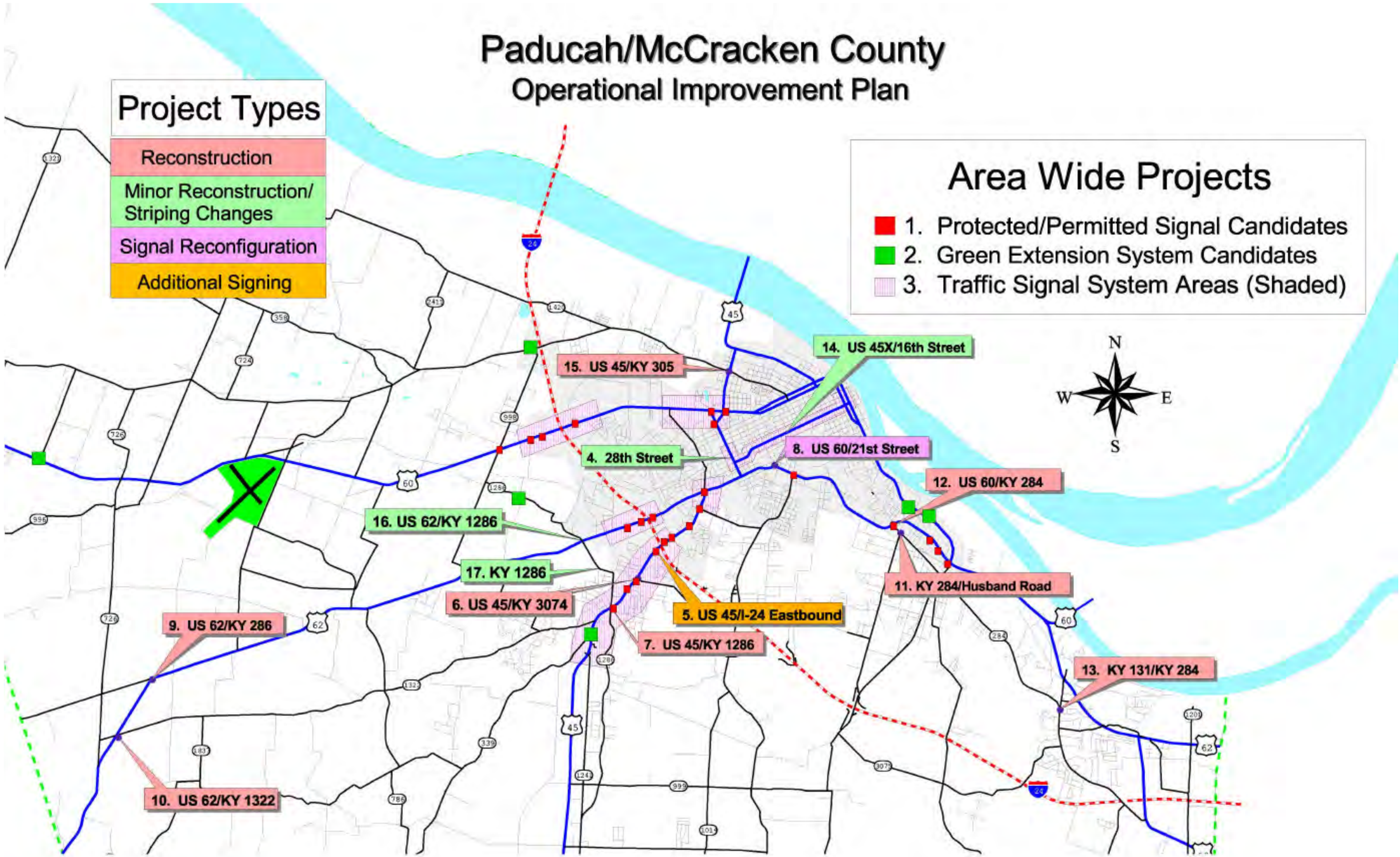


Figure V-18. Potential Conflicts at Intersections And Other Access Points

Prioritization

In Table V-1, projects are categorized as Group 1, Group 2, or Group 3 projects. Group 1 projects are those that can provide immediate benefits. Group 2 projects and should be constructed as funding becomes available. Group 3 projects have been recommended as viable projects, but would have the least impact when project cost and/or overall priorities are considered.

Paducah/McCracken County
Operational Improvement Plan



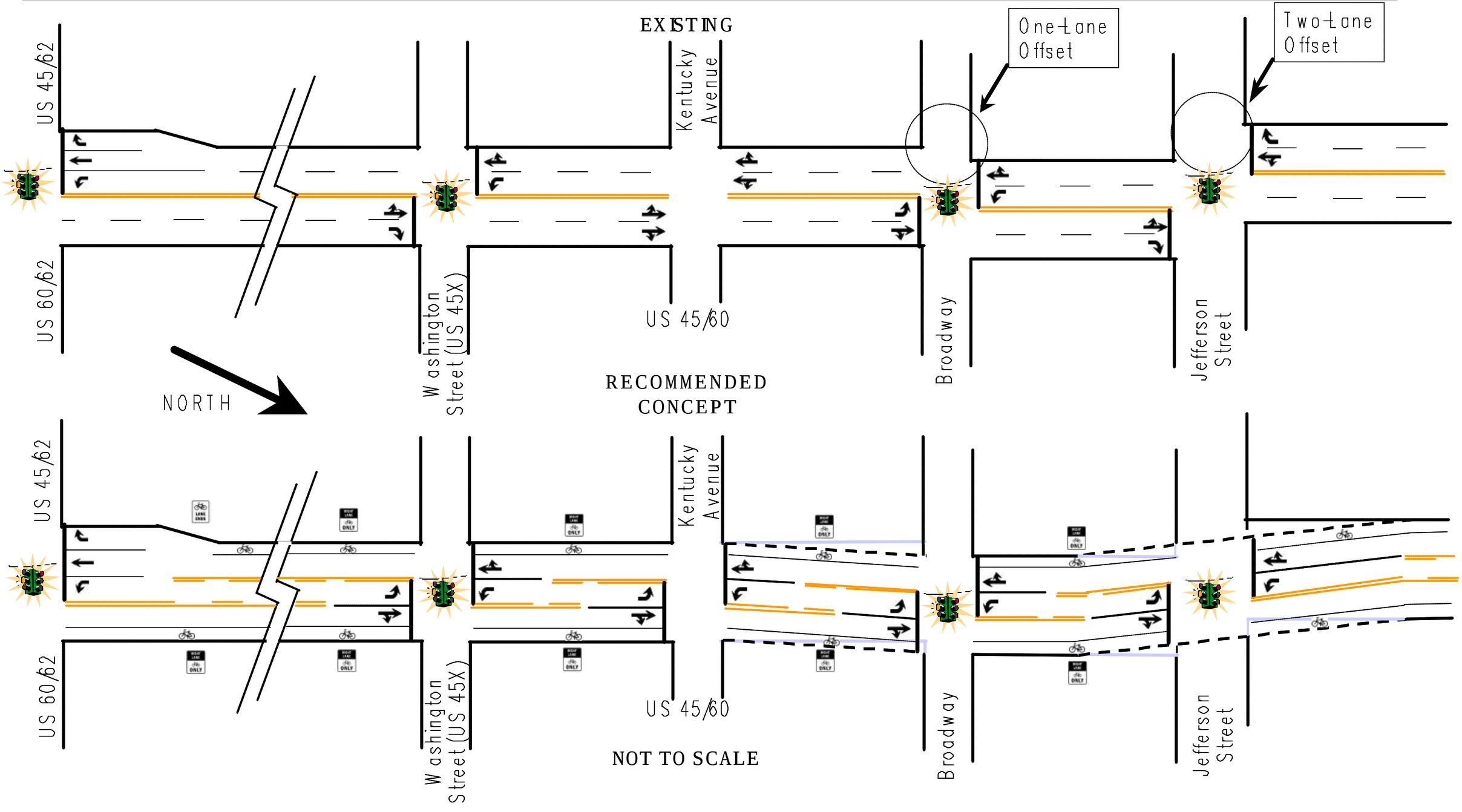


Figure V-3. 28th Street From Jackson To Jefferson Streets

CHAPTER VI – FUTURE TRANSPORTATION NEEDS

The Year 2025 Paducah – McCracken County traffic model was used to develop future traffic forecasts for the Paducah Urban Area. The forecasts were made assuming that projects in the current Six Year Highway Plan would be constructed.

System Deficiencies

System capacity deficiencies based on projected year 2025 traffic volumes are illustrated in **Figure VI-1**. The map shows Year 2025 daily traffic volumes and levels of service for principal roads in the network, along with 1999 traffic volumes for the sake of comparison. Generally, traffic volumes are expected to increase between 50 and 100 percent over the next 20 years, with I-24 forecast to increase by more than 130%.

Specifically, Interstate 24, US 60 West (Hinkleville Road), and US 45 (Mayfield Road) will continue to be the most heavily traveled arterials in McCracken County. Traffic volumes on I-24 are projected to increase from 28,000-38,000 vehicles per day (vpd) today to 67,000 – 87,000 vpd in 2025. Daily traffic volumes will be around 63,000 vpd on US 60 in the area of the Kentucky Oaks Mall. The I-24 and US 60 interchange will be either at capacity (LOS E) or over capacity (LOS F) during peak periods by Year 2025 if no additional improvements are made. Daily traffic volumes on US 45 in the Lone Oak area are expected to increase from about 22,000 vpd to more than 30,000 vpd.

The common section of US 60 and US 62 east from the Beltline Highway to the US60-62 Junction will also experience a similar traffic growth by Year 2025. Traffic volumes are projected to increase from 27,000 vpd in 1999 to 43,000 vpd in 2025.

Other principal facilities projected to be operating at or near capacity by Year 2025 include KY 994 (Old Mayfield Road) between KY 1310 and US 60 (approximately 15,000 vpd), Kentucky Avenue between Ninth and Third Streets (18,000 vpd), and the Third-Fourth Street Couplet between Kentucky Avenue and Martin Luther King Boulevard (26,000 vpd).

By 2025, the main deficiencies of the Paducah transportation network will be revealed in the inability to accommodate the demand for traffic movement in the area of the I-24 & US 60 Interchange on both main lines as well as through the interchange itself. These two corridors experience the heaviest travel demand today and will continue to do so in the future. Traffic frequently backs up into the mainline of I-24 during peak shopping periods, and on week-ends. There is also a problem with weaving movements on US 60 near the Kentucky Oaks Mall as traffic merges from the ramps to gain ingress into the Mall area. These problems will only continue to worsen without increasing the capacity and traffic handling capability in this area. Deficiencies also are projected in the system's ability to accommodate traffic flow on US 45 through Lone Oak, and in the split diamond interchange of US 45 and US 62 with I-24. Interstate 24 is such an integral part of the movement of traffic both through and within the Paducah area that provisions must be continuously made to ensure that this facility and the interchanges are upgraded to meet the traffic demands.

Development of Alternatives

Short-term deficiencies, needs and recommended solutions were developed and discussed previously in Chapter V – Operational Improvement Plan. Those improvements are basically low-cost projects that can be implemented over a short time frame.

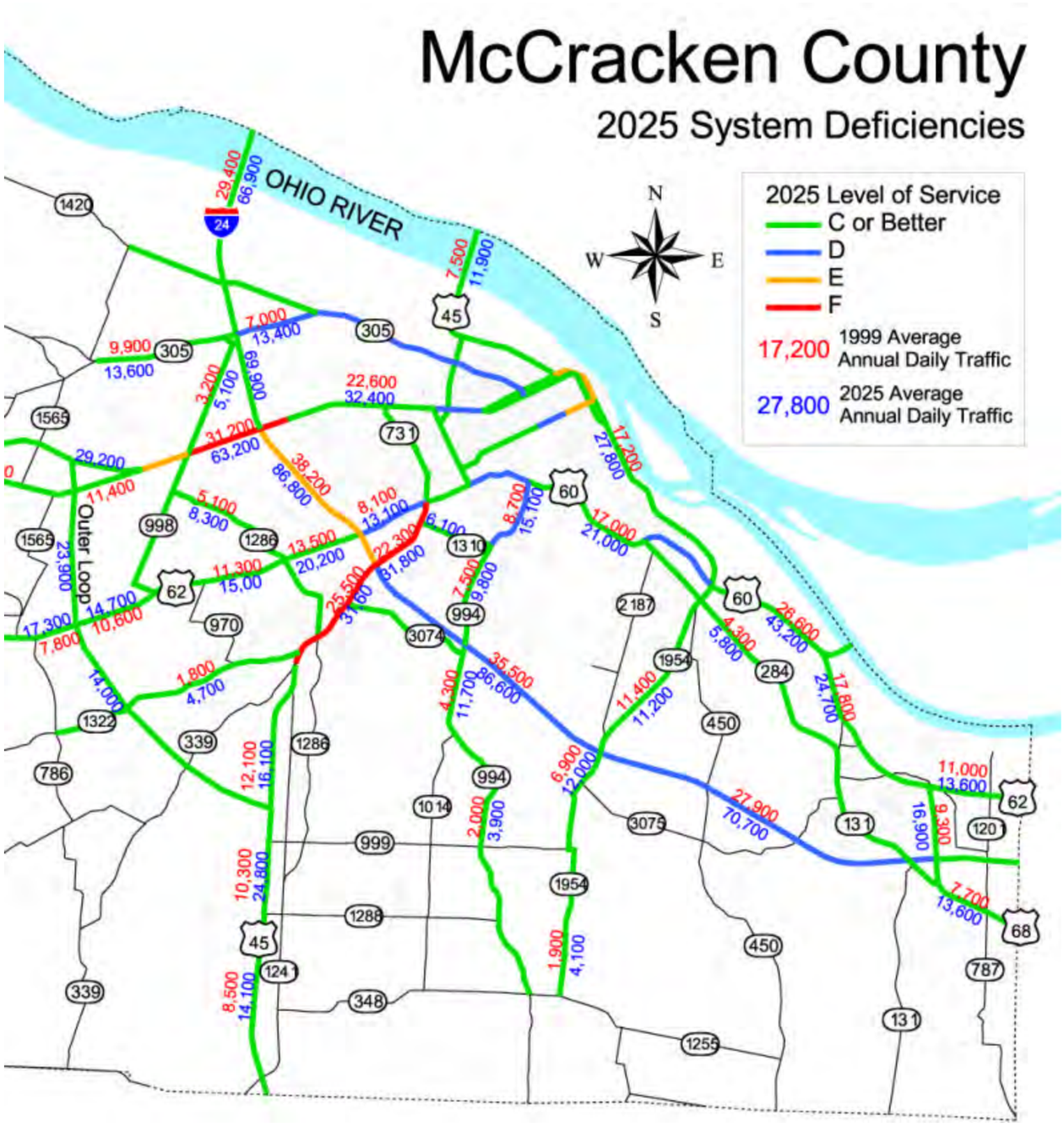


Figure VI- 1. Year 2025 System Deficiencies

In this chapter, the development of long-term, major roadway improvements is discussed. Alternative improvement projects in the form of major capacity expansion (lane addition) projects or construction of new roads were evaluated. Because automobile travel so heavily dominates transportation in Paducah, no other alternatives were considered feasible as major transportation improvements.

Six Year Highway Plan

It was the unanimous opinion of the Transportation Work Group that those projects currently in the Kentucky Transportation Cabinet's "Six Year Highway Plan" be continued as Priority 1 projects. These projects included the following:

US 60 (Hinkleville Road)

Widen to four lanes from the Ballard County Line to KY 1154 (Martin Marietta Road). This project is 2.0 miles long and is estimated to cost $19.1 million.

US 60 (Smithland Road)

Construct a new bridge and approaches connecting Paducah and Smithland over the Tennessee River at the Livingston County line. The project cost estimate is $35.5 million.

US 60 (Smithland Road)

This project involves the relocation and minor widening of US 60 from the Clarks River to the US 62 Junction, a distance of 1.0 mile. The cost estimate is $4.8 million.

Outer Loop Central Section

The proposed Outer Loop project would provide improved access to Barkley Regional Airport, the United States Enrichment Corporation (USEC) Plant, Kentucky Oaks Mall, the Information Age Park, as well as future population and employment growth in the area of McCracken County which is expected to grow the most by year 2025. This route would serve to divert a significant amount of traffic from the south and west which would otherwise be forced to use I-24 to get to those major traffic generators along US 45 (through Lone Oak), US 62 (past the Community College), and US 60 (through the Kentucky Oaks Mall and adjacent development) south of I-24. The first section of the Outer Loop from US 45 to US 60 is in the Kentucky Transportation Cabinet's current "Six Year Highway Plan," and is in the design phase. Traffic volumes for 2025 are forecast to be 18,900 – 25,900 vpd. This section is approximately six miles long and is estimated to cost $70 million to construct.

KY 998 (Olivet Church Road)

Olivet Church Road provides an alternative route for industrial and commercial traffic, as well as shoppers to get into the Kentucky Oaks Mall area via the KY 305 interchange with I-24. There is a severe curve and a dilapidated bridge over the P&L Railroad just south of KY 305. This project would replace the existing bridge and straighten the road, and is estimated to cost $6.9 million.

US 62 (Kentucky Dam Road)

This project involves the relocation of US 62 from the US 60 Junction to KY 1887, a distance of 1.5 miles, and is estimated to cost $10.5 million.

KY 994 – Interchange with I-24

This project would provide a new interchange between KY 1954 and US 45 in the area of southern McCracken County that is expected to grow significantly by the year 2025. This is especially true if the Regional Industrial Park proposed in northern Graves County develops during that time period. This improvement is estimated to cost $14.5 million.

Other Major Alternative Projects

Based on the year 2025 network deficiency analysis, a number of projects were identified which would increase system capacity and provide safer operating facilities. Major alternative improvement projects that were considered and evaluated are discussed below.

Interstate 24

Interstate 24, which is part of the National Highway System, is also an integral part of Kentucky's highway network. The study has demonstrated that additional through lanes are needed from US 60 on the west to US 68 on the east. Presently this is a four-lane interstate that would require expansion to six lanes. Even at six lanes the roadway will be at or near capacity (67,000 to 87,000 vpd); however, a six-lane fully controlled access facility should accommodate these volumes.

The estimated construction cost for this improvement is $61.8 million in present dollars - $13.5 million for the section from US 60 to US 45, $21.5 million for the section from US 45 to KY 1954, and $26.8 million for the section from KY 1954 to US 68. It must be pointed out that these estimated costs do not include the interchange of I-24 with US 60, which would be an additional $19.8 million. The existing interchange is a simple diamond with traffic signals at the US 60 terminus of each ramp. During peak traffic periods, which occur especially in conjunction with times of heavy shopping and week ends, traffic backs up extensively on the ramps often onto the main lines. These conditions can be alleviated with the reconstruction of I-24 and US 60 to accommodate additional lanes by converting the interchange to a Single Point Urban Interchange with multiple turn lanes on the ramps and/or extending the length of the ramps for both east bound and west bound I-24 exiting traffic.

The Interstate 24 widening project from US 60 to US 68 was listed in the existing *Statewide Transportation Plan (FY 1999-2018)* as a future need.

US 60 (Park Avenue/Hinkleville Road)

On the west side of Paducah, US 60 (Park Avenue/Hinkleville Road) is the principal arterial in Paducah with the heaviest traffic demand, both present and future. Currently, this four-lane road carries about 31,000 vpd, and Year 2025 projections are for up to 63,000 vpd. Without improvements or some relief routes, it will be over capacity (LOS F) by 2025. Widening US 60 to six lanes from Friedman Lane to KY 3520 (Old US 60), a distance of 2.3 miles, would enable operation at LOS D. The estimated cost for this capacity expansion is $12.5 million in current dollars.

US 45 / US 62 Interchange

The existing interchange of US 45 / US 62 with I-24 is a split diamond interchange with the east bound service road also providing a direct connection into and out of the Whitehaven Rest Area. The ramps are signalized at both US 45 and US 62, and the ramp termini are also high crash locations, particularly exiting the Whitehaven Rest Area at US 45. The original design for the interchange configuration called for slip ramps between the two routes, which would remove a significant amount of vehicular traffic from the signalized intersections. It is proposed that the original concept of slip ramps be implemented in order to improve traffic flow and reduce accidents in this interchange area. The cost in current dollars is estimated to be $1.8 million.

US 45

Future capacity needs in the US 45 corridor through Lone Oak present some unique challenges. Rapid growth in this area of McCracken County is expected to continue, and existing US 45 is already lined with highway oriented businesses which are attractors to both local and through traffic. Several alternatives were reviewed to determine if sufficient traffic could be diverted or routed onto other routes in the area. It was found that the existing highway provided such a direct route for both traffic desiring to go on into downtown Paducah or onto I-24 that alternative routes would not solve the dilemma. As a result it is proposed that US 45 be widened from KY 1322 (Lovelaceville Road) to the US 62 intersection at Hannan Plaza, a distance of 2.9 miles. The cost is estimated to be $36.7 million.

US 62 (Blandville Road)

With the construction of the Central Section of the Outer Loop, there will be a section of US 62 (Blandville Road) between KY 998 and the Outer Loop which will be only two lanes wide, after narrowing down from five lanes. It would be appropriate to extend the five lane section of US 62 beyond the Outer Loop to accommodate the increase in traffic and allow for turning and merging traffic through the interchange. This section is estimated to cost $10.2 million, and it is about 2.0 miles long.

Outer Loop Extension (West)

Due to the high traffic demands on both I-24 and US 60, the Outer Loop will serve an area of McCracken County that continues to flourish, and at the same time provide relief for I-24. The Kentucky Oaks Mall area will continue to develop commercially, and to complicate things even more the new industrial park located adjacent to KY 305 and Olivet Church Road will attract additional large volumes of traffic including more trucks into the area. The Outer Loop Extension to the west would connect US 60 to KY 305 at the I-24 Interchange. Traffic volumes are forecast to be about 14,000 vpd. This section is about 1.5 miles long, and it is estimated cost $34.0 million to build.

Outer Loop / KY 305 Extension

The western most leg of the Outer Loop would connect the Mall and Industrial Park to US 45 north at H.C. Mathis Drive. Given that there will continue to be a high travel demand in the US 60 (Park Avenue) Corridor, and that there will be continued development in and near the Kentucky Oaks Mall area, an alternative route which would serve both through and local traffic is desirable. The extension of the Outer Loop from I-24 at KY 305 to US 45 would primarily involve widening existing streets, and would serve the long term traffic need identified in the corridor. This section is approximately 3.2 miles long, and is estimated to cost $30.0 million to complete.

Outer Loop Extension (East)

The proposed extension of the Outer Loop from US 45 to KY 1954 (John Puryear Drive) would close a loop around Paducah and would provide relief to many key routes throughout the area by diverting traffic which does not need to use I-24, US 60, US 45, or any of the other routes radiating from downtown. The east extension would also open up some areas that are not currently well served by existing routes, and would provide a key access route from the east to the proposed Regional Industrial Park adjacent to US 45 in northern Graves County. This section is approximately 5.0 miles long, and is estimated to cost $41.0 million to complete.

Pecan Drive / Buckner Lane / James Sanders Drive

This project involves the creation of a local access road from US 62 south of I-24 directly into the Kentucky Oaks Mall area. This would provide not only improved access to the mall, but would provide relief for a badly overloaded I-24 / US 60 Interchange as well as both mainlines. The alignment would involve widening and straightening both Buckner Lane and Pecan Drive, while extending James Sanders Drive from its existing terminus south of US 60 to Buckner Lane, a distance of approximately 1.7 miles. The total route would be upgraded to a minimum 24-foot section with shoulders, and is estimated to cost $4.6 million.

KY 998 (Olivet Church Road)

The section of Olivet Church Road from US 60 to KY 305 provides an alternative route for traffic to bypass the Kentucky Oaks Mall area to get to or from the KY 305 interchange with I-24. The existing section is a narrow two lane roadway which should be widened to four lanes from US 60 to tie in with the proposed project to upgrade the bridge over the P&L Railroad just south of KY 305. This project is about 1.5 miles long, and is estimated to cost $6.8 million.

KY 1286 (Friendship Road)

This proposed project would involve upgrading the existing route from US 62 to New Holt Road by straightening some of the more severe curves and widening the roadway to three lanes (one lane in each direction with a continuous center turn lane). This improvement is about 3.4 miles long, and is estimated to cost $9.9 million.

US 62 (Alben Barkley Drive)

The need to widen this roadway was identified more than twenty-five years ago, and there have been several attempts to carry the project forward without success. With the large population and employment growth expected to occur in the southwest part of McCracken County, it is expected that widening US 62 will become a necessity by the year 2025. The original proposal to widen the roadway to five lanes including a center turn lane was opposed by many of the residents along the route. As a compromise, to reduce the impact of the widening, the recommended cross section would involve widening to a three lane section with sidewalks. The provision of a center lane for left turns would facilitate traffic flow and safety, while the addition of sidewalks would enhance the overall function of the road for area residents. The project would be 1.0 mile long, and is estimated to cost $15 million.

Other Considerations

Consideration also was given to widening Old Mayfield Road (KY 994) from the proposed interchange at I-24 to 16th Street to provide an alternative routing into downtown Paducah. This project was deemed as infeasible due to a combination of anticipated high costs and relocations of both homes and businesses, and did not appear to attract a significant additional amount of traffic.

CHAPTER VII – RECOMMENDED IMPROVEMENTS

The value of any transportation plan lies in its ability to provide transportation improvements to serve the future movement of people and goods while striking a balance with the needs of residents, visitors, and those travelers who must pass through the region. The recommendations are based on an analysis of projected land use, traffic demands, programmed improvements, and cost analyses. The result must be a balance of transportation projects which accommodates future travel demands in a safe, convenient, and responsive manner, and is adaptable to different patterns of development.

The recommended transportation improvements contained in this plan are the result of a process which identified future travel demands and subsequently analyzed the ability of the existing transportation system to meet those demands. Where the existing system was found to be deficient, improvements to the network, either as new facilities or increased capacity, were examined to determine if adequate service could be developed. Due to the extensive existing plus committed transportation network in Paducah and McCracken County and the distribution of forecasted population and employment, the ability to provide alternative transportation links was somewhat limited.

After testing numerous alternatives and discussing them with the Citizens Transportation Work Group, it was clearly the consensus of the group that refinements to the existing system should have the highest priority, especially those routes which would provide relief to the existing transportation system. In addition, the completion of the Paducah Outer Loop should be included in the long-range plan, but at a lower priority.

Year 2025 Transportation Plan

The relative value of any plan is a function of the ability to implement the recommendations contained in the plan. As there are existing mechanisms in Kentucky to program projects and establish priorities, these processes have to be utilized to the maximum in order to develop a viable plan.

The Year 2025 Paducah – McCracken County Transportation Plan has four elements. Those are:

1. Projects in the Kentucky Six Year Highway Plan;

2. Projects in the 20-year Statewide Transportation Plan;

3. Recommended Improvements developed as a result of the Paducah – McCracken County Transportation Study; and

4. The Operational Improvement Plan.

Six Year Highway Plan (Committed)

Those projects contained in the Transportation Cabinet's Six Year Highway Plan are treated as committed due to the fact that the Kentucky General Assembly adopts the program by legislative action. There are six projects in the current (FY 2001 – 2006) Six Year Plan:

1. US 60 (Hinkleville Road) – Widen to four lanes from Bethel Church Road to KY 1154;

2. US 60 (Smithland Road) – Bridge and approaches over Tennessee River at Livingston County line;

3. US 60 – Relocation and minor widening from Clarks River to US 62 Junction;

4. Outer Loop – New Connector from US 45 to US 60 west of I-24;

5. US 62 (Kentucky Dam Road) – Relocation from US 60 Junction to KY 1887 (Park Boulevard);

6. KY 998 (Olivet Church Road) – Bridge and approaches at P&L Railroad 0.30 mile south of KY 305; and

7. I-24 / KY 994 (Old Mayfield Road) Interchange.

Statewide Transportation Plan

The Kentucky Transportation Cabinet develops the twenty-year Statewide Transportation Plan, which is updated every four years. This document provides a backlog of transportation needs from which to draw projects into the Six Year Plan. The current draft (FY 1999 – 2018) contains two long-range projects not contained in the Six Year Plan:

- Interstate 24 – Upgrade existing facility to accommodate future I-66 concurrent routing.
- Interstate 66 – New interstate facility from Missouri State Line to I-24 at Paducah.

Recommended Long Range Transportation Improvements

There were a number of projects vital to the future growth of Paducah and McCracken County identified as needed in addition to those projects already contained in either the Six Year Plan or the Statewide Transportation Plan. These projects were adopted by the Citizens Advisory Committee at its meeting on November 29, 2001.

A three-tiered priority system was developed. Priority I projects are those considered to be most urgently needed to sustain the functionality of the Paducah transportation system. They will provide much needed additional capacity to alleviate current traffic congestion. Priority II projects enhance the mobility of the system by providing alternate travel routes to existing corridors. Their urgency is less than Priority I projects, but they are vitally important to supporting Paducah and McCracken County's growth and viability. Priority III projects will meet future demands for additional capacity resulting from growth in McCracken County.

The Recommended Long-Range Transportation Improvements for the Paducah – McCracken County Area are presented in **Figure VII-1**. They are:

Priority I Projects

- US 60 (Hinkleville Road) – Widen to four lanes from Ballard County Line to KY 1154;
- US 60 (Smithland Road) – Bridge and approaches over Tennessee River at Livingston County Line;
- US 60 – Relocation and minor widening from Clarks River to US 62 Junction;
- Outer Loop – New connector from US 45 to US 60 west of I-24;

- Olivet Church Road (KY 998) – Bridge and approaches at P&L Railroad 0.3 mile south of KY 305;
- Olivet Church Road (KY 998) – Widen existing road to four lanes from US 60 to the P&L Railroad;
- I-24 / KY 994 (Old Mayfield Road) Interchange;
- Pecan Drive/ Buckner Lane/ James Sanders Drive – upgrade Pecan Drive and Buckner Lane to a three lane cross section from US 62 to existing James Sanders Drive across from the Kentucky Oaks Mall; and
- US 62 (Kentucky Dam Road) – Relocation from the US 60 Junction to KY 1887 (Park Boulevard).

Priority II Projects

- Interstate 24 – Widen to six lanes from US 60 on the east to US 68 on the west;
- US 60 (Hinkleville Road) – widen to six lanes with turn lanes from Friedman Lane to KY 3520 (Old US 60);
- I-24 and US 60 Interchange (Hinkleville Road) – Convert the existing interchange to an urban interchange to accommodate the widening of both I-24 and US 60;
- US 45 and US 62 Interchange with I-24 (Split Diamond) – Convert the existing interchange by adding slip ramps between US 45 and US 62;
- US 62 (Blandville Road) – Widen to five lanes from 1900 feet west of the proposed Outer Loop to KY 998;
- Outer Loop Extension (East) – Extend Section 1 east from US 45 to KY 1954 (John Puryear Drive) at I-24; and
- Outer Loop Extension (West) – Extend Section 1 west from US 60 to KY 305 at I-24.

Priority III Projects

- US 45 (Lone Oak Road) – Widen to six lanes from KY 1322 (Lovelaceville Road) to US 62 at Hannan Plaza;
- Outer Loop Extension – Extend the western section from KY 305 at I-24 to US 45 (H.C. Mathis Drive);
- KY 1286 (Friendship Road) – Upgrade the existing route from US 45 to New Holt Road by straightening curves and widening to three lanes; and
- US 62 (Alben Barkley Drive) – Widen to three lanes with sidewalks from US 45 at Hannan Plaza to I-24.

Summary of Recommendations

The Recommended Long-Range Transportation Improvements, including priorities and estimated cost in present dollars, are summarized in **Table VII-1.** The recommendations and relevant data for each are

summarized and referenced by location in **Figure VII-1**. Each project includes a text box containing information about the project. For existing roads, the first line depicts the No-Build condition with projected Year 2025 average daily traffic volumes and level of service. Subsequent lines describe the type of improvement recommended for that project, the number of lanes, and the resulting level of service.

Operational Improvement Plan

Traffic operational improvements can provide immediate and relatively inexpensive benefits to traffic flow and can reduce potential conflicts, which lead to fewer accidents and reductions in accident severity. A detailed discussion of traffic operational improvements is contained in Chapter V.

Table VII-1 Recommended Long-Range Transportation Improvement Projects

Priority	Route	Length	Termini/Milepoints	Description	Estimated Cost				
					Design	Right-of-Way	Utilities	Construction	Total
I	US 60 (Hinkleville Rd.)	1.968	Ballard Co. Line to KY 1154 0.000 to 1.968	Widen to four lanes Scope: Major Widening	----	$6,000,000	$3,100,000	$10,000,000	$19,100,000
I	US 60 (Smithland Rd.)	0.600	Tennessee River at Livingston Co. Line	Bridge replacement Scope: Bridge Replacement	----	$6,000,000	$4,500,000	$25,000,000	$35,500,000
I	US 60	1.000	Clarks River to US 62 Junction 19.700 to 20.028	Relocation and minor widening Scope: Relocation	$300,000	$1,000,000	$1,000,000	$2,500,000	$4,800,000
I	Outer Loop	6.000	US 45 to US 60 west of I-24	New connector road Scope: New Route	----	$3,000,000	$2,500,000	$64,500,000	$70,000,000
I	Olivet Church Rd. (KY 998)	0.100	P&L Railroad 0.3 miles south of KY 305 3.626 to 3.726	Bridge replacement Scope: Bridge Replacement	----	$1,100,000	$1,500,000	$4,300,000	$6,900,000
I	Olivet Church Rd. (KY 998)	1.519	US 60 to P&L Railroad 2.207 to 3.726	Widen to four lanes Scope: Major Widening	$500,000	$1,200,000	$1,100,000	$4,000,000	$6,800,000
I	Pecan Dr./ Buckner Ln./ James Sanders Dr.	1.700	US 62 to existing James Sanders Dr.	Widen to three lane section Scope: Minor Widening	$300,000	$850,000	$750,000	$2,700,000	$4,600,000
I	US 62 (Kentucky Dam Road)	1.500	US 60 Junction to KY 1887 (Park Boulevard)	Relocation Scope: Relocation	$500,000	$3,000,000	$2,000,000	$5,000,000	$10,500,000
I	I-24 & KY 994 Interchange	0.100	N/A	Construct new interchange at KY-994 (Old Mayfield Road) Scope: New Interchange	----	$4,000,000	$2,000,000	$8,500,000	$14,500,000
								Priority I Subtotal:	**$172,700,000**
II	Interstate 24	1.972	US 60 to US 45	Widen to six lanes / / Scope: Major Widening	$400,000	----	$100,000	$13,000,000	$13,500,000
		4.730	US 45 to KY 1954	Widen to six lanes / / Scope: Major Widening	$650,000	----	$175,000	$20,700,000	$21,525,000
		5.153	KY 1954 to US 68	Widen to six lanes / / Scope: Major Widening	$800,000	----	$200,000	$25,800,000	$26,800,000
II	US 60 (Hinkleville Rd.)	10.354	Friedman Ln. to KY 3520 (Old US 60) 7.770 to 18.124	Widen to six lanes Scope: Major Widening	$400,000	$1,800,000	$3,500,000	$6,800,000	$12,500,000
II	I-24 & US 60 Interchange	N/A	N/A	Convert to urban interchange Scope: Reconstruction	$800,000	$1,000,000	$1,000,000	$17,000,000	$19,800,000
II	US 45 & US 62 Interchange with I-24	N/A	N/A	Add slip ramps Scope: Minor Widening	$200,000	----	$100,000	$1,500,000	$1,800,000
II	Outer Loop Extension (East)	5.000	US 45 to KY 1954 (John Puryear Dr.)	Extend Outer Loop Scope: New Route	$2,000,000	$7,000,000	$2,000,000	$30,000,000	$41,000,000
II	Outer Loop Extension (West)	1.500	US 60 to KY 305 at I-24	Extend Outer Loop Scope: New Route	$1,000,000	$6,000,000	$4,000,000	$23,000,000	$34,000,000
II	US 62 (Blandville Rd.)	1.978	East of Outer Loop to KY 998 7.002 to 8.980	Widen to five lanes Scope: Major Widening	$500,000	$1,000,000	$1,000,000	$7,700,000	$10,200,000
								Priority II Subtotal:	**$181,125,000**
III	US 45 (Lone Oak Rd.)	2.865	KY 1322 (Lovelaceville Rd.) to US 62 6.338 to 9.203	Widen to six lanes Scope: Major Widening	$1,000,000	$12,200,000	$7,000,000	$16,500,000	$36,700,000
III	Outer Loop Extension	3.200	KY 305 at I-24 to US 45 (H.C. Mathis Dr.)	Widen to four lanes Scope: Major Widening	$1,000,000	$9,000,000	$8,000,000	$12,000,000	$30,000,000
III	KY 1286 (Friendship Rd.)	3.403	US 45 to New Holt Rd. 3.623 to 7.026	Upgrade by straightening curves and widen to three lanes Scope: Minor Widening	$500,000	$2,500,000	$1,800,000	$5,100,000	$9,900,000
III	US 62 (Alben Barkley Dr.)	1.044	US 45 at Hannan Plaza to I-24 11.837 to 12.881	Widen to three lanes with sidewalks Scope: Minor Widening	----	$5,000,000	$5,000,000	$5,000,000	$15,000,000
								Priority III Subtotal:	**$91,600,000**
								GRAND TOTAL:	**$445,425,000**

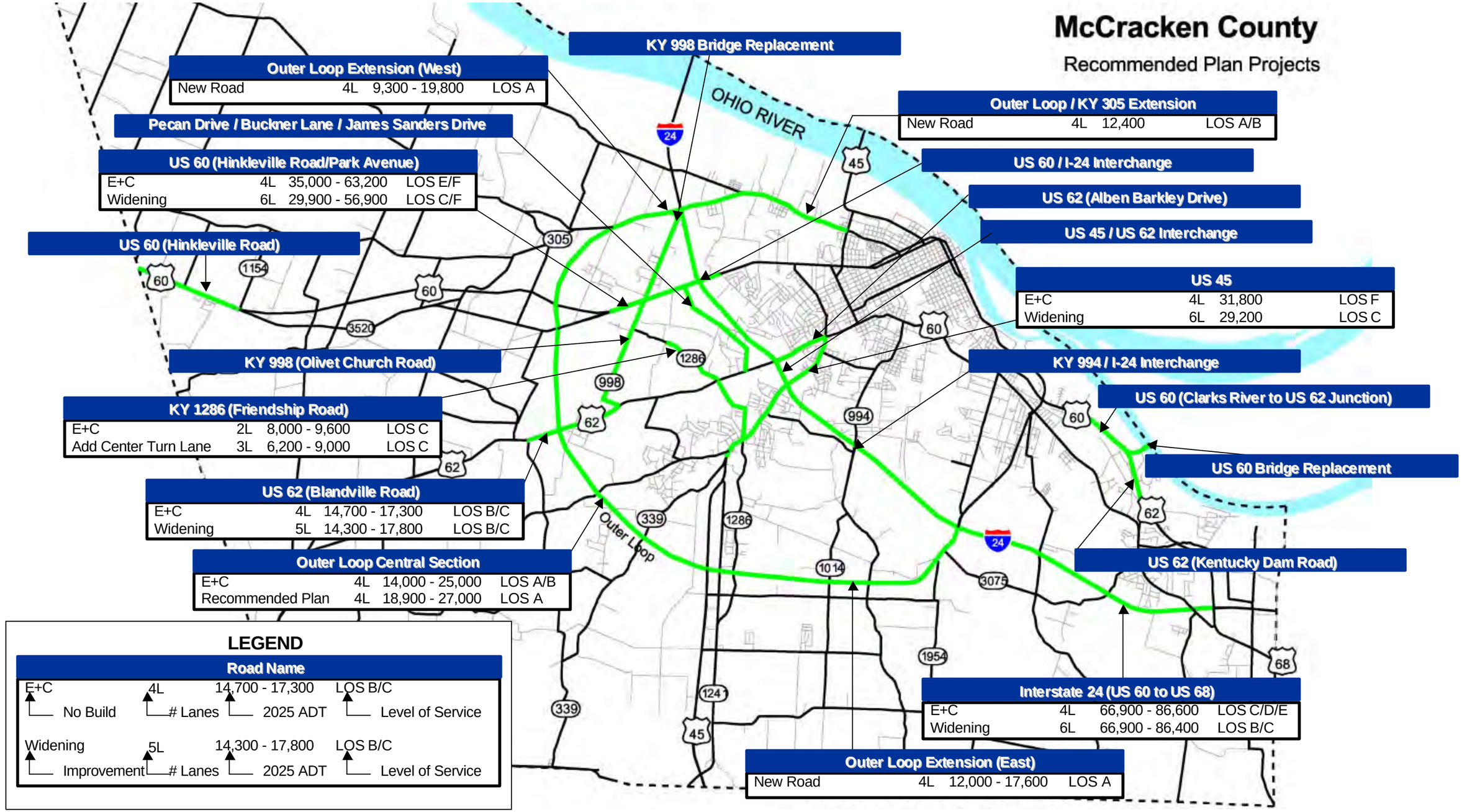


Figure VII - 1. Long Range Transportation Plan Alternatives

Other Transportation Modes

While this plan is basically a highway plan, other transportation modes should not be ignored as improvements are implemented. For example, while the Twenty Eighth Street recommendation is to provide a safer facility, it also is recommended to accommodate a bikeway which would provide safer biker access from US 45 to US 60 as well as direct service to both Noble Park and Carson Park. Likewise, while the US 62 (Alben Barkley Drive) project recommendation would improve vehicular flow and safety, it would also provide much needed sidewalks for pedestrians. In fact, it is encouraged that opportunities to enhance pedestrian, bicycle public transportation and other travel modes should be aggressively pursued throughout the Paducah – McCracken County area.

Plan Implementation

The success of the *Year 2025 Paducah – McCracken County Transportation Plan* will lie in the ability to implement its projects – short-term operational projects and major long-term improvement projects. The short-term projects can be implemented quickly, depending on funding availability, and should be pursued aggressively. The long-term, major projects must go through the statewide transportation planning process.

Ideally, Priority I projects should be included in the Kentucky Six Year Highway Plan. This would demonstrate a commitment to the project with respect to timing (schedule) and funding. Priority II and possibly Priority III projects should be considered for inclusion in the next version of the Statewide Transportation Plan. While this does not guarantee funding nor commit to a schedule, it does demonstrate a formal acknowledgement of the need for the project.

Obviously the challenge comes in getting projects from the list of recommended long-range improvements into the Six Year Plan and the Statewide Transportation Plan. Paducah area projects must compete with other projects from all over the state. Thus, the community must be unified and proactive in the political and legislative process that implements Kentucky's statewide transportation planning process.

Summary

The projects contained in this proposed program provide the core highway system needed in the Paducah – McCracken County Area to accommodate the anticipated population, employment, and traffic growth through the year 2025. The total cost of all the committed and recommended improvements is more than $445 million. This total includes approximately $62 million for upgrading I-24 and I-66 through the urban area. While the Interstate improvements are much needed projects, they serve primarily traffic traveling through the area and should not be counted against Paducah's program.

Obviously, actual implementation of any part of the program is dependent on the availability of funds from both state and local governments, as well as private developers. In addition the timing of projects will depend on actual growth patterns and the resultant traffic demands on various segments of the system.

It will be necessary to regularly evaluate both the traffic patterns and traffic volumes in order to make adjustments in project schedules, and ensure that Paducah's traffic system provides the level of service

desired of this regional employment and medical center. As part of a continuous process, it is recommended that this transportation plan be re-evaluated in the future on a regular, continuing basis.