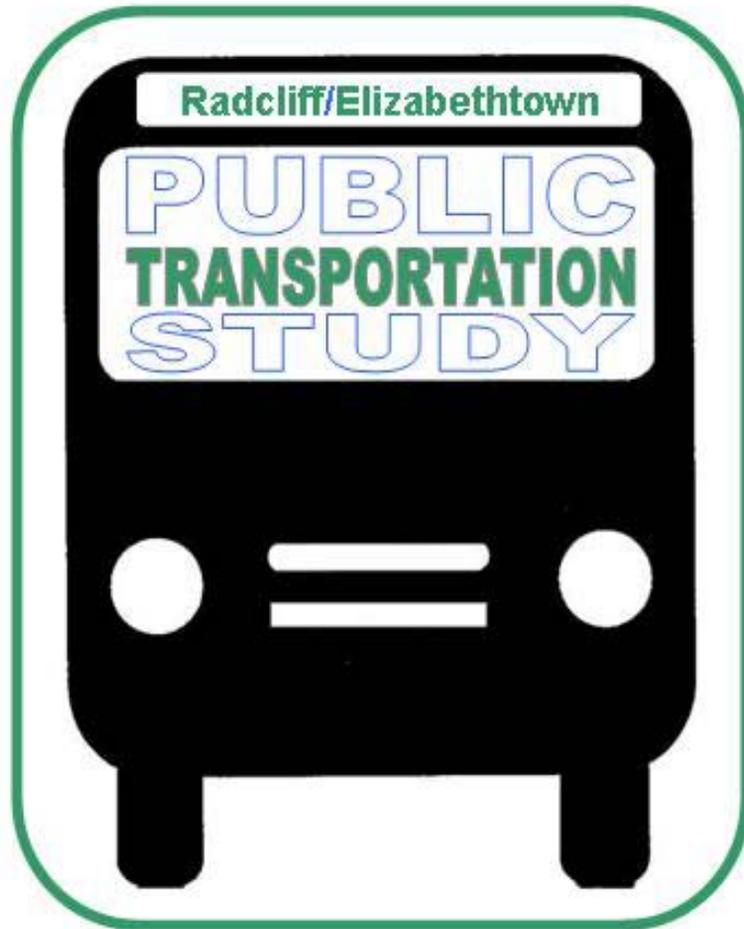


# Final Report



*September 2005*

Completed for:

**RADCLIFF/  
ELIZABETHTOWN  
MPO**

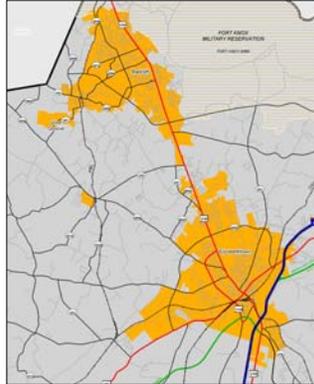
Completed by:



## INTRODUCTION

As a result of the 2000 Census, the Radcliff-Elizabethtown area was designated as an urbanized area, requiring the formation of a Metropolitan Planning Organization (MPO) for these communities.

The Lincoln Trail Area Development District (LTADD) was designated as the staff agency for the Radcliff-Elizabethtown



MPO in 2003 by the Commonwealth of Kentucky, with approval by the United States Department of Transportation, to oversee the use of Federal funds for transportation projects in the region.

Designation of the Radcliff-Elizabethtown area as an urbanized area resulted in the loss of demand-response transit service previously provided there by the Transit Authority of Central Kentucky (TACK).

With the loss of rural transportation service in the newly designated urbanized area, Wilbur Smith Associates (WSA) was contracted by LTADD to undertake the Radcliff-Elizabethtown MPO Public Transportation Study to evaluate public transportation needs in the growing Radcliff-Elizabethtown-Vine Grove area.

To determine the feasibility and need for transit in the region, the following questions were to be answered:

- What transportation services are currently available in the MPO area?
- Is there a need for public transportation?
- What types of public transportation services should be offered?
- How would public transportation be operated and administered?

- What are the cost requirements of a transit system?
- What transit facilities are needed?

## EXISTING CONDITIONS

A demographic and socioeconomic analysis was conducted to explore the need for public transportation. Both objective and subjective techniques were used in this study to estimate the level of demand for the addition of such services. This information, which is presented in **Chapter 2** of the study document, was used in recommending appropriate services to be provided.

## COMMUNITY INVOLVEMENT

Involvement from the community played a vital role in helping to determine the transportation needs in this urbanized area. A variety of mechanisms were used to gain input, including: guidance from the Public Transportation Advisory Team (PTAT); stakeholder interviews; input from major employers in the area; community survey; and an open-house public meeting.

The results of these efforts are presented in **Chapter 3** of the study document and key findings are listed below:

- Although many area residents currently drive their own car, most feel that public transportation services are needed and would be used, based on survey responses.
- Public transportation survey respondents indicated that they would use transit for a variety of trip purposes, most notably shopping, medical, and work trips. Most respondents expressed a need for service every day of the week or several days of the week.
- Thirty-three percent of community survey respondents indicated a willingness to pay \$1.00 - \$1.99 per one way trip. This fare range received more support than any other range suggested on the community survey.

- Local officials agree that public transportation would be beneficial to the area. However, if a significant need for public transportation were demonstrated, it would have to compete for funding with other local needs.

### **GOALS / VALUES**

Goals and values were developed to guide public transportation options for the Radcliff-Elizabethtown MPO Public Transportation Study. The goals and values are shown in **Chapter 4** and summarized below:

- Enhance mobility;
- Provide convenient, customer-oriented service;
- Promote economic development;
- Develop a cost-effective system;
- Build community support; and
- Maximize coordination opportunities.

### **EXISTING PUBLIC TRANSPORTATION SERVICES REVIEW**

A review of transportation services available in the region, excluding the traditional single-occupant vehicle, was conducted as part of this study and results are discussed in **Chapter 5**. Existing services include the Transit Authority of Central Kentucky (TACK), a local taxi cab service, and a Greyhound bus service. A peer review was also conducted for a variety of rural and small urban area transit services throughout Kentucky.

### **SUMMARY OF TRANSIT NEEDS**

**Chapter 6** summarizes the transit needs for the Radcliff-Elizabethtown area, based on the community involvement effort as well as the analysis of demographic characteristics. Key findings are listed below:

- The highest population concentrations are located in the cities of Elizabethtown and Radcliff.
- The highest concentrations of persons over age 65 are in Elizabethtown. To a lesser extent, these concentrations can be found in Radcliff and Vine Grove.

- The areas with the highest concentrations of minority population are in and around the Radcliff area.
- The areas of highest female population concentrations are located in Radcliff.
- Several concentrations of low-income households were identified in and around Elizabethtown and Radcliff.
- Relatively high ridership density concentrations exist within the urbanized area boundary. Two areas in Elizabethtown and one in Radcliff, stand out as having the highest densities of all.
- A number of potential transit trip generators and attractors were identified in Fort Knox, Elizabethtown, and Radcliff.

### **RECOMMENDATIONS**

Details on the development and evaluation of improvement alternatives can be found in **Chapter 7** of the study document. Following is a summary of the recommendations made as a result of this study.

It was decided that a fixed-route service along US-31W and east-west fixed-route service in Elizabethtown and in the Radcliff-Vine Grove area, along with service to Fort Knox would best serve the needs of the community in the most cost-effective fashion. In addition, TACK was recommended to operate the transit alternative. It is recommended that this service alternative be implemented in three (3) phases, and shown below:

- Phase 1 – Fixed-route service along US-31W between Elizabethtown and Radcliff;
- Phase 2 – East-West fixed-route service in Elizabethtown and the Radcliff-Vine Grove area; and
- Phase 3 – Service to and within Fort Knox.

Annual operating costs for Phase 1 are estimated to be \$148,500. Initial capital costs to purchase buses for Phase 1, are estimated to be \$180,000.

Annual operating costs for Phase 2 and 3 are estimated to be \$198,000 and \$99,000, respectively. Initial capital investments for are estimated at \$180,000 and \$90,000, respectively.

**FINAL REPORT**

Radcliff-Elizabethtown MPO Public Transportation Study

September 2005

Completed for:

Radcliff / Elizabethtown MPO (Metropolitan Planning Organization)

Completed by:

Wilbur Smith Associates (WSA)

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## CHAPTER 1: INTRODUCTION

As a result of the 2000 Census, the Radcliff-Elizabethtown area was designated as an urbanized area, requiring the formation of a Metropolitan Planning Organization (MPO) for these communities. The Lincoln Trail Area Development District (LTADD) was designated as the staff agency for the Radcliff-Elizabethtown MPO in 2003 by the Commonwealth of Kentucky, with approval by the United States Department of Transportation, to oversee the use of Federal funds for transportation projects in the region.

Designation of the Radcliff-Elizabethtown area as an urbanized area resulted in the loss of demand-response transit service previously provided there by the Transit Authority of Central Kentucky (TACK). TACK, which is operated by the Central Kentucky Community Action Agency (CKCAA), is a Section 5310 (elderly and disabled transportation) and Section 5311 (rural public transportation) service provider, but TACK currently does not have operating authority to provide city bus service to the general public in the urbanized area.

Further details on TACK operations and information on a previous study for the Radcliff-Elizabethtown area are provided in **Chapter 5** of this report.

### 1.1 STUDY AREA

The study area for the Radcliff-Elizabethtown MPO Public Transportation Study is shown in **Exhibit 1-1**; this area includes the municipalities of Radcliff, Elizabethtown, and Vine Grove. Early in the study process, it was decided that Ft. Knox should also be included in the study.

The City of Muldraugh and a portion of Fort Knox, located in Meade County are part of the Census-designated urbanized area. The remainder of Meade County is not part of the urbanized area and, therefore, continues to receive rural public transportation service from TACK.

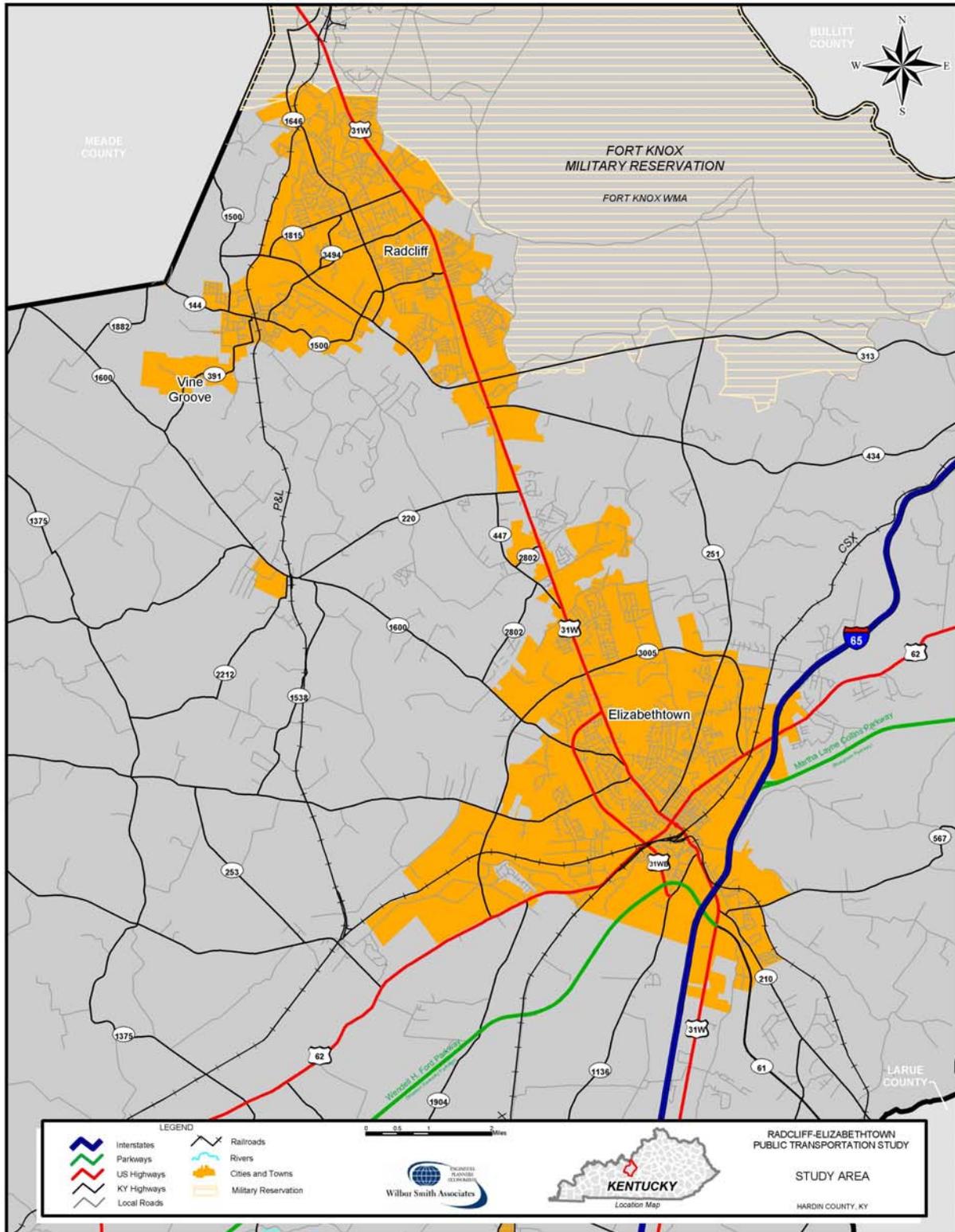
### 1.2 STUDY PURPOSE

With the loss of rural transportation service in the newly designated urbanized area, Wilbur Smith Associates (WSA) was contracted by LTADD to undertake this public transportation study for the MPO to evaluate public transportation needs in the Radcliff-Elizabethtown-Vine Grove Ft. Knox area.

To determine the feasibility of transit in the region, the following questions were to be answered:

- What transportation services are currently available in the MPO area?
- Is there a need for public transportation in the MPO area?
- What types of public transportation services should be offered?
- How would public transportation be operated and administered?
- What are the cost requirements of a transit system?
- What transit facilities are needed?

Exhibit 1-1: Study Area



At the conclusion of the study process, circumstances within the community began to change, potentially resulting in a more favorable climate for local public transit service:

- First, an announcement was made that the mission of Ft. Knox was changing, resulting in a large increase in the number of assigned personnel.
- Second, gas prices increased dramatically, thereby increasing transportation cost for area residents.

While the main portion of the study was undertaken prior to these events, some additional discussion has been included in the report to address these changes.

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## CHAPTER 2: EXISTING CONDITIONS

The purpose of this section is primarily to explore the need for public transportation by examining the demographic and socioeconomic characteristics of the community. Both objective and subjective techniques were used in this study to estimate the level of demand for public transportation service in the Radcliff-Elizabethtown-Vine Grove area. This information is used in recommending appropriate services to be provided.

### 2.1 DEMOGRAPHIC AND SOCIOECONOMIC ANALYSIS

A demographic profile was prepared for all of Hardin County, as the first step in evaluating the demand for transit service in the area. The purpose of this profile is to gain a better understanding of the existing demographic condition and characteristics of the area. This information can be used to identify locations that are most likely to need and to use transit service, based upon the demographic characteristics of the residents.

#### 2.1.1 Population

**Exhibits 2-1** and **2-2** below illustrate recent population counts and future year projections for Hardin County, Radcliff, Elizabethtown, and Vine Grove. Examination of **Exhibit 2-2** reveals that Hardin County is expected to grow faster than Kentucky in the future. Radcliff, Elizabethtown, and Vine Grove, however are expected to grow at a slower rate than Kentucky. Of these three study area cities, Vine Grove is expected to grow at the fastest rate.

**Exhibit 2-1: Historical Population**

Area	1990	2000
Hardin County	89,240	94,174
Radcliff	19,772	21,961
Elizabethtown	18,167	22,542
Vine Grove	3,586	4,169

Source: 2000 U.S. Census

**Exhibit 2-2: Future Population Growth**

	2003 (estimated)	2015 (projected)	2030 (projected)	Total Percent Increase	Avg. Annual Growth
Hardin County	97,956	108,505	121,847	24.4%	0.9%
Radcliff	22,234	22,234	22,234	0.0%	0.0%
Elizabethtown	26,147	26,228	26,333	0.7%	<0.1%
Vine Grove	4,114	4,325	4,588	11.5%	0.4%
Kentucky	4,003,036	4,351,188	4,554,998	13.8%	0.5%

Source: Elizabethtown-Radcliff MPO Model (Hardin, Radcliff, Elizabethtown, and Vine Grove estimates); 2000 U.S. Census (Kentucky estimates)

In May 2005, upon recommendation by the Department of Defense, the Base Realignment and Closure Commission (BRAC) announced potential changes at Fort Knox due to realignment from an armor training mission to a Command and Human Resources mission. The proposed changes for Fort Knox will result in the loss of the Armor Center and School, which involves transient military personnel that come to the base for training for several months and are then transferred to a permanent duty station. The loss of those positions will likely have some impact on on-base housing and on some types of local commercial facilities and services, but that impact should be minimal. The more significant impact will come from the over 6,000 new military and civilian personnel that will now be permanently stationed at Fort Knox. This could mean new housing, commercial development, new roads and infrastructure, new schools, new economic development opportunities, traffic congestion, new base services, additional on-base office building development, and reconfiguration of many of the base facilities to fit the new mission. This will undoubtedly result in additional growth for the study area which is not reflected in the current available forecasts from the U.S. Census.

### **2.1.2 Population Density**

Population density figures from the 2000 U.S. Census were examined for all of Hardin County to help determine locations of residential concentrations. These data are shown graphically in **Exhibit 2-3**.

As illustrated in the exhibit, the highest population concentrations are within the Radcliff-Elizabethtown urbanized boundary. The majority of these residential concentrations are in Elizabethtown and Radcliff.

### **2.1.3 Over Age 65 Population Density**

Persons over the age of 65 are more likely to use transit than persons under this age. As persons become older, their transportation needs may become the responsibility of others due to health and sometimes economic reasons. The Over Age 65 Population Density was calculated to identify if there are any areas of concentration of older persons in Hardin County. Census Block Group data from the 2000 U.S. Census was utilized to identify that particular demographic.

As shown in **Exhibit 2-4**, the areas of highest concentrations of persons over the age of 65 are primarily in Elizabethtown. To a lesser extent, there are concentrations of this demographic in Radcliff and Vine Grove.

### **2.1.4 Minority Population Density**

Historically, minority populations have a high propensity to use transit; thus, it is useful to identify concentrations of minority residents. For the purpose of this study, minority is defined as non-white. According to the 2000 U.S. Census, the minority population in Hardin County is 19.5% of the total population.

The areas with the highest concentrations of minority population are in and around the Radcliff area, as shown in **Exhibit 2-5**.

### **2.1.5 Female Population Density**

It is important to identify areas of concentration of the female population, because females are more likely to use transit than males. The 2000 U.S. Census data was used to evaluate the population of this demographic for Hardin County by Census Block Group.

The highest concentrations of the female population are located in Radcliff as shown in **Exhibit 2-6**.

### **2.1.6 Low-Income Household Density**

Lower-income households typically have a higher propensity to use transit services because they have few, or not any, vehicles available for household usage. Household incomes in the Radcliff-Elizabethtown-Vine Grove area are illustrated graphically in **Exhibit 2-7** by Census Block Group. As can be seen, areas with the lowest median household income levels are located in and around Elizabethtown and Radcliff.

Exhibit 2-3: Population Density in Hardin County

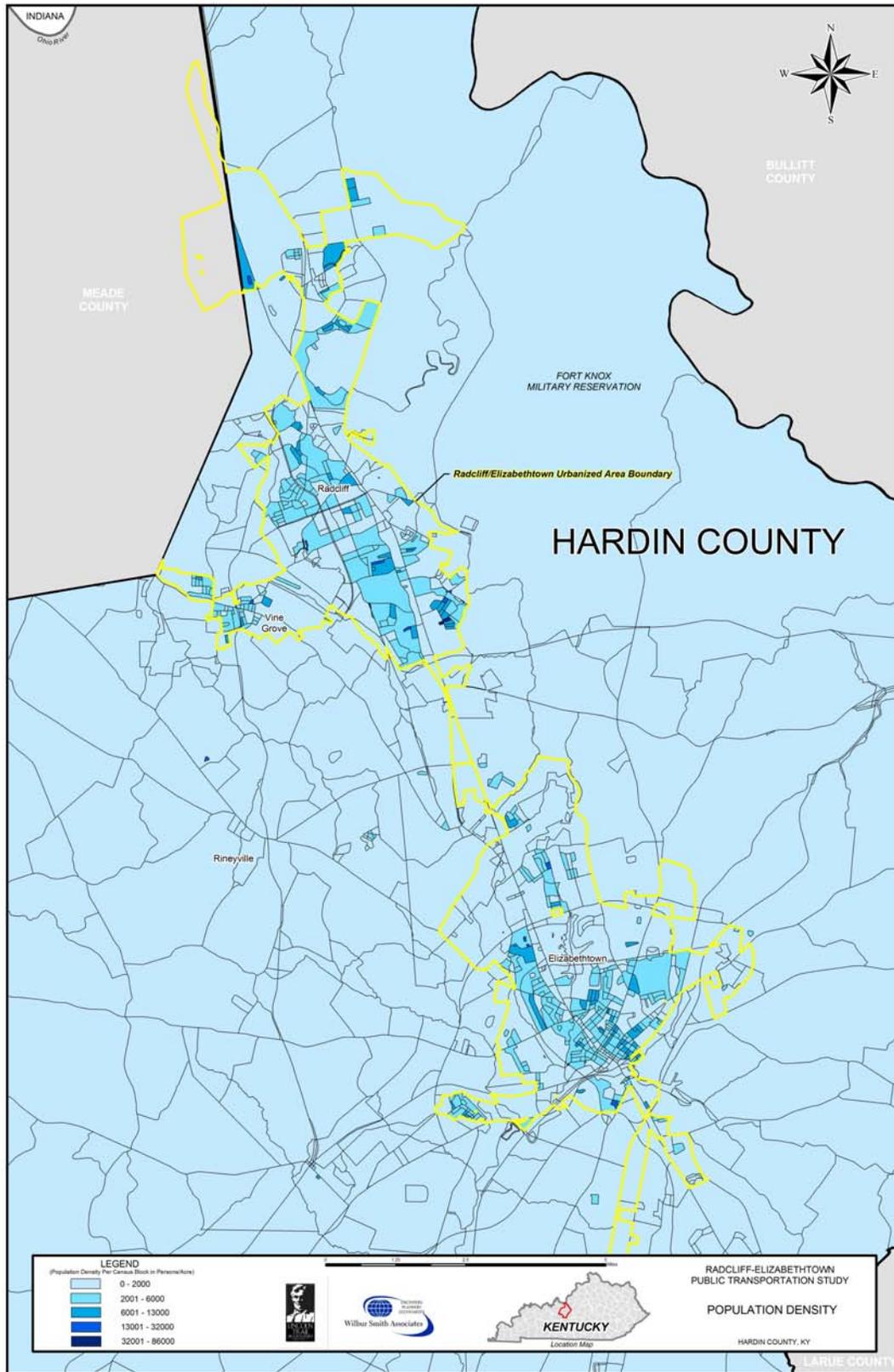


Exhibit 2-4: Age 65 and Older Population Density in Hardin County

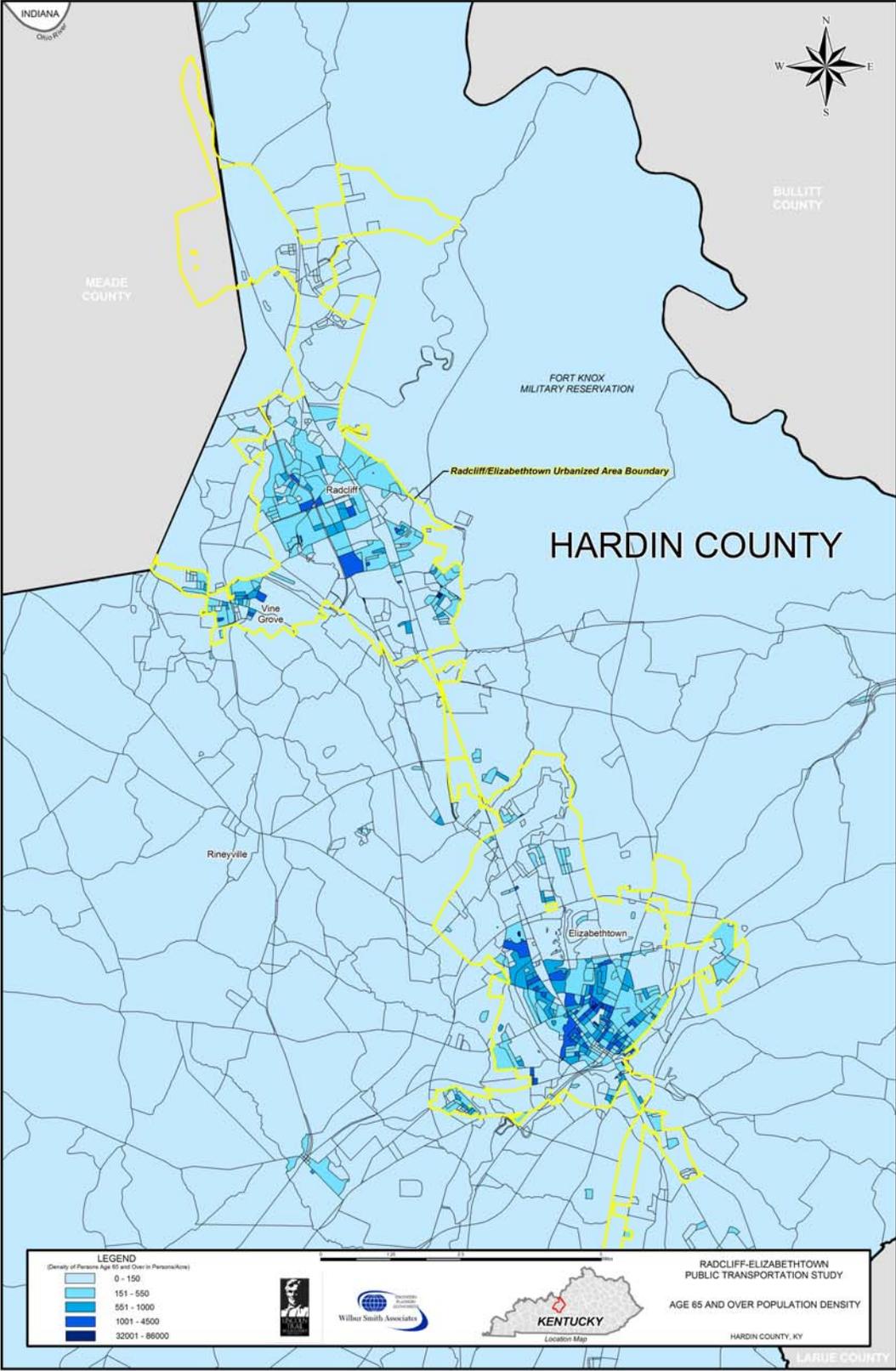


Exhibit 2-5: Minority Population Density in Hardin County

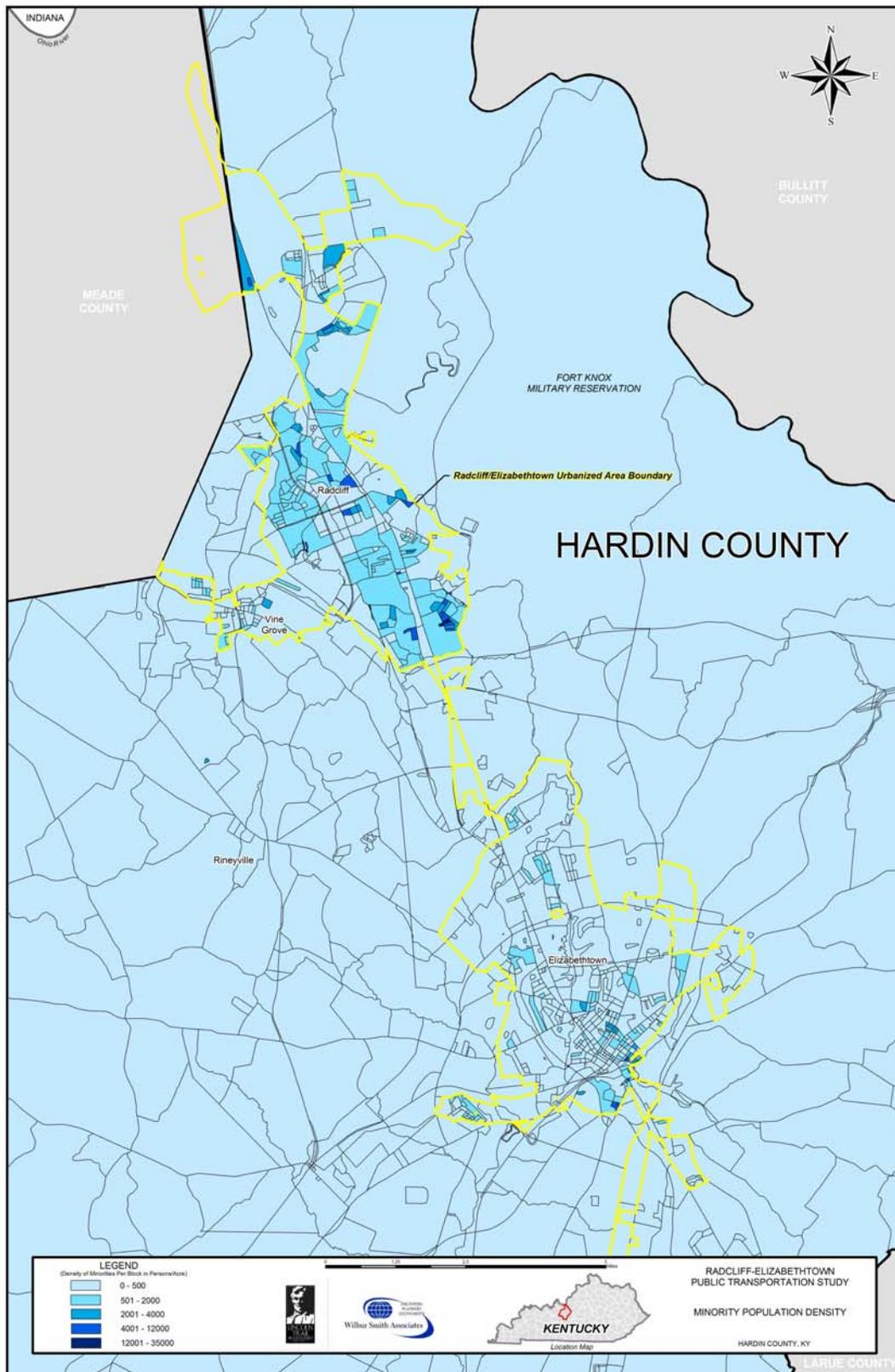


Exhibit 2-6: Female Population Density in Hardin County

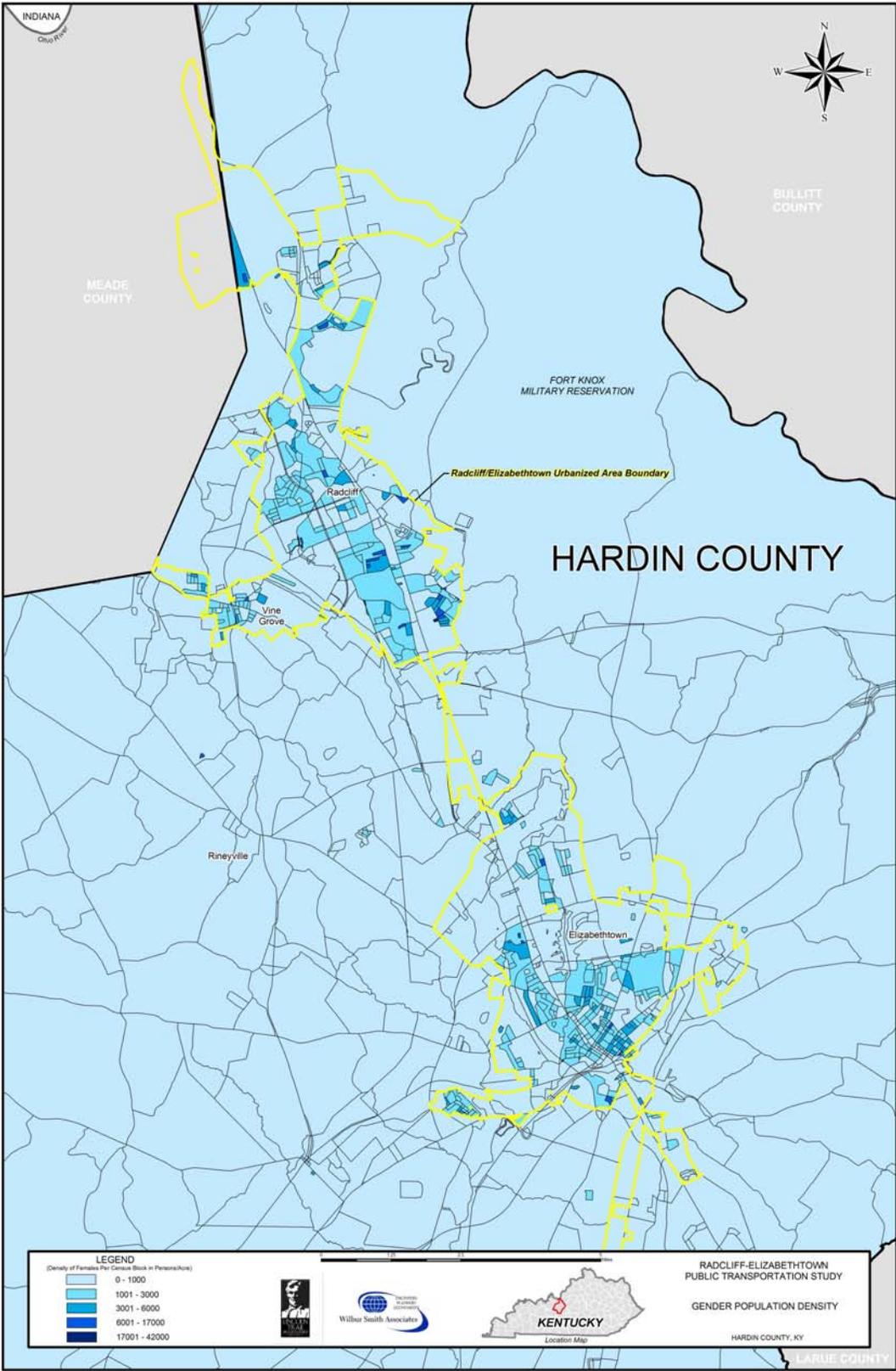
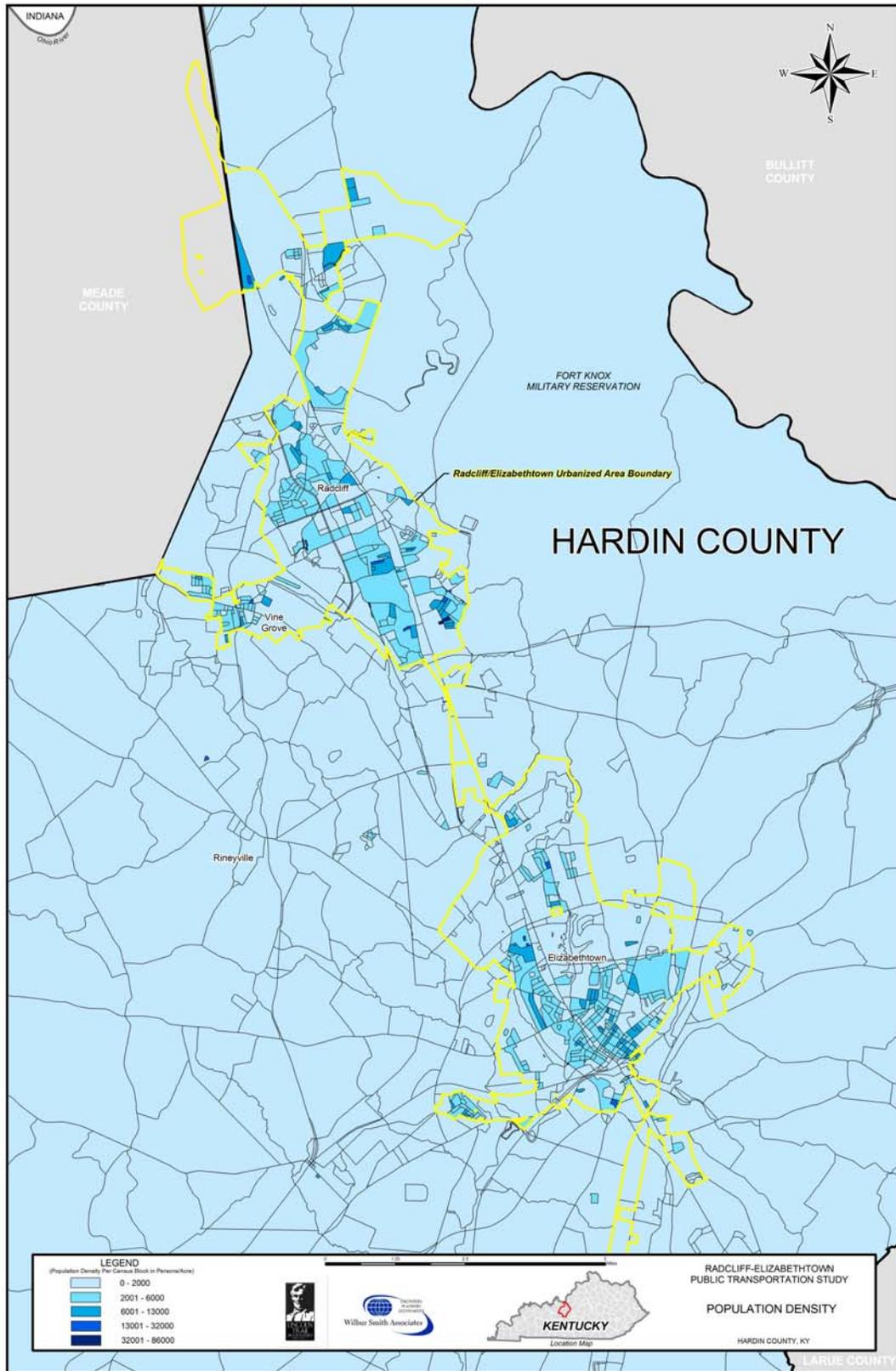


Exhibit 2-7: Low-Income Population Density in Hardin County



### 2.1.7 Transit Propensity and Ridership Analysis

As previously mentioned, Census data can be used to identify locations that are most likely to need and to use transit service, based upon the demographic characteristics of the residents. For this study, 2000 Census data was examined on a Census Block Group level. The Block Group level is the smallest area for which the Census Bureau reports the demographic data used in the analysis. In Hardin County, the 64 Block Groups range in size from 0.2 square miles to 92.1 square miles.

Two separate calculations were made from the data. One calculated the propensity of the Block Group's population to use transit. This calculation determined the relative percentage of the population that would be likely to use transit at a given level of service, in other words, the need for service. The second calculation looked at the theoretical ridership levels in each Block Group, or the demand for service. The two calculations give a more complete picture of ridership potential and complement one another.

#### ***Transit Propensity***

Transit Propensity is the concept that measures the inclination or likelihood of using public transit. Propensity is an economic term used to measure consumer behavior. A higher propensity toward an action means a greater likelihood to do the action. Propensity can be quantified such that someone with a propensity of "2" is twice as likely to do something, such as use transit, as someone with a propensity value of "1".

To identify the transit propensity for each of the 64 Block Groups, eight demographic factors were considered. These factors were carefully selected based upon industry research regarding the potential users of transit. The majority of the background analysis is contained in Transit Cooperative Research Program (TCRP) Report 28: *Transit Markets of the Future, The Challenge of Change*. The specific factors examined were as follows:

- Population density;
- Percentage of households without cars;
- Percentage of persons with mobility limitations;
- Percentage of persons with work disabilities;
- Percentage of persons who are not White;
- Percentage of low-income households;
- Percentage of female persons; and
- Percentage of persons in the workforce age 65 or older.

An index for each of these factors was developed that determined the relative rank of the Block Group compared with the county as a whole. These indexes were then weighted to develop a Composite Score for each Block Group. The weights for each factor are based upon the industry research.

The Composite Scores were then statistically grouped into five categories, from "Very Low" to "Very High" based upon their relationship to the scores of the other Block Groups. The results indicate that the residents of a "High" Block Group are 50 percent more likely to use transit than residents of an "Average" Block Group. "Very High" Block Groups are approximately 100 percent more likely to use transit as are residents in an "Average" Block Group.

**Exhibit 2-8** shows the relative ranking of the Block Groups for Hardin County for transit propensity. Several large areas are identified on this exhibit as areas with the highest propensity to use transit. Typically, this type of propensity analysis identifies (in more detail) specific smaller areas that would be relatively likely to use transit. Because the block groups analyzed are so large, additional analysis of this demographic data is necessary to uncover the demand for transit in this area. For example, the Fort Knox area, which intuitively would have a relatively high transit propensity, ranks “very low”, most likely because of the large size of the block group it is within.

### ***Ridership***

Using the same industry research used for the propensity calculation, it is possible to calculate a ridership index for each Block Group. This calculation is based upon the relative percentage of each demographic group that uses transit in similar locales around the country. Inherent in the calculation is the assumption that a similar level of transit service is provided for each Block Group in Hardin County as for the “average” similar locale in the rest of the country. Unlike the propensity calculation, the ridership calculation does not take density into consideration.

It is possible for a Block Group to rank high in propensity, but have a low ridership. For example, if most residents of a Block Group are likely to use transit, it will have a high propensity, but if there is a small population base, the overall ridership index will be low.

Using the average capture rate, or percentage of the population most likely to use transit, for low-density, low-population areas for each of the demographic categories, a ridership index was calculated. The ridership index is the sum of the estimated riders for each category. To account for residents who are in more than one category, the resulting sum is divided by the overall population weights.

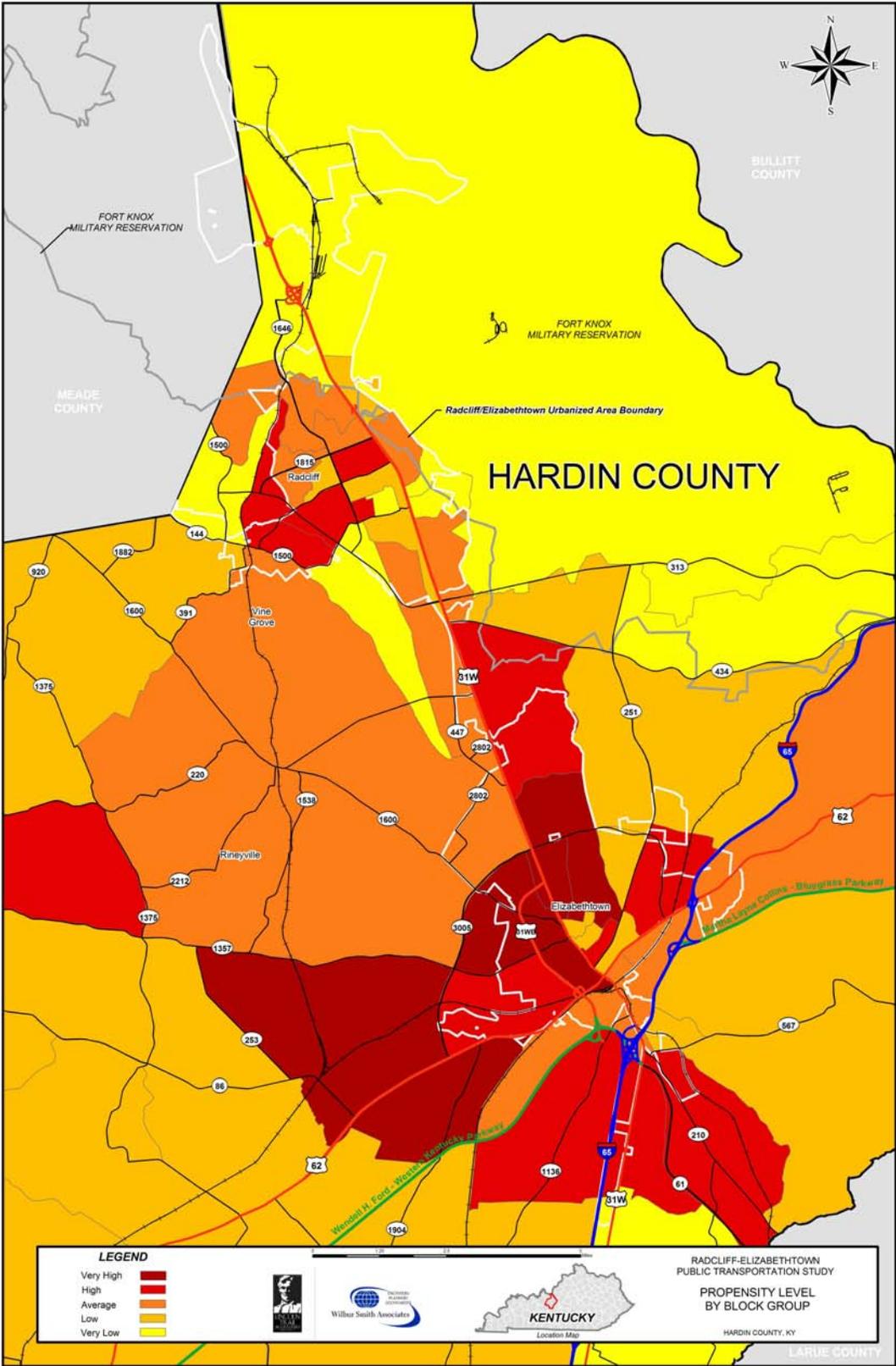
The resulting ridership index is the number of individuals who could be expected to use transit on the typical day, assuming an equivalent level of service was provided to the average county in the US. It is not the same as the average daily ridership on transit, which is expressed in terms of “unlinked trips” or boardings.

The ridership index for seven (7) Block Groups in Hardin County was found to be either “High” or “Very High”. The indices ranged from 4 to 62 for the 64 Block Groups. The sum of the rider indices calculated for all Block Groups in Hardin County was 682. In other words, 682 individuals could be expected to use transit on a typical day in Hardin County, provided a similar level of transit service is provided for each Block Group as for the “average” similar locale in the rest of the country.

While the absolute ridership numbers should be used with caution, the index provides a good indicator of the relative ridership levels that could be expected.

As shown in **Exhibit 2-9**, the majority of potential riders reside in and around Radcliff and Fort Knox. As with the propensity analysis, the results of this analysis are difficult to interpret. Additional analysis of this demographic data is necessary to uncover the demand for transit in this area.

Exhibit 2-8: Propensity Level by Block Group in Hardin County



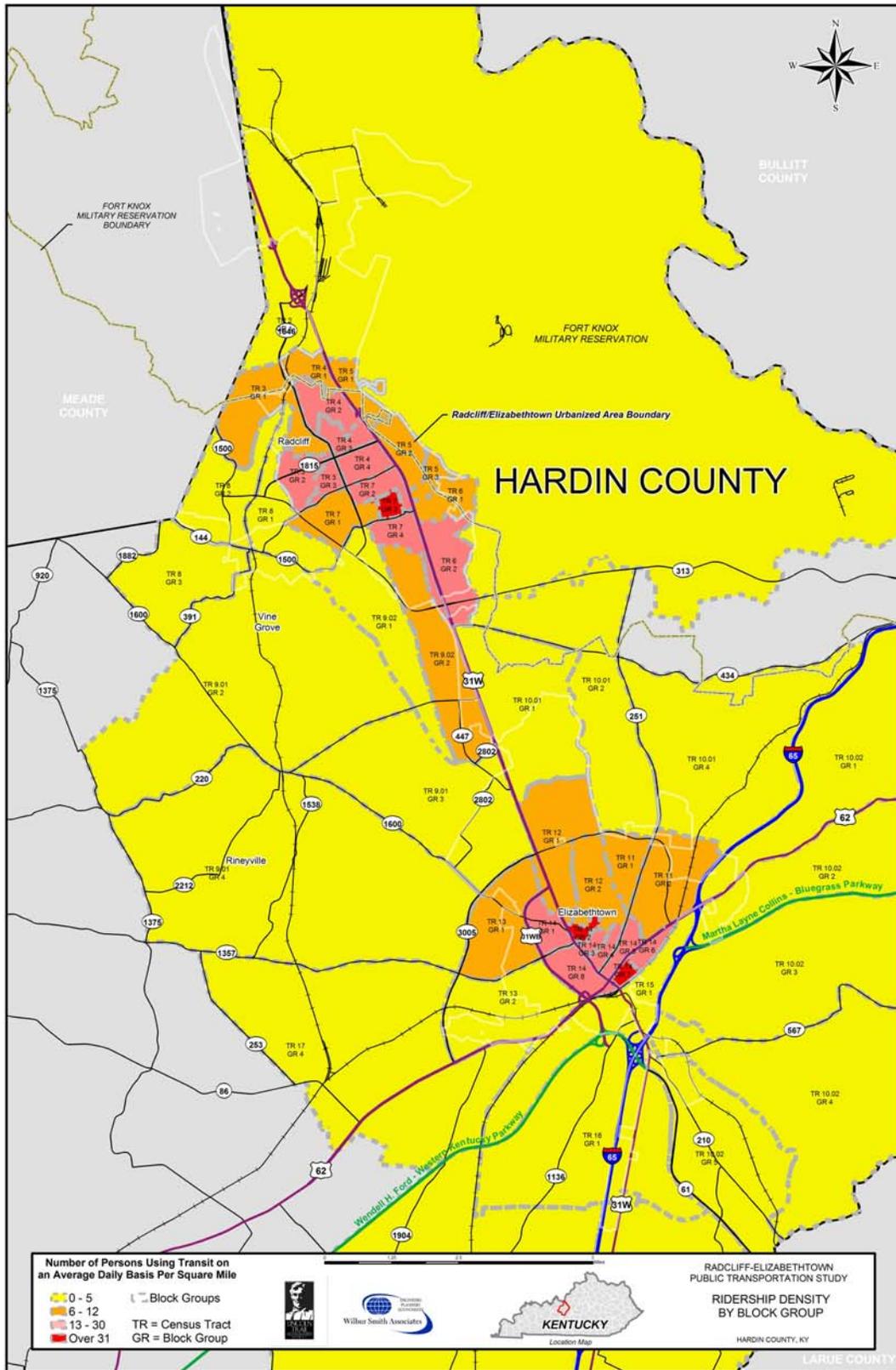


### ***Ridership Density***

The transit propensity and potential ridership analyses did not paint a clear picture as to the degree to which public transportation might be utilized in the study area. In an effort to further examine these results, a ridership density was calculated for each block group. **Exhibit 2-10** illustrates this ridership density for all of Hardin County.

As shown, the relatively high ridership density concentrations exist within the urbanized area boundary. Two areas in Elizabethtown and one in Radcliff, stand out as having the highest ridership densities of all, that is, over 31 persons potentially using transit per square mile on an average daily basis. This information will be particularly useful in the public transportation alternatives development phase.

Exhibit 2-10: Ridership Density by Block Group in Hardin County



## 2.2 MAJOR TRIP ATTRACTORS AND GENERATORS

To help identify potential markets for transit and locations in which transit service may be desirable, the demographic analysis was supplemented by a field investigation of major trip attractors and generators. Major trip attractions, or destinations, include locations such as the following:

- Hospitals / health care facilities;
- Shopping / employment areas;
- Government offices;
- Libraries; and
- Colleges.

Major trip generators, or locations where concentrations of customers reside, include apartment complexes and public housing areas.

### ***Fort Knox***

The Fort Knox area is a major and very active military installation. This site is unique in that it has its own special transportation needs and issues that affect not only the military base, but also the surrounding communities. Fort Knox is the single most significant attractor and generator within the study area.

After all analysis was completed for this study, an announcement was made by the Department of Defense regarding a change in mission for Ft. Knox. The Armored School was to be moved to Ft. Benning, Georgia, resulting in a loss of temporary personnel who travel to the base for armored training. However, there was a reassignment of the other missions to Ft. Knox, which is expected to result in an increase of over 6,000 permanent new personnel to be assigned to the base.

Since the analysis for the study was already completed and approved, this information has not been taken into account in the Transit Propensity and Ridership analyses. However, it is safe to conclude that this increase in population would increase transit demand within the community and especially for Ft. Knox.

### ***Elizabethtown***

The City of Elizabethtown serves as a regional economic and services center for people who live inside the area and in surrounding counties who travel to jobs, commercial services, government services, health and human services, and higher education facilities. The majority of trip attractions are located here, including, but not limited to:

- Towne Mall;
- Hardin Memorial Hospital;
- Wal-Mart;
- Elizabethtown Community and Technical College;
- Hardin County Public Library; and
- Government services.

Shown in **Exhibit 2-11** are the major businesses and industries in Elizabethtown, along with the number of people that each employ. Elizabethtown is home to two (2) industrial sites which are not currently occupied. The T.J. Patterson Industrial Park, totaling 542.9 acres, is located within southwestern city limits of Elizabethtown. The Hughes Center of Commerce and Industry, also within the southwestern city limits of Elizabethtown is a 182.8 acre site.

**Exhibit 2-11: Major Elizabethtown Employers**

Business	Employees
Accumetric LLC	160
AGC Automotive Americas	603
Altec Industries Inc	164
AMBRAKE Manufacturing LTD	1134
Barnes Distribution	90
CDR Pigments & Dispersions	125
Cott Beverages	140
Dana Corporation	1036
Dow Corning Corp	222
E M B Corp	110
Fischbach USA	72
Flint Ink North America Corp	233
Fort Knox National Company	365
Gates Rubber Company	173
Mouser Custom Cabinetry LLC	280
News-Enterprise Inc	100
Robert Bosch Tool Corporation	125
SKF Roller Bearing Industries Inc	78
Summit Polymers Inc	360
UPS Supply Chain Solutions	99

*Source: Kentucky Cabinet for Economic Development (06/28/2005)*

A number of trip generators in the study area are located within the City of Elizabethtown. **Exhibit 2-4** revealed high concentrations of persons over age 65 living in Elizabethtown. Additionally, several assisted living facilities are located in Elizabethtown, including:

- Atria Senior Living;
- Bluegrass Assisted Living;
- Council Oaks Assisted Living Home;
- Helmwood Village Retirement Community;
- Morningview Gardens, Inc.;
- Windsor Gardens Assisted Living Community; and
- Taylor Made Assisted Living.

**Radcliff**

Radcliff, though primarily residential, is home to some major trip attractors, including a Wal-Mart, a branch of the Hardin County Public Library and government services. Radcliff's close proximity to Fort Knox makes the area an attraction to Fort Knox residents for shopping and dining.

Employment centers attract large amounts of trips every day from their employees and other services. **Exhibit 2-12** lists the major businesses and industries in Radcliff, along with the number of people each employees.

**Exhibit 2-12: Major Radcliff Employers**

Firm	Employees
Certified Construction Co	50
Hardin Delivery Inc	100
IMI	40
Kentucky Concrete, Inc. Plant 2	12
Nielsen Media Research Inc	446
Optioncare	63
Pulau Electronics Corporation	50
Standard Register Co	85
U S Cavalry	90

*Source: Kentucky Cabinet for Economic Development (06/28/2005)*

Two (2) available industrial sites are located in Radcliff. The Millpond Business Center is a 160-acre business park located in the southwestern city limits of Radcliff. Fully developed, the “park-like” setting is intended for light manufacturing and office space users. The Radcliff Industrial Park, a 58.4 acre site, is located in the northwestern portion of Radcliff.

A number of trip generators in the study area are located within the city of Radcliff. High concentrations of minority population are in and around the Radcliff area, as previously shown in **Exhibit 2-5**.

### **Vine Grove**

Government services are the predominant travel attractors in Vine Grove, a small, predominantly residential area. There is a senior citizen center located on Curme Road.

Within the population of just over 4000 people, no major trip generators were identified in Vine Grove. However concentrations of persons likely to use transit were found in Vine Grove, as shown in **Exhibits 2-3** through **2-7**.

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## CHAPTER 3: COMMUNITY INVOLVEMENT

This section describes the community involvement efforts undertaken throughout the Radcliff-Elizabethtown MPO Public Transportation Study. Public involvement was a crucial element of this study to help determine the transit needs of the Radcliff-Elizabethtown-Vine Grove area. A variety of mechanisms were used to gain the community's input, including:

- Public Transportation Advisory Team (PTAT);
- Stakeholder interviews;
- Input from major employers in the area;
- Community survey; and
- Open-house public meeting.

The results of these efforts are discussed below.

### 3.1 PUBLIC TRANSPORTATION ADVISORY TEAM (PTAT)

To provide oversight and guidance for the study, a Public Transportation Advisory Team (PTAT), made up of 20 community leaders, was established. Members of PTAT are listed in the **Appendix** of this report.

WSA conducted six (6) meetings with this group, as follows:

October 7, 2004: Discussed project scope and approach.

December 2, 2004: Updated the team on stakeholder and community outreach; presented demographic characteristics for Hardin County; discussed the potential types of transit services; and provided examples of transit goals from other areas.

January 25, 2005: Discussed results of community survey; presented information on peer city operations; and discussed and established preliminary project goals.

February 22, 2005: Presented revised community survey, survey demographics vs. county demographics, specific Fort Knox destinations desired, additional peer city information, and refined project goals; introduced potential public transportation service alternatives.

March 29, 2005: Presented revised service alternatives; discussed TACK's current operations and restrictions; discussed upcoming public meeting.

May 11, 2005: Summarized public meeting survey results; presented evaluation of service alternatives; presented and received PTAT approval of recommended public transportation alternative and worked to refine the recommendation.

August 30, 2005: Presented and received comments on draft report.

### 3.2 STAKEHOLDER INTERVIEWS

WSA conducted interviews with local officials to gain an understanding of their perspectives on issues associated with local public transportation. The interviews

focused on current and future public transportation needs and services, primary origins and destinations, perceived obstacles to implementation of transit services, and administration of potential transit services. The Radcliff-Elizabethtown MPO made the initial contact with 28 stakeholders by sending explanatory letters of the study with stakeholder questions attached. WSA successfully followed up by means of telephone and/or personal interviews with 10 of the 28 persons originally contacted.

At the time of the survey, there appeared to be only minimal interest in public transportation by local officials in the Radcliff-Elizabethtown area. During individual discussions, some officials expressed serious concerns over the budgetary impacts, and they indicated that public transportation was not a strong need or a high priority for the area, as compared to other needs. These concerns were borne out by the survey results, which could help explain the relatively low response to the survey by others.

Those stakeholders who responded agreed that there is some level of need for public transportation in the study area. Each stakeholder expressed interest in the outcome of the study, specifically the degree of need for public transportation. There was consensus among stakeholders that, if a significant need for public transportation were found, such a service would have to compete with the many other significant needs of the community - needs which already far outweigh financial resources.

### **3.3 MAJOR EMPLOYERS SURVEY**

According to the U.S. Department of Commerce, Bureau of the Census, Journey-To-Work & Migration Statistics Branch, 47,591 persons were employed in Hardin County in Calendar Year 2000, over 75% of which also lived within Hardin County.

WSA obtained employer input primarily through a telephone survey and fax responses. The goal of the survey was to assess the level of transportation needs for employees from the employer's perspective, and also to determine the employers' level of interest in supporting a public transportation system. WSA mailed the survey to fifteen major employers and attempted several times to contact each one for a follow-up telephone interview. Input was only received from four (4) employers.

As with the local officials, there appeared to be only minimal interest from employers in public transportation for the Radcliff-Elizabethtown area at the time of the survey. Employer interviews revealed that employee transportation was not a major concern, as indicated by the survey results. This would probably explain the very low response.

Employers who participated agreed that public transportation would be a positive addition to the area and is likely needed by some community members. No employer, however, indicated that they have had trouble hiring or maintaining staff due to the lack of transportation. Also, no employer indicated a willingness to support public transportation financially, either.

### **3.4 COMMUNITY SURVEY**

A survey was developed to gauge the public's interest in and need for transit. This survey also included questions about potential trip destinations, trip purposes, times of travel, etc. Surveys were distributed with the assistance of PTAT members and via local newspapers. With this effort, a total of 610 valid surveys were received from the public.

This response was exceptional considering the tight schedule of the study. The completed surveys provided some notable observations with regard to the potential transit demand in the Radcliff-Elizabethtown-Vine Grove area. It should be noted that the survey is not representative of a cross-section of the entire population of the study area, because the survey primarily targeted those people who are most likely to have transportation needs. Nevertheless, the survey accomplished its goal of helping to identify the level of need for transit services. Major findings from the survey are summarized in the text below and shown graphically in **Exhibit 3-1**.

Current Transportation Mode: With regard to current modes of transportation, the majority of respondents (76%) drive a car. Less frequently identified modes of travel included carpooling (34%) and walking (15%), while a few (5%) expressed current use of rural public transportation (TACK) or bicycles.

Potential Public Transportation Use: The community survey asked if they would use bus/van services if made available to them in the area. Most respondents (481 of 610, or 79%) answered that they would use the services. Over half (53%) of the community respondents would use the service either every day or several days a week. Once-a-week service was preferred by 19% of respondents.

Trip Purpose: If bus/van services were available, most respondents would use the service for shopping (65%) and/or medical (53%) trips. Work (39%), social services (25%), and school (17%) trips were identified as other reasons to use the public transportation service.

Destinations: When asked where they want to travel using the bus/van, nearly 300 unique responses were given. Many were very general in nature, while others were more specific. The following indicates the specific locations that were mentioned most often, listed by decreasing number of responses.

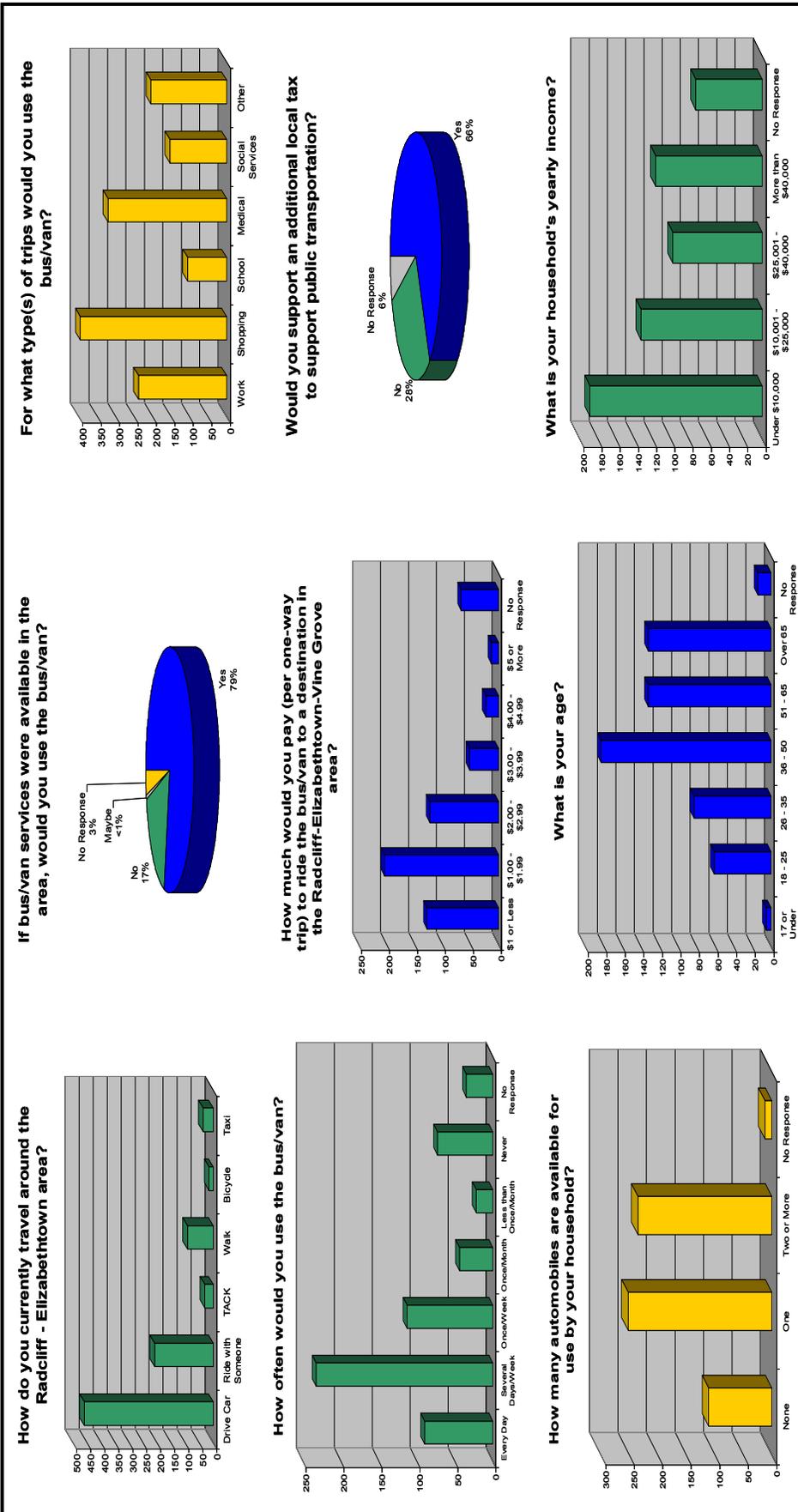
- Towne Mall;
- Hardin Memorial Hospital;
- Fort Knox;
- Wal-Mart (unspecified);
- Elizabethtown Community and Technical College;
- Library (unspecified);
- Kroger; and
- Louisville.

Service Fare: The community respondents indicated a wide range in the maximum fare that they would be willing to pay (per one-way trip), with a fare of \$1.00-\$1.99 receiving the highest number of responses (204 of 610, or 33%).

Local Tax Support: Of the total number of surveys, 66% of the respondents indicated support for an additional local tax to support public transportation.

Household Vehicle: The majority of the respondents (80%) have at least one vehicle available for use by their household. Also important to note, 111 respondents (18%) indicated they have no vehicle for use.

Exhibit 3-1: Community Survey Results



Household Income: Regarding yearly household income, the most frequent response (31%) was an income of under \$10,000. The second most frequent response (22%) was between \$10,001 and \$25,000.

### 3.5 PUBLIC MEETING

On Tuesday, April 19, 2005, a Public Involvement Open House was held at the Bluegrass Middle School in Elizabethtown, Kentucky, from 5:00 p.m. to 7:00 p.m. The purpose of the open house was to obtain citizen input on potential alternatives for transit in the Radcliff, Vine Grove, and Elizabethtown areas.

Advertisement for the public meeting was placed in local newspapers on the following dates:

- The News Enterprise - Sunday, April 10, 2005 and Monday, April 18, 2005
- The News Enterprise Website - Sunday, April 10, 2005 and Tuesday, April 19, 2005
- Hardin County Independent - Thursday, April 14, 2005
- The Sentinel - Thursday, April 14, 2005

The meeting was also advertised, by the placement of flyers, at the following locations:

- Elizabethtown City Hall
- Radcliff City Hall
- Vine Grove City Hall
- Hardin County Public Library - Elizabethtown
- Hardin County Public Library - Radcliff
- Wal-Mart
- Elizabethtown Community & Technical College
- All Hardin County-based TACK vehicles
- Radcliff Chamber Newsletter

The public meeting flyer was also distributed by several PTAT members, sent out via email to over 300 members of the Elizabethtown Chamber of Commerce, and placed on LTADD's website.

The News Enterprise, Hardin County Independent, and Sentinel local newspapers printed stories on April 11, 2005 related to the study and public meeting. Mike Skaggs, LTADD, conducted phone interviews with WQXE and WKMO/WIEL on April 12, 2005.

Fifty (50) persons registered their attendance at this two-hour public session, including seven (7) KYTC, ADD, and consultant staff. Attendees of this open house were given a survey questionnaire. Several exhibits illustrating findings, and potential transit alternatives were placed around the meeting room. Attendees were invited to view project exhibits and discuss questions or concerns with project staff.

A PowerPoint slide presentation was presented to provide information on the proposed public transportation alternatives. The consultant staff first provided a brief overview of the study area, project goals, and project schedule. Second, information regarding

existing services and peer reviews was discussed. Opportunities for the public to be involved with the project were then identified. Finally, transportation service alternatives were presented to the public. All attendees were asked to participate in completing the comment survey, specifically regarding service preferences. The presentation slides were displayed continuously throughout the remainder of the public involvement session.

Before leaving, a total of 26 individuals completed the public comment survey provided. Responses to the public comment survey are summarized below.

Need for Public Transportation: Almost all (25 of 26 respondents) stated that public transportation is needed for the general public in their community. The most frequent reasons for the need included assistance for the elderly and disabled and for those who cannot afford personal transportation.

Trip Purpose: Of all types of trips that require transportation, respondents identified the primary purposes to use a general public transportation bus were for medical (65%), work (61%), and shopping (61%) trips. Social services and school trips were less important reasons to use transportation: 23% and 15%, respectively.

Potential Use: The survey asked how often they would use a bus service if made available to them Monday - Friday in the area. Almost half (12 of 26 respondents, or 46%) answered they would use the service several days a week. Other frequent answers included either every day (19%) or once a week (19%) use of the service.

Issues of Importance: The frequency of service was ranked "Very Important" by most respondents (17 of 26, or 65%) when asked about the importance of public transportation service issues. Cost of Service to User, Cost of Service to Community, and Destinations that Service Provides were all ranked as "Important" issues.

Daily Service Hours: Half of the 26 respondents felt that the daily service hours of a public transportation service needed to be from 6:00 AM to 8:00 PM. Nine (9) respondents commented that the service hours of 7:00 AM to 6:00 PM were appropriate.

Weekend Service: When asked if a weekend public transportation service is needed in the area, the majority (21 of 26 respondents, or 81%) stated that the service is needed.

Additional Comments: Following are additional comments made by survey respondents:

- It's a good thing for teens, young adults, and elderly who can't drive.
- A service would be beneficial to all people in community and would bring our community together as a whole.
- A parking area at the end of the route would be used by rural people. The area's population is getting older and public transportation cuts environmental damage. Employers may choose to locate where there is transit. I have many friends who could not get to this meeting b/c of lack of public transportation.
- We need parking lots for rural transportation. I know of people that would have been here if there was a public transportation.
- We need two schedules for running buses: 7am-4pm and 9am-6pm.

- When I moved here I was shocked that public transportation wasn't available. Don't tell me it's unaffordable because people in this county always find ways to fund what they want.
- Ft. Knox should be added.
- Transportation has been in need for a very long time.
- Your data is skewed to drive a positive response and not present a fair presentation of facts and costs to the taxpayer.
- Consider a monthly rate so people could get a cheaper deal if they buy the monthly pass.
- Transportation should be set on a schedule so that people could then schedule their medical appointments and other affairs to the times of arrival of the buses.
- We need public transportation.

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## CHAPTER 4: GOALS / VALUES

Overall goals and values were developed to guide public transportation options for the Radcliff-Elizabethtown area using findings of this study, predominantly community input.

The goals and values are as follows:

- **Enhance mobility** options for populations with the highest levels of need, including transportation disadvantaged, such as, elderly, disabled, and low-income citizens.
- Provide **convenient, customer-oriented service** to origins and destinations with the greatest demonstrated need, such as service for the transportation-disadvantaged to medical facilities, educational institutions, community services, and shopping areas.
- **Promote economic development** through transit services to support tourism, commercial interests, and other identified local business needs, including the provision of an **effective employment transportation** option for local residents.
- Develop a **cost-effective** system that makes efficient use of financial resources.
- Build **community support** by using transit to add value to the community.
- Develop an efficient organizational and administrative structure for transit that will **maximize coordination opportunities**.

These goals were then used in the evaluation of the alternatives and options identified in the study, as discussed in **Chapter 7**.

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## CHAPTER 5: REVIEW OF EXISTING TRANSIT SERVICES

This section identifies the transportation services available in the region, excluding the traditional single-occupant vehicle. A peer review was also conducted to determine the operating characteristics of transit services in other similarly-sized areas. This analysis was helpful in determining the level of public transportation service that may be appropriate in the Radcliff-Elizabethtown-Vine Grove area.

### 5.1 CURRENT TRANSIT SERVICES IN REGION

Following are the major public transportation services currently available in the study area.

#### 5.1.1 Transit Authority of Central Kentucky (TACK)

Public transportation services are currently available to the general public through the Transit Authority of Central Kentucky (TACK). The Central Kentucky Community Action Agency (CKCAA) is responsible for the operations of this transit service.

TACK serves as the state-designated Human Service Transportation Delivery (HSTD) broker to provide transportation service for Medicaid, Department for the Blind, and Vocational Rehabilitation recipients; Senior Citizens under Title III; Foster Care participants; and Communicare's mental health, mental retardation and substance abuse clients. TACK's service area covers Hardin County and six (6) surrounding counties, including Breckinridge, Grayson, Larue, Marion, Meade, and Nelson. TACK also operates a non-profit bus/co-op rural transit system providing door-to-door service for the general public on a demand-response basis and on pre-established routes, except within the cities of Radcliff and Elizabethtown.

As indicated in Chapter 1, the recent designation of the Radcliff-Elizabethtown area as an urbanized area resulted in the loss of rural transportation funding to provide open-to-the-public transit service in both Radcliff and Elizabethtown. This resulted in the loss of the demand-response transit service provided by TACK for the general public in those two communities. This means that for-hire transportation service by TACK is not available to any person in Radcliff and Elizabethtown not eligible for HSTD service.

Only eligible HSTD recipients can now be served within these two urban areas for trips directly related to the HSTD program, including special services such as medical treatment, pharmaceuticals, and vocational training. Under their respective programs, senior citizens and foster care participants can be picked up and delivered anywhere for any purpose within TACK's service area. However, with the loss of the rural transportation program for Radcliff and Elizabethtown, some eligible HSTD recipients are only allowed to use TACK for medical trips, but not for access to other facilities or services, such as grocery stores, retail shops, beauty salons, theaters, restaurants, etc. All of the eligible HSTD trips are supposed to be reserved at least 48 hours in advance, so TACK's service is not as responsive in meeting last-minute transportation needs as a regularly scheduled public transit service could be.

Under the rural public transportation program, TACK still provides demand-response rural transportation service for the general public for rural Hardin County, just not in the cities of

Radcliff and Elizabethtown. That is, persons in the rural portion of Hardin County can pay a fare and get transportation service, but this is not available in the two urban areas. Destinations provided by this service include any point within the state.

TACK maintains a total of sixty-four (64) vehicles with twenty-nine (29) being wheelchair-lift equipped.

The “*Community Transit Plan for Hardin County*” was completed in 2000 by Leadership Elizabethtown in conjunction with TACK. This study provided background information on the need for public transportation, details on accomplishments towards implementation prior to the date of the report, ideas on the management of the system, and items still to be completed.

In the Leadership Elizabethtown study, it was proposed that TACK should operate and manage the system, with oversight from a Hardin County Transit Authority Board. TACK agreed to hire CDL drivers; purchase insurance; supervise the drivers; provide maintenance, fuel, and parts for the buses; and schedule routes. Funding for the operation of the local bus system was to be provided by the State and Federal governments, with matching funds provided by local governments served by the system. Private grants and fares would also be used for operation.

Based on the Leadership Elizabethtown study, Federal funds were legislatively earmarked and used for the purchase of two buses for the urban public transit operation. However, subsequently, the local governments were unable to dedicate local monies to match the Federal operating funds, so the recommendations of the study were never implemented. The two buses were turned over to TACK, who held them for a while pending resolution of the funding problems. After some time had passed and the urban system was not funded, TACK used the two buses within the Elizabethtown/Hardin County area for their existing services. The buses are now approaching the end of their useful life, so they are no longer a viable option to use in any new urban public transportation service in the area.

### **5.1.2 Local Taxicab Service**

Although most trips are provided by TACK, some Medicaid trips are provided by the Cleveland Johnson Cab Company. Cost for this service (one-way local trips) ranges between \$7.00 and \$10.00 for seniors, based on a zone structure established by the Cleveland Johnson Cab Company. Costs for the general public are slightly higher, from \$7.50 to \$10.50, for local trips. This cab service provides approximately 60 Medicaid and general purpose trips per day.

### **5.1.3 Greyhound Bus Service**

Greyhound Lines, Inc., provides intercity bus transportation for the general public to numerous travel destinations in North America. Two (2) greyhound bus stops are located in the study area. Within Radcliff/Fort Knox, a bus stop is located at Freddy’s Taxi Cab Service on North Dixie Boulevard. The second bus stop is in Elizabethtown on North Mulberry Street.

## 5.2 PEER REVIEW OF SERVICES IN SIMILAR SETTINGS

To provide a point of comparison for potential transit services in the Radcliff-Elizabethtown-Vine Grove area, a peer review was conducted for a variety of rural and small urban area transit services in Kentucky. As shown in **Exhibit 5-1**, several similarly-sized cities have made substantial investments in transit to serve the needs of their communities.

The average cost per bus per hour of the peer systems is approximately \$32 dollars. This estimate was used to estimate the cost for potential public transportation alternatives in the study area, as discussed in **Chapter 7**. This estimate includes all operating costs (administration, marketing, labor, fuel, etc.).

The average recovery of revenue from the farebox for the peer systems is 5.8%. This information was helpful as part of the financial analysis to assess the amount of money that might be expected from the farebox for public transportation service in Radcliff, Elizabethtown, and Vine Grove, as discussed in **Chapter 7**.

**Exhibit 5-1: Peer City Review**

Criteria	Rural Systems					
	Frankfort Transit	Glasgow Transit	Maysville Transit System	Morehead Area Transit	Paducah Transit Authority	Murray/Calloway Transit Authority
<b>Current Operating Conditions*</b>						
City	Frankfort	Glasgow	Maysville	Morehead	Paducah	Murray
Service Area	City of Frankfort	City of Glasgow	City of Maysville, Mason County, Buffalo Trace Development District	City of Morehead	Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, Marshall, and McCracken Counties	City of Murray, Calloway County
Service Area Population	26,535	14,000	19,000	7,785	27,256	34,177
Type of Service	Fixed Route with ADA Paratransit Service.	Fixed Route with ADA Paratransit Service.	Within city limits fixed route with demand response to certain low income locations. ADA paratransit services to all of Mason County through Lincoln Valley Community Action Agency.	Fixed Route with ADA Paratransit Service.	Fixed Route, Demand Response, and Dial-A-Ride.	Demand Response in Murray and Calloway County, Medicaid Response in Graves and Marshall County.
Number of Routes	3 Fixed Routes	One Route (7 runs/day)	One Fixed Route and 1 Trolley Route	One Route (6 runs/day)	9 Fixed Routes	N/A
Days/Hours of Operation	Monday-Friday 6:45 AM-5:40 PM, Saturday 8:05 AM-3:40 PM. ADA Paratransit Monday through Friday from 6:00 AM-5:30 PM and on Saturday for any one who has scheduled a trip.	Monday-Friday 6:30 AM-6:30 PM	Monday - Saturday 6:00 AM-6:00 PM, Sunday 12:00 PM-6:00 PM	Monday-Friday, 7:30 AM until 4:30 p.m	Monday - Friday 6:00 AM - 6:00 PM; SATURDAY 9:00 AM - 6:00 PM (ADA SERVICE is provided during regular bus hours. Demand-Response is a scheduled service. DIAL-A-RIDE service is available 24 hours a day.	Monday-Friday 7:00 AM-5:00 PM
Fare**	\$0.50 for passengers two years and up, senior citizens \$0.25 each way, transfers free.	\$0.50 one way.	\$0.25 for both services. Children and seniors ride free.	\$1.00 one way and 50 cents for elderly & handicapped.	\$0.75/ride, \$0.10/transfer (Demand Response service is handled at a charge of \$1.00 per mile with a \$2.00 minimum charge. DIAL-A-RIDE service is \$1.75 per mile with a \$3.00 minimum charge.	\$2.00 in Murray, \$5.00 in Calloway County, \$0.65/mile outside of Calloway County.
Start Date	1978	1995	1962	1978	1981	1980
<b>2003 Statistics***</b>						
Peak Vehicles Operated	7	1	5	1	78	7
Total Passengers	49,307	6,845	26,726	2,021	234,278	57,116
Total Miles	169,449	33,110	108,092	27,846	393,911	240,321
Total Hours	18,774	3,060	21,840	1,984	78,840	18,270
Total Expenses	\$447,258	\$60,251	\$188,645	\$51,138	\$3,001,901	\$292,629
Passengers/Hour	2.63	2.24	1.22	1.02	2.97	3.13
Cost/Passenger	\$9.07	\$8.80	\$7.06	\$25.30	\$12.81	\$5.12
Cost/Hour	\$23.82	\$19.69	\$8.64	\$25.78	\$38.08	\$16.02
Farebox Revenues	\$20,396	\$3,423	\$7,037	\$1,709	\$61,819	\$36,887
Other Revenues	\$6,060	\$0	\$8,508	\$0	\$1,622,967	\$147,308
Other Revenue Sources	Incidental Charters	N/A	Medicaid Transportation	N/A	Medicaid Transportation	-
Total Revenues	\$26,456	\$3,423	\$15,545	\$1,709	\$1,684,786	\$184,195
Farebox Recovery Ratio	4.6%	5.7%	3.7%	3.3%	2.1%	12.6%

\* Current operating conditions obtained from individual websites and telephone interviews.

\*\* ADA Paratransit service is twice the cost of traditional service for any fixed route.

\*\*\* 2003 Statistics for the rural systems provided by the Kentucky Transportation Cabinet Office of Transportation Delivery. 2003 Statistics for the small urban systems estimated by system operators.

Exhibit 5-1: Peer City Review (continued)

Criteria	Small Urban Systems			
	Henderson Area Rapid Transit	Owensboro Transit System	Ashland Bus System	Bowling Green Transit System
<b>Current Operating Conditions*</b>				
City	Henderson	Owensboro	Ashland	Bowling Green
Service Area	City of Henderson	City of Owensboro	Boyd County; Wayne, WV (60 mile radius of Ashland)	Allen, Barren, Butler, Edmonson, Hart, Logan, Metcalf, Monroe, Simpson, and Warren Counties
Service Area Population	27,300	54,067	49,752	256,536
Type of Service	Fixed Route with ADA Paratransit Service.	Fixed Route Service with ADA Paratransit Service provided through Green River Intra-County Transit System (GRITS) and a River City Trolley.	Fixed Route with ADA Paratransit Service.	Fixed Route with ADA Paratransit Service.
Number of Routes	5 Fixed Routes using 3 buses	6 Fixed Routes and 1 Trolley Route	4 Fixed Routes	3 Fixed Routes
Days/Hours of Operation	Monday-Saturday, 6:00 AM-5:30 PM	Monday-Saturday 6:00AM - 5:30PM (Trolley Tues-Sat 9-5, Sunday 1-5; Closed Jan., Feb., and March - available for charters during closed months)	Monday-Saturday 7:00 AM - 6:00 PM; Hourly Service on Monday-Friday, Two-hour service on Saturday	Monday-Friday 8:00 AM - 4:30 PM
Fare**	\$0.50, \$0.25 cents for seniors and students, free for children age 6 and under. \$1.00 for demand response.	\$1.00 each way (\$2.00 each way para-transit service) (\$0.50 trolley service, \$0.25 for elderly, disabled, and students)	\$0.60 for Ashland routes; \$0.70 for Cattlesburg routes	Children under 6 ride free. Age 7-11 \$1.00 each way. Over age 12 \$2.00 each way. Paratransit \$2.00 each way.
Start Date	1957	1973	1974	1993
<b>2003 Statistics***</b>				
Peak Vehicles Operated	5	6	7	7
Total Passengers	113,619	312,000	100,000	30,500
Total Miles	193,045	187,200	210,313	NA
Total Hours	10,592	22,464	13,508	14,025
Total Expenses	\$673,988	\$1,000,000	\$670,000	NA
Passengers/Hour	10.73	13.89	7.40	NA
Cost/Passenger	\$5.93	\$3.21	\$6.70	NA
Cost/Hour	\$63.63	\$44.52	\$49.60	NA
Farebox Revenues	\$36,000	73,000	\$50,000	NA
Other Revenues		40,000	\$20,000	NA
Other Revenue Sources	-	Advertising on buses and incidental charters.	Mostly trade to radios for advertisement which translates into about \$20,000/year (see above).	NA
Total Revenues	\$36,000	\$113,000	\$70,000	NA
Farebox Recovery Ratio	5.3%	7.3%	7.5%	NA

\* Current operating conditions obtained from individual websites and telephone interviews.

\*\* ADA Paratransit service is twice the cost of traditional service for any fixed route.

\*\*\* 2003 Statistics for the rural systems provided by the Kentucky Transportation Cabinet Office of Transportation Delivery. 2003 Statistics for the small urban systems estimated by system operators.

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## CHAPTER 6: SUMMARY OF NEEDS AND SERVICE CONCEPTS

This section summarizes the transit needs for the Radcliff-Elizabethtown-Vine Grove area, based on the community involvement effort as well as the analysis of demographic characteristics.

In addition, this section presents discussion on the various types of transit services that can be offered in small urban areas including the characteristics of the service areas in which each type of service is most appropriate. The intent of this section is to set the stage for specific transit alternatives for the study area.

### 6.1 SUMMARY OF TRANSIT NEEDS

The following points are given as a synopsis of the input received through contacts with local officials, employers, other local stakeholders, the results of the public survey, and information from the demographic analysis.

- The highest population concentrations are within the Radcliff-Elizabethtown urbanized area as shown in **Exhibit 2-3**. The majority of these residential concentrations are in Elizabethtown and Radcliff.
- Because persons over the age of 65 are more likely to use transit than persons under this age, the Over Age 65 Population Density was calculated to identify if there are any areas of concentration of older persons in Hardin County. As shown in **Exhibit 2-4**, the areas of highest concentrations are primarily in Elizabethtown. To a lesser extent, there are concentrations of this demographic in Radcliff and Vine Grove.
- Minority population concentrations were identified in **Exhibit 2-5** to locate potential transit markets. The areas with the highest concentrations of minority population are in and around Radcliff.
- Female persons are more likely to use transit than male persons. **Exhibit 2-6** shows that the areas of highest concentrations of females are located in the city of Radcliff.
- Low-income household concentrations in the Radcliff-Elizabethtown-Vine Grove area are illustrated graphically in **Exhibit 2-7** by Census Block Group. Several concentrations of low-income households were identified in and around Elizabethtown and Radcliff.
- Ridership density was calculated for each Census block group in Hardin County. Relatively high ridership density concentrations exist within the urbanized area boundary. As shown in **Exhibit 2-10**, two (2) areas in Elizabethtown and one in Radcliff stand out as having the highest ridership densities of all, that is, over 31 persons potentially using transit per square mile on an average daily basis.
- A number of potential transit trip generators and attractors were identified for this study. Fort Knox is the most significant trip generator and attractor in the study area. The majority of attractors are in Elizabethtown. The majority of other generators are located in Elizabethtown and Radcliff. Most of the major generators seem to fall along or in close proximity to US 31W.

- Although many area residents currently drive their own car, most feel that public transportation services are needed and would be used, based on survey responses.
- Public transportation survey respondents indicated that they would use transit for a variety of trip purposes, most notably shopping, medical, and work trips. Most respondents from both surveys expressed the need for transportation services for either every day of the week or several days of the week.
- Survey respondents realize that a fare is among the important elements of providing a transit service. In fact, 33% of community survey respondents indicated a willingness to pay \$1.00 - \$1.99 per one way trip. This fare range received more support than any other range suggested on the community survey.
- Local officials agree that public transportation would be beneficial to the area and are eager to see the results of this public transportation study. However, if a significant need for public transportation were demonstrated, it would have to compete for funding with the many other significant needs in the area.
- As the final report was being prepared for the study, the U.S. Department of Defense's Base Realignment and Closure (BRAC) Commission announced a mission realignment for Ft. Knox. As part of this realignment, a large number of additional permanent personnel will be assigned to the base, which could result in a greater need for public transit in the area, particularly for access to Ft. Knox. This is discussed in greater detail in **Chapter 7**.
- Also, as the final report was being prepared for this study, gasoline prices rose dramatically, which could influence driving habits and increase the need for transportation alternatives in the study area.

## **6.2 POTENTIAL TYPES OF TRANSIT SERVICES**

Three basic options for service delivery are available:

- Fixed-route service;
- Demand-response services; and
- Hybrid services, which have some characteristics of demand-response services and some characteristics of fixed-route service.

Specific characteristics of each of these services can vary widely within these categories, particularly with regard to hybrid services. Much flexibility is available to design a transit service to meet a community's specific needs. The characteristics of each of these types of services are defined in more detail below.

### **6.2.1 Fixed-Route Service**

For a fixed-route service<sup>1</sup>, the transit vehicle travels a pre-established route. Passengers are picked up or dropped off at pre-designated locations along the route. This is the type of

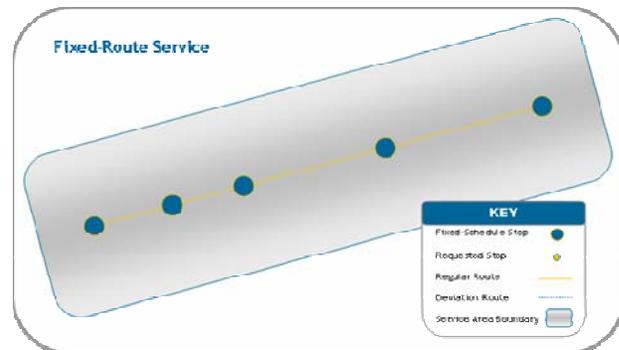
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<sup>1</sup> As defined by the Transit Cooperative Research Program (TCRP) in "TCRP Report 6: Users' Manual for Assessing Service-Delivery Systems for Rural Passenger Transportation", p. 14.

service typically found in transit systems in urban areas, e.g., the service provided in Louisville by the Transit Authority of River City (TARC).

Fixed-route services work well under the following conditions:

- The area is densely settled;
- The demand for trips is high;
- Trips are generally destined to one particular area (like a downtown area); or
- Travel patterns are similar on a day-to-day basis.



Fixed-route services do not work well under these conditions:

- The service area has a low population density; or
- Trip patterns are not very predictable (TCRP, p. 32).

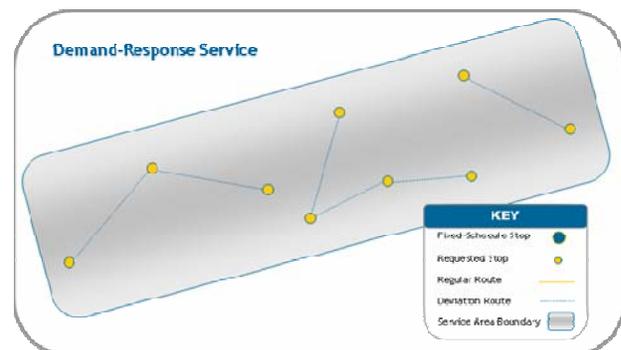
If fixed-route service is provided, Federal requirements mandate that a complementary paratransit service must be provided to serve eligible HSTD users within  $\frac{3}{4}$  mile of the route.

## 6.2.2 Demand-Response Service

For a demand-response service, the service is provided to all origins and destinations within a defined service area. Service is not provided outside the service area. The vehicle travels a flexible route between the origin and destination points to serve specific customer requests for doorstep pickup and delivery (TCRP, p. 14).

Demand-response services work well under the following conditions:

- Origins and destinations are variable and do not necessarily fit any pre-established patterns; and
- Demand densities are relatively low (TCRP, p. 35).

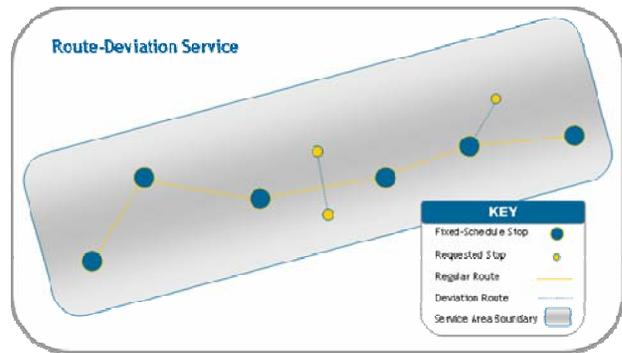


However, due to the more personalized service, demand-response services travel more miles, take more time, and therefore cost more to operate on a per-passenger basis than fixed-route services.

## 6.2.3 Hybrid Services

These services exhibit some characteristics of fixed-route services and some characteristics of demand-response services. There are generally two kinds of hybrid services, route-deviation service and point-deviation service.

Route-deviation service: In route-deviation service, buses travel along a prescribed route at scheduled times and maintain scheduled checkpoint stops. Nonscheduled stops will be accommodated within the deviations. The bus may leave and return to the route to pick up requests for demand-responsive trips near the route. Passengers may call in advance for route deviation, or may access the system at predetermined route stops. The limited geographic area where the bus may travel off the route is known as the route deviation corridor (TCRP, p. 17).



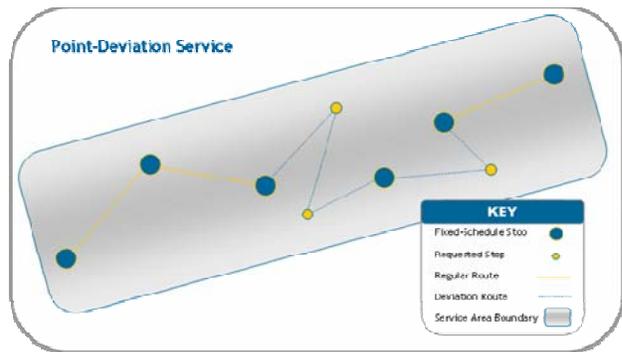
Route-deviation services work well under the following conditions:

- The deviations are a relatively small part of the overall demand and the overall running time of the route;
- The majority of the riders are not highly time-sensitive;
- Door-to-door service is important to some but not all passengers; or
- There are other positive reasons for providing services that are more like fixed-route than demand-responsive options.

Route-deviation services typically do not work well under the following conditions:

- Most of the trips are time sensitive; and
- Some sort of basic route structure is not desirable for the community (TCRP, p. 33).

Point-deviation service: Under point-deviation service, a vehicle stops at specified checkpoints (shopping centers, industrial parks, etc.) at specified times, but travels a flexible route between these points to serve specific customer requests for doorstep pickup or delivery. Whereas route deviation service still has a basic route to guide service, point deviation service has specified time points, but no specific route to follow.



While point-deviation services share many of the same advantages and disadvantages of route-deviation services, point-deviation services are more like demand-responsive operations. Route-deviation service would be preferred where passengers would be waiting along the route to be picked up without advance notice to the system, and point-deviation would be preferred when a service needs to be more highly responsive to changing or variable demands.

Point-deviation services may be preferable to route-deviation services in rural areas because the routes between checkpoints can be flexible, allowing the driver more routing options for maintaining the schedule, and requests for service can be negotiated or deferred so that the schedule is maintained (TCRP, p. 34).

## CHAPTER 7: RECOMMENDATIONS

This section discusses the general concepts that were developed to enhance public transportation services in the Radcliff-Elizabethtown urbanized area.

As noted in Chapter 1, at the conclusion of the study process, circumstances within the community were undergoing a change, potentially resulting in a more favorable climate for transit service:

- First, an announcement was made that the mission of Ft. Knox was changing, resulting in a large increase in the number of assigned personnel.
- Second, gas prices increased dramatically, thereby increasing transportation costs for area residents.

While the main portion of the study was undertaken prior to these events, some additional discussion has been included in the report to recognize these changes.

### 7.1 PUBLIC TRANSPORTATION CONCEPTS

Using the study findings and the input from PTAT, five (5) public transportation concepts were developed in February 2005 for the Radcliff-Elizabethtown-Vine Grove area. They are as follows:

- Demand-response service within the urban area;
- Fixed-route service along US-31W between Elizabethtown and Radcliff;
- Flex-route (hybrid) service along US-31W between Elizabethtown and Radcliff;
- Flex-route (hybrid) service along US-31W between Elizabethtown and Radcliff along with demand-response service in Elizabethtown and the Radcliff-Vine Grove area; and
- Fixed-route service along US-31W between Elizabethtown and Radcliff and east-west fixed-route service in both the Elizabethtown and the Radcliff-Vine Grove areas.

Based on local input, service to Fort Knox was considered along with each of the above transit concepts.

### 7.2 PRELIMINARY PUBLIC TRANSPORTATION ALTERNATIVES

The project team and the PTAT decided to move forward the following three (3) service concepts for further consideration:

- Demand-response service within the urban area;
- Flex-route (hybrid) service along US-31W between Elizabethtown and Radcliff; and
- Fixed-route service along US-31W between Elizabethtown and Radcliff and east-west fixed-route service in both the Elizabethtown and the Radcliff-Vine Grove areas.

It was decided that service to Fort Knox, as an addition to any alternative, should also move forward for further consideration.

These alternatives were presented for review and comment to the public, as Alternatives 1, 2, and 3 respectively, at the April 19, 2005 public meeting. The events of this meeting are detailed in **Chapter 3**.

### **7.3 EVALUATION OF ALTERNATIVES**

Alternatives 1, 2, and 3 were also evaluated, as shown in **Exhibit 7-1**, using, among other criteria, the goals established as part of this study and listed in **Chapter 4**. It should be noted that service to Fort Knox was included in the evaluation of alternatives.

As shown in **Exhibit 7-1**, relative to other transit alternatives, Alternative 1 benefits included:

- Has the greatest potential to enhance mobility;
- Is expected to have the lowest capital cost;
- Is the most flexible service; and
- Should be the simplest to implement.

Disadvantages of Alternative 1 are as follows:

- Is expected to be the least cost-effective service (considering operating costs and potential ridership);
- Is expected to have the lowest number of boardings per day;
- Offers the least capacity;
- Is the slowest in regard to response time and travel time; and
- Received no support at the April 19, 2005 public meeting.

Relative to the other transit alternatives, Alternative 2 is a highly visible service which:

- Has “High/Excellent” potential to promote economic development;
- Is expected to require the lowest capital investment; and
- Is expected to be a cost-effective system.

Alternative 2 did not perform relatively well with regard to:

- Its potential to enhance mobility; and
- The ease of implementation expected.

Alternative 3 was evaluated and found to be the most desirable of the three (3) transit alternatives evaluated. Relatively, this is a cost-effective service with:

- “High/Excellent” potential to promote economic development;
- The highest expected boardings per day;
- The greatest capacity; and
- The shortest response time and travel time.

Alternative 3 also received the most public support at the April 19, 2005 public meeting.

This alternative received “low/fair” for only one of the criteria used in the alternatives evaluation, since Alternative 3 is expected to require the greatest initial capital investment.

Exhibit 7-1: Evaluation of Public Transportation Concepts<sup>1</sup>

Criteria	Alternative 1 Demand-Response	Alternative 2 Flex-Route	Alternative 3 Fixed-Route
Enhance <u>mobility</u> options for populations with the highest levels of need, including transportation disadvantaged, such as, elderly, disabled, and low-income citizens.	Service is available to entire urbanized area.	Service along fixed route and within flexible service area.	Service along fixed route and ADA service within 3/4 mile.
Provide <u>convenient, customer-oriented service</u> to origins and destinations with the greatest demonstrated need, such as service for the transportation-disadvantaged to medical facilities, educational institutions, community services, and shopping areas.	Serves all origins and destinations in the urbanized area with advanced reservation.	Route will be established close to important origins and destinations.	Route will be established close to important origins and destinations.
Promote <u>economic development</u> through transit services to support tourism, commercial interests, and other identified local business needs, including the provision of an <u>effective employment transportation</u> option for local residents.	Good for service to a variety of commercial interests and local businesses for all persons living in the urbanized area. Not ideal for tourists or work trips.	Ideal for service to commercial interests and local businesses for persons living in the service area. Has some potential to serve tourists and work trips.	Ideal for service to commercial interests and local businesses for persons living in the service area. Has some potential to serve tourists and work trips.
Capital Cost	\$240,000	\$330,000	\$420,000
Operating Cost	\$287,232	\$261,120	\$359,040
Develop a <u>cost-effective</u> system that makes efficient use of financial resources. (Operating Costs/Potential Rider)	\$18	\$4	\$4
Build <u>community support</u> by using transit to add value to the community.	Adds value to the community. Least visible as a community service.	Adds value to the community. Highly visible as a community service.	Adds value to the community. Highly visible as a community service.
Ridership (potential boardings per day)	64	240	320
Flexibility	Service is flexible.	Service is somewhat flexible.	Route is inflexible, but ADA paratransit service is available for those with the greatest need.
Capacity	Capacity is limited by smaller vehicles, longer distances traveled, and reservation requirement.	Larger buses and frequent service result in a higher capacity than Alternative 1.	Additional ADA service in addition to larger buses and frequent service result in a higher capacity than Alternative 1 and 2.
Public Support	Received no support at April 19, 2005 public meeting.	Received little support at April 19, 2005 public meeting.	Received most support at April 19, 2005 public meeting.
Responsiveness (Response Time and Travel Time)	Requires advance notice, additional mileage and time for trip, and waiting time for vehicle to arrive and return.	Requires advance notice and extra time for deviated trips, and waiting time for vehicle to arrive and return. Also has designated stops at specific times.	Will dependably arrive at designated stops at specific times, with no waiting, and will have set travel times with no deviations.
Implementation	Easily implemented by TACK: add-on to existing service.	Additional efforts required for start-up.	Additional efforts required for start-up, but could be separated into phases.

Rating Scale:

High/Excellent
Med/Good
Low/Fair

- 1) *Operating and Capital Cost were calculated based on the following assumptions:*
  - a. *Each service alternative would operate hourly service Monday – Friday (8am – 5pm), 255 days/year.*
  - b. *Service to Fort Knox (half-hour frequency) is included in Alternative 2 and 3.*
  - c. *Alternative 1 would require four (4) relatively small “demand-response type” buses. Alternative 2 would require three (3) 40-foot buses and one (1) small bus to serve Fort Knox. Alternative 3 would require four (4) 40-foot buses and one small bus to serve Fort Knox.*
  - d. *The operating cost estimates for Alternatives 1 and 3 include 10% of the total for charges incurred by TACK for ADA paratransit service.*
  - e. *Operating cost = \$32/bus hour*
  - f. *Demand response bus = \$60,000 each*
  - g. *Fixed and/or flexible-route bus = \$90,000 each*

## **7.4 RECOMMENDED ALTERNATIVE**

Alternative 3 is the recommended alternative because it best serves the needs of the community in the most cost-effective fashion. Alternative 3 includes the fixed-route service along US-31W and east-west fixed-route service in Elizabethtown and in the Radcliff-Vine Grove area, along with service to Fort Knox. It is also recommended that TACK operate the recommended transit alternative, as explained further in **Section 7.5**.

Furthermore, it was decided that the recommended service alternative should be implemented in phases, as detailed in the following sub-sections, and listed below:

- Phase 1 – Fixed-route service along US-31W between Elizabethtown and Radcliff;
- Phase 2 – East-West fixed-route service in Elizabethtown and the Radcliff-Vine Grove area; and
- Phase 3 – Service to and within Fort Knox.

The recommended alternative, shown by phase in **Exhibit 7-2**, was approved by the Public Transportation Advisory Team on May 11, 2005, and by the MPO Policy Committee on May 27, 2005.

### **7.4.1 Recommended Alternative – Phase 1: US 31W Corridor**

Recommendations for Phase 1 are detailed below.

#### Description:

- One fixed-route along US 31W, between Elizabethtown and Radcliff, as shown on **Exhibit 7-2**.
- Designated bus stops would be used. “Flag stops” are generally not recommended for picking up passengers due to potential safety issues. However, drivers may be allowed to pick up or discharge passengers at non-designated stops along the route, if the request can be safely accommodated.
- No deviations from the fixed route would be permitted, to enable a high level of schedule adherence. Passengers who can not be accommodated by the fixed-route service can be served by a complementary paratransit service.
- Complementary paratransit service would be provided in accordance with the Americans with Disabilities Act (ADA). This service would be provided using TACK’s existing lift-equipped vans. The service would be available during the same hours of operation as the fixed-route service.

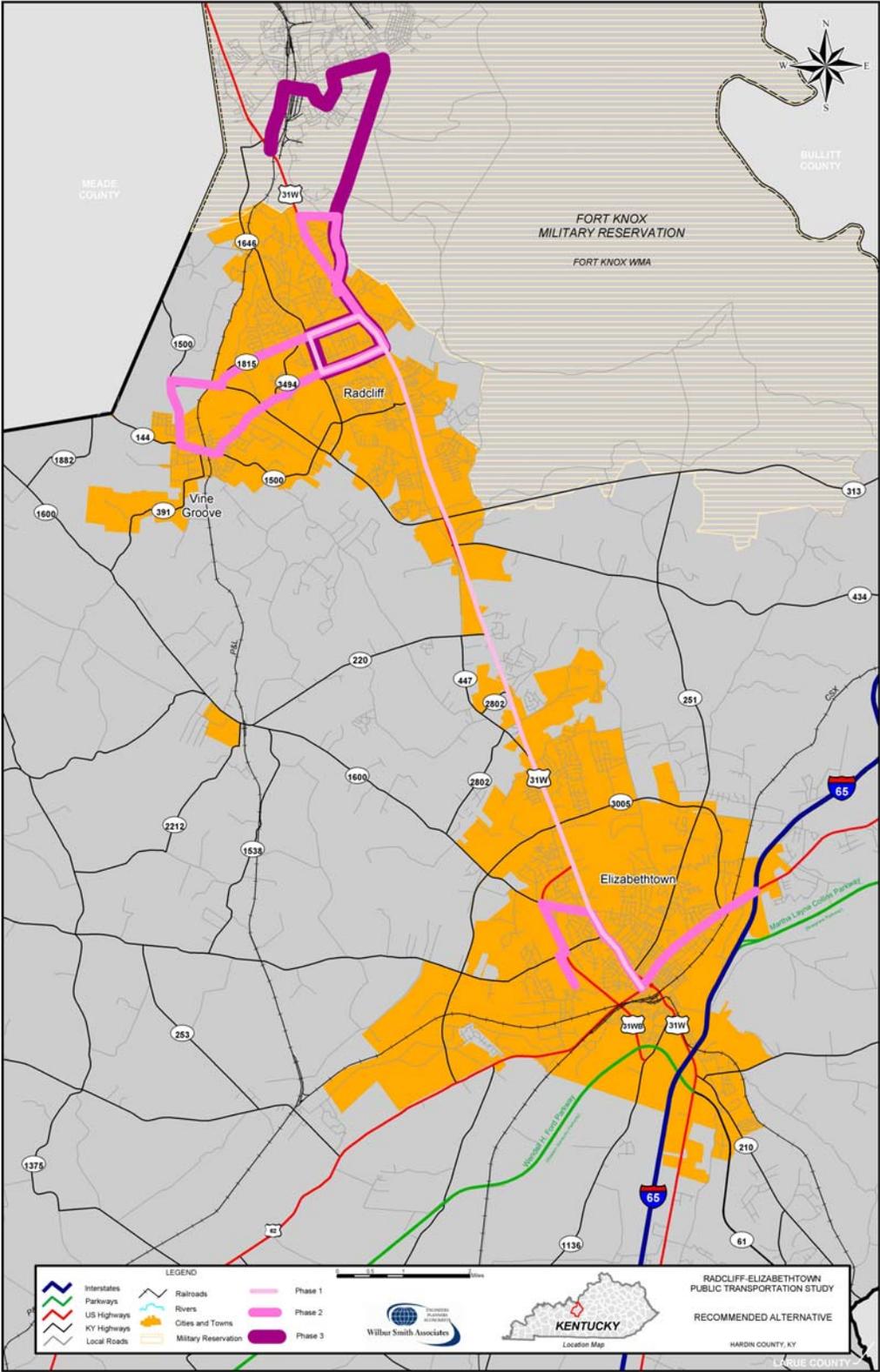
#### Days / Hours of Operation:

- Service would initially be provided Monday – Friday only. Saturday service could be added later as warranted by demand.
- Weekday service would operate from 7:00 AM until 6:00 PM. Additional service hours could be added later as warranted by demand.

#### Frequency of Service:

- Service would operate on a one-hour frequency, except between 9:00 AM and 3:00 PM, during which it would operate on a two-hour frequency.

Exhibit 7-2: Recommended Alternative by Phase



Vehicle Requirements:

- The service would require two (2) buses.

Fare Structure:

- A base fare of \$1.00 is recommended for the fixed-route service. This fare is in line with that of peer systems and is passenger-friendly.
- A fare of \$2.00 is recommended for ADA paratransit service. The higher fare is representative of the more personalized level of service. ADA regulations allow a fare of up to two times that of the fixed-route fare.
- Federal regulations require that half-fare be offered to the elderly (65 and over) during off-peak times. It is recommended that half-fare be provided to the elderly and to children (18 or younger) with a valid ID at all times for the sake of simplicity and good customer relations.

Annual Operating Cost and Funding Sources:

Annual operating costs for Alternative 1, Phase 1, are estimated to be **\$148,500** [\$135,000 plus \$13,500 (10%) for paratransit service]. This figure includes costs for driver salaries, fuel, maintenance, insurance, etc.

The likely funding scenario involves a combination of fare revenues, along with Federal and local government assistance.

- Federal funding: Federal Transit Administration (FTA) Section 5307 monies are available to cover up to 50% of the operating cost, less farebox revenue. Under this scenario, **\$66,825** of Section 5307 money would be utilized.
- Local funding: The remaining costs, **\$66,825**, would be the responsibility of local sources. This could include farebox revenues, direct support from participating local governments, advertising on the vehicles, charter bus operations, financial support from key destination businesses, etc. The use of Medicaid funds may also be eligible to provide part of the local matching requirement. This option should be explored with the KYTC if this is considered feasible by the operator. However, TACK currently uses its Medicaid funding to match other programs, so it may not be feasible in this case.
- Fare and other revenues: Fare receipts and other revenues (i.e., advertising, charters) are estimated to be a maximum of 10% of the operating cost, or up to **\$14,850**.

Capital Cost and Funding Sources:

Initial capital costs to purchase buses for Alternative 1, Phase 1, are estimated to be **\$180,000**. Approximately 150 "Bus Stop" signs should also be purchased when exact stop locations are determined. Such signs will cost approximately **\$9,000** (\$60 each). Total initial capital cost is estimated to be **\$189,000**.

Federal, and local government funds would be used to pay for the capital costs of this alternative.

- Federal funding: FTA Section 5307 monies are available to cover 80% of capital expenses, or **\$151,200**.
- The remaining 20% of the capital costs (**\$37,800**) must come from local sources. There could be state funds for half of this amount, i.e., 10% of the capital cost. It may also be possible that toll credits could be used to fund the entire 20% match. State participation and the use of toll credits would require negotiations with the KYTC.

Transit Stops:

As funding becomes available, consideration should be given to providing comfortable, clean, accessible, and conveniently located transit stops. Adequate signage, lighting, sheltered seating, trash receptacles, and bicycle parking are desirable features that should also be considered. Bus shelters cost approximately \$15,000 each. A typical bench with trash receptacles costs approximately \$2500.

#### 7.4.2 Recommended Alternative – Phase 2: Radcliff and Elizabethtown

East-west fixed-routes in Elizabethtown and the Radcliff-Vine Grove area, as shown on **Exhibit 7-2** make up Phase 2 of the recommended alternative.

The following routing is suggested for the Elizabethtown service:

- From Bookstore on Elizabethtown Community & Technical College (center of campus)
- North on University
- Right on St. John's Road
- Left on Westport Road
- Right on Cardinal to Woodland
- Right on US 31 W
- Left on Mulberry (US 62)
- Right on Commerce Drive
- Left on Executive Drive
- Left on Mulberry
- Continue on same route

The following routing is suggested for the Radcliff-Vine Grove service:

- From US 31 W Northbound
- Right on Knox Boulevard
- Right on Wilson Road
- Left on Elm Road
- Right on US 31 W
- Right on Lincoln Trail (KY 1815)
- Right on Joe Prather Highway (KY 313)
- Left on Knox Boulevard
- Left on Main (KY 144)
- Left on Highland (KY 144)
- Continue on Vine (KY 144)
- Left on US 31 W
- Continue to Knox Boulevard

Detailed logistics for this phase should be developed at the time of implementation. The bi-hourly service from 9:00 am to 3:00 pm recommended for Phase 1 would not be desirable for this type of local service; therefore, hourly service is recommended for the entirety of Phase 2. The annual operating cost for hourly service for both routes from 7:00 AM to 6:00

PM would be approximately **\$198,000** (including 10% for paratransit service). This service would require two (2) new buses, an initial capital investment of approximately **\$180,000**.

“Bus Stop” signs should also be purchased when exact stop locations are determined. As funding becomes available, consideration should also be given to providing comfortable, clean, accessible, and conveniently located transit stops.

### **7.4.3 Recommended Alternative – Phase 3: Ft. Knox**

Service to Fort Knox is recommended as phase 3 of the recommended alternative. The following routing is suggested:

- Enter at Wilson Road Gate
- Wilson Road to Ireland Army Hospital
- From Hospital take Spearhead Division Avenue to Gold Vault Road
- Gold Vault Road to PX/Commissary
- From PX/Commissary area, take Binter Court to Maxwell Street
- Maxwell Street to Engineer Street
- Engineer St. to Park Road
- Park Road to Bullion Boulevard
- Exit at Bullion Boulevard Gate

Detailed logistics should be developed at the time of implementation. The bi-hourly service from 9:00 am to 3:00 pm recommended for Phase 1 would not be desirable for this type of local service; therefore, as with phase 2, hourly service is recommended for the entirety of Phase 3. The annual operating cost for hourly service of this phase between 7:00 AM and 6:00 PM would be approximately **\$99,000** (including 10% for paratransit service). This requires one new bus, an initial capital investment of approximately **\$90,000**.

“Bus Stop” signs should be purchased when exact stop locations are determined. As funding becomes available, consideration should also be given to providing comfortable, clean, accessible, and conveniently located transit stops.

As the final report was being prepared for the study, the U.S. Department of Defense’s Base Realignment and Closure (BRAC) Commission announced a mission realignment for Ft. Knox. As part of this realignment, the U.S. Army Armor School would be reassigned to join the Infantry School at Fort Benning, Georgia, as part of a new Army Maneuver Center there. The Armor Center would be replaced at Ft. Knox by the 84th Army Reserve Regional Training Center, moving from Fort McCoy, Wisconsin, and by engineer, military police, and combat-service-support units relocating from Europe and Korea under the Integrated Global Presence and Basing Strategy realignments. The commission approved moving “engineer, military police and combat service support units from Europe and Korea”, including soldiers from Korea and Germany.

The BRAC 2005 also resulted in relocation of the U.S. Army Cadet Command to Fort Knox, along with the Army’s Human Resources Command (moving from facilities in Alexandria, Virginia; Indianapolis, Indiana; and St. Louis, Missouri). In addition, The U.S. Army Reserve’s 100th Division (IT) would move from nearby Louisville onto Fort Knox as part of DoD’s BRAC recommendations. These realignments are expected to result in significant

increases in population in the area, with estimates of over 6,000 permanent new Ft. Knox personnel.

At the same time, gas prices have taken a dramatic increase within the past several months, resulting in increased transportation costs for commuters and other drivers. This price increase, the influx of new personnel to Ft. Knox, and the increase of households in the region could cause increased demand for another transportation alternative, especially since no public transportation is currently available to accommodate. This could be especially true for those who are traveling to and from Ft. Knox.

Therefore, consideration should be given to a re-evaluation of the results of this study, particularly for Ft. Knox, and perhaps including a continuing effort to define local public transit needs based on these new factors.

#### 7.4.4 Total Cost Alternative 1 (Phase 1, 2, and 3)

**Exhibit 7-3** below summarizes the cost and potential funding by phase for the recommended public transportation alternative.

**Exhibit 7-3: Recommended Alternative Cost/Potential Funding**

		Annual Operating Costs	Initial Capital Investment	Total
Phase 1	Total Cost	\$148,500	\$189,000	\$337,500
	Potential Federal Funding (Section 5307)	\$66,825	\$151,200	\$218,025
	Potential State Funding	\$0	\$0*	\$0*
	Necessary Local Funding	\$66,825	\$37,800	\$104,625
	Potential Fare Revenues (10% of operating costs)	\$14,850	NA	\$14,850
Phase 2	Total Cost	\$198,000	\$180,000	\$378,000
	Potential Federal Funding (Section 5307)	\$89,100	\$144,000	\$233,100
	Potential State Funding	\$0	\$0*	\$0*
	Necessary Local Funding	\$89,100	\$36,000	\$125,100
	Potential Fare Revenues (10% of operating costs)	\$19,800	NA	\$19,800
Phase 3	Total Cost	\$99,000	\$90,000	\$189,000
	Potential Federal Funding (Section 5307)	\$44,550	\$72,000	\$116,550
	Potential State Funding	\$0	\$0*	\$0*
	Necessary Local Funding	\$44,550	\$18,000	\$62,550
	Potential Fare Revenues (10% of operating costs)	\$9,900	NA	\$9,900
Total Cost (All Phases)		\$445,500	\$459,000	\$904,500

\* There could be state funds for as much as the entire local requirement for capital costs (20% of total capital costs).

#### 7.4.5 Benefits of the Recommended Transit Alternative

##### *Demographic Groups*

The propensity analysis, presented in **Chapter 2**, detailed population groups that will benefit most from public transit in the Radcliff-Elizabethtown urbanized area. The major transit users in the U.S. and the expected major beneficiaries of the service in the area are:

- Households without an auto available;

- Persons with mobility limitations;
- Persons with work disabilities;
- Minority residents;
- Low-income households; and
- Workers over age 65.

**Exhibit 7-4** shows the size of each of these groups and their percentage of the total population, as shown in the 2000 Census.

**Exhibit 7-4: Demographic Groups in Hardin County**

Group	Hardin County		R-E Urban Area	
Population	94,174	100%	64,504	100%
Mobility limitations	5,038	5.3%	3,468	5.4%
Work disabilities	6,874	7.3%	4,545	7.0%
Minorities	18,389	19.5%	17,569	27.2%
Households	34,497	100%	23,765	100%
No autos	2,227	6.5%	1,798	7.6%
Low income	5,246	15.2%	3,787	16.0%
Workers over age 65	1818	1.9%	653	1.0%

Census data indicates that 15% of the county's households and 16% of the urbanized households had an income of \$15,000 or less. Also, 20% of the county population and 27% of the urbanized area population are members of a minority group. These are the largest two groups that could benefit from public transit service.

Other major beneficiaries are the 5% of the population with mobility limitations, the 7% with work disabilities, and the 7 to 8% of the households without an auto available. While the percentages of these groups are smaller, the totals of these population groups still represent several thousand individuals that could benefit.

### ***Financial Benefits***

While a full benefit/cost analysis is beyond the scope of this study, some benefits can be calculated based upon national trends. The sources for the driving cost data for this analysis are the Victoria Transport Policy Institute and American Automobile Association (AAA) 2005 data.

For the proposed Radcliff-Elizabethtown area service, the potential number of daily riders is projected to be 320 for the recommend alternative (all phases). At the national average trip length of 9.87 miles for all trip purposes, and assuming 255 days of service per year (which allows for holidays), a total of 805,392 miles of travel would be saved on an annual basis over what would have occurred if everyone drove alone. The total costs of each mile is estimated to be \$0.975 per mile, or \$785,000 annually, taking into consideration the auto ownership costs and the external costs of pollution, parking spaces, accidents, and congestion. This amount is the dollar savings that would be realized to the individual traveler and the broader community.

Offsetting these savings is the cost of providing the transit service. The proposed service is projected to require 572 miles of service per day, or 145,860 miles of service over the 255

service days. The operating cost of this service is estimated to be \$3.034 per mile, when considering the same cost categories for a larger vehicle. Total operating costs to the community for providing this service (Alternative 3, phases 1, 2, and 3) is estimated to be \$445,500 annually.

The net savings to the community (based on operating costs) is the \$445,500 cost less the \$785,000 in savings, for a net benefit of \$339,500. The higher cost per mile for transit service is more than outweighed by the fewer miles of service that is required to carry the same number of people. Therefore, for every \$1 of total operating cost invested in public transit service, the community receives a benefit of \$1.76.

## **7.5 TRANSIT ORGANIZATIONAL & ADMINISTRATIVE RECOMMENDATIONS**

### **7.5.1 Operating Authority**

To legally operate a for-hire city bus service in Kentucky, there are generally three (3) options:

- A public transportation provider can apply directly to the Division of Motor Carriers, Department of Vehicle Regulation, Kentucky Transportation Cabinet, to operate as a common carrier to provide for-hire city bus service to the general public. This is the most common process used by city bus systems in Kentucky. This option requires that the service be along a specific route and on a specific schedule. However, no person shall apply for or obtain any such franchise or authorization without the approval of the Department of Vehicle Regulation. After application is made, a notice is sent to other transportation providers in the area and a public notice is issued that application has been made. If requested by any party within 20 days after the notice is issued, a hearing will be conducted in accordance with KRS.281.625, after which the KYTC Department of Vehicle Regulation will render its finding.
- All Kentucky cities are vested with the power to sell franchises or grant authorizations for the operation of city buses over their streets and highways. This method is not commonly used. In urban areas, under this option, the transit provider may operate a city bus under a franchise granted by the city or with the authorization of the city, in accordance with Kentucky Revised Statute (KRS) 281.635. In this case, the city would apply to the Department of Vehicle Regulation, to operate a bus system and would pass the authority and funding to a transportation provider to actually operate the system. However, no person shall apply for or obtain any such franchise or authorization without the approval of the Department of Vehicle Regulation. After application is made, a notice is sent to other transportation providers in the area and a public notice is issued that application has been made. If requested by any party within 20 days after the notice is issued, a hearing will be conducted in accordance with KRS.281.625, after which the KYTC Department of Vehicle Regulation will render its finding.
- A local government, either alone or jointly with another public body, can form a Transit Authority to oversee the transit operation, in accordance with KRS 96A.020. A Transit Authority can then apply for the authority to operate its own transit service and/or contract with others to provide all or part of the service. This is the most common process used for larger cities, i.e., Louisville, Lexington, and Northern Kentucky.

The first option is recommended – that is, for TACK to seek common carrier operating status – since TACK does not currently have the operating authority to provide for-hire city bus service to the general public in the urbanized area. To get operating authority, TACK would contact KYTC’s Department of Vehicle Regulation to acquire the proper forms, then complete the forms and submit the application for operating authority as a for-hire common carrier. This service may be considered as competition with the local taxi operator, or there may be other interested parties who have concerns about the service, so these parties may request a hearing. Therefore, a formal hearing may be needed before a ruling can be made by the KYTC Department of Vehicle Regulation regarding the granting of operating authority.

Future Actions: In the future, the cities in the MPO area may want to periodically re-evaluate their situation to determine if they wish to establish a local transit authority, or even explore the possibility of becoming part of the Transit Authority of River City (TARC), which is authorized to serve the Louisville Metro area and adjacent counties. One primary advantage of a transit authority is that it can request a vote by the general public for an increase in tax revenues that would be dedicated to providing transit service.

### **7.5.2 Funding Eligibility**

To receive normal capital, operating, and planning funds for the urbanized area, a city must submit an application to the Office of Transportation Delivery, Kentucky Transportation Cabinet (KYTC). In that application, specific information must be provided and requirements met to be eligible to receive funds.

The KYTC receives and distributes funds from the Federal Transit Administration (FTA) of the U.S. Department of Transportation, as well as funds from the State General Fund. The majority of funding comes from the FTA. In some cases, the KYTC provides some or all of the non-federal match for programs or specific projects, subject to negotiation between the applicant and the KYTC.

The FTA administers a number of programs offering financial support for urban public transportation, as follows:

**Section 5303:** Metropolitan Planning Program - These funds come to the State on the basis of urbanized area population and are dedicated to support the transportation planning process in urbanized areas over 50,000 population. They must be matched with non-federal funds on an 80 % federal and 20% non-federal basis.

**Section 5307:** Urbanized Area Formula Program - These funds come to the State on the basis of population and population densities to support public transit activities in urbanized areas with populations between 50,000 and 200,000. They go directly to areas over 200,000 population. Transit systems may use up to 10% of these funds to pay for some of their ADA paratransit costs on an 80% federal and 20% non-federal basis. In urbanized areas with populations greater than 200,000, at least 1 percent of these funds must be set aside for transit enhancement activities. In areas under 200,000 population, the funding can be used to support operating deficit. Funds used in this manner must be matched by non-federal funds (other than passenger revenues) on a dollar-for-dollar basis. The remainder can be used to fund capital improvements (including preventative maintenance activities), generally on a 50% federal-50% non-federal basis, or planning activities on an 80% federal and 20% non-federal basis.

**Section 5309:** Capital Investment Grants and Loans Program - These funds are available to the State based on a highly competitive evaluation program and/or Congressional earmarks. They may be used only for transit capital improvements based on a maximum split of 80% federal-20% non-federal, but most major projects require a 50% non-State match.

**Section 5310:** Transportation for Elderly Persons and Persons with Disabilities - These funds come to the State on the basis of the number of persons who are elderly or have disabilities. The funds may be used to support the cost of transit operations (contracted operations for 5310) with a 50% non-federal match, or these funds are allowed to fund capital improvements on an 80% federal/20% non-federal basis.

**Section 3037:** Job Access Reverse Commute Program (JARC) - JARC funds are available on a competitive basis. These funds may be used to provide transportation services in urban, suburban, and rural areas to assist welfare recipients and low income individuals with access to employment opportunities and to increase collaboration among the transportation providers, human services agencies, employers, metropolitan planning organizations (MPOs), and affected communities and individuals. A 50% non-federal match is required for this program.

Since the application and eligibility requirements are subject to change at any time, the city and carrier should contact and maintain communication with the Office of Transportation Delivery, Kentucky Transportation Cabinet, regarding those requirements.

### 7.5.3 Marketing

A critical element of the overall implementation plan for the public transportation service should be the marketing program.

Marketing of the new services must begin well before the first day of operation. Grass-roots support from the community is needed to get residents excited about the new service:

- PTAT members and others who have assisted in this project can play a vital role in this effort by making information available in their agencies/businesses (through flyers, pamphlets, etc.) and by speaking with potential users about the services.
- Advertisements in the local newspapers and speaking engagements with community groups would be quite beneficial.
- Having transit vehicles on display at community events (even before the service begins) would further aid in informing the community about the coming services.
- Promotion should also be targeted at those most likely to use the service by providing information materials at appropriate locations, e.g., senior citizens homes, the Health Department, etc.

It is also critically important that the new service have its own identity, separate from that of TACK's rural service. A unique branding (e.g., name and logo) will help to increase visibility and awareness of the new service.

## **7.6 OTHER RECOMMENDATIONS**

### **7.6.1 Long-Distance Commuter Transit Services**

From community surveys and discussions with some attendees at the public meetings, one major destination was identified that is not addressed in this study, i.e., the Louisville Metro area.

A quick review of the Bureau of Census 2000 Journey-to-Work data shows that most Hardin County residents (80%) worked within the county at that time. However, of those who commuted to work outside the county, approximately 5,350 (12%) commuted to jobs in the Louisville Metro (Jefferson County) area. The next highest major job destinations included Meade County (about 660, or 1.5%) and Bullitt County (about 550, or 1.2%).

To help relieve congestion, improve air quality, and provide an opportunity to long-distance commuters to reduce their travel costs, other commuter options may be needed. Such options may be more attractive to commuters now due to the continued rising price of fuel.

Therefore, it is recommended that the Radcliff-Elizabethtown MPO work with TARC; KIPDA, the Louisville MPO; and KYTC to explore commuter programs or options that could be customized to serve the Radcliff-Elizabethtown MPO area, particularly to jobs in the Louisville SMSA, such as:

- Commuter buses;
- A ridesharing program for carpools/vanpools; and/or
- More park-and-ride locations, as the need arises.

### **7.6.2 Further Study**

As indicated in Section 7.4.3, some major new factors may result in a reconsideration of the immediacy of the need for public transit in the area, including:

- The mission change for Ft. Knox, which will result in a large influx of personnel to the area, and
- A dramatic increase in gasoline prices, which could affect the need for transportation alternatives to the single-occupancy automobile.

Therefore, additional study would appear to be warranted at this time to examine the impacts of these changes on the demand and priorities for public transportation. Of special importance will be the exploration of a quick start-up for transit service to Ft. Knox and potential funding options through the BRAC or other Department of Defense programs.

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## APPENDIX: ACKNOWLEDGEMENTS AND CONTACTS

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- Additional information regarding the Radcliff-Elizabethtown Public Transportation Study can be obtained from Mike Skaggs, LTADD, at the following address:

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