

Chapter 2 Existing Conditions

This chapter provides a “snapshot” of current conditions that relate to transportation in Boone County. Understanding the current status of the county’s transportation system provides a basis for developing the future transportation plan.

CHALLENGES

As Boone County moves into the 21st Century, there are many challenges to be faced in order to sustain the recent growth and maintain a high quality of life. Preserving mobility and enhancing the safety of the transportation system are paramount. Specific issues that must be addressed include:

- Boone County’s interstate system is one of the busiest in all of Kentucky. Interstates 71, 75 and 275 serve passenger auto and freight travel at the local, regional and national levels. An incident on one of the interstates can and often does affect the entire transportation system.
- Interchanges provide critical interface points between Boone County’s local streets/roads and the region, yet these locations are where the heaviest congestion occurs. To ensure continued prosperity in the county, actions must be taken to improve operations and reduce congestion at interchanges with I-71/75 and I-275.
- The continued expansion of the Cincinnati/Northern Kentucky International Airport has constrained travel in northeast Boone County. Every effort must be made to improve mobility in this area, concurrent with future airport expansion and improvements.

- Boone County’s road network serves a large amount of travel between Boone and other counties, particularly Kenton. A regional perspective must be considered when developing a long-range transportation plan for the county.
- KY 18 (Burlington Pike) historically has been the lifeline for Burlington, the county seat, connecting it to I-71/75 and the rest of the Cincinnati/Northern Kentucky region. Efforts must be taken to preserve this connectivity and enhance mobility through this corridor.
- Many of the current problem areas are the result of land use decisions that have increased traffic. The land use-transportation relationship must be integrated into the development of the long range transportation plan.

ROADWAY NETWORK

Roadway Pattern

A map of the roadway network is presented in **Exhibit 2-1**. Interstate 71/75 and Interstate 275 form the “spine” of the highway network in Boone County. US 25 (Dixie Highway) and US 42 provide parallel north-south alternatives in the I-71/75 corridor, though these routes do not have the capacity of the interstate system. KY 237 (Camp Ernst Road/North Bend Road) facilitates north-south movement in the central portion of the county. Other state routes – KY 14, KY 18, KY 20, KY 338, and KY 536 provide east-west connectivity from central and western Boone County to the interstate. KY 18 is the main arterial that connects Burlington, the County seat, to I-71/75.

Boone County Transportation Plan

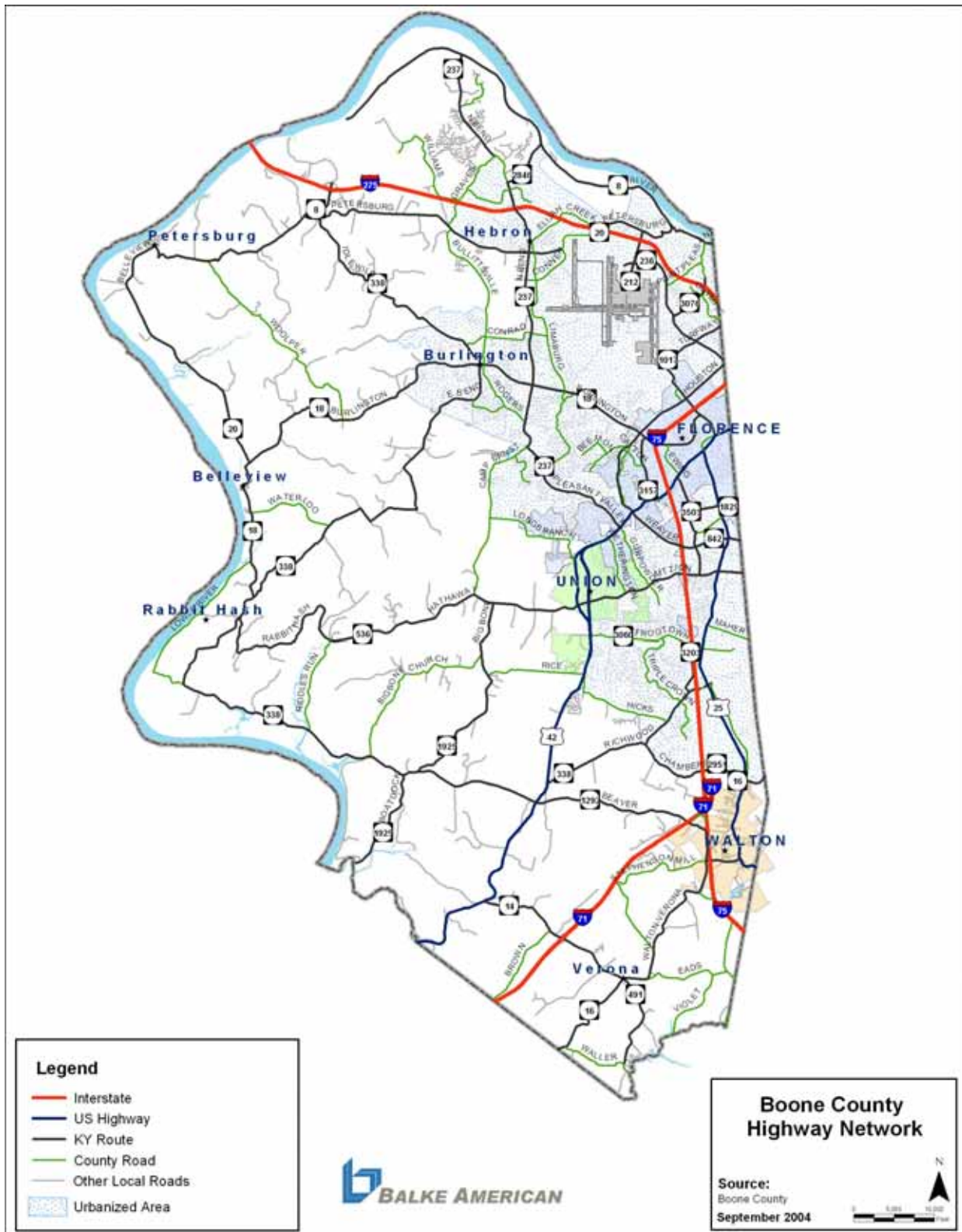


Exhibit 2-1. Boone County Highway Network

Boone County Transportation Plan

Interstate 275 provides east-west mobility across the northern portion of the county and serves as a major link to Northern Kentucky, Cincinnati, and southeast Indiana. It provides access to the Cincinnati/Northern Kentucky International Airport, several industrial parks, and residential areas in northern Boone County.

Interstate 71 traverses the southern edge of the county. It joins I-75 just north of Walton and runs concurrently with I-75 northward, through Florence, into Kenton County. I-71 connects Louisville with Cincinnati. In Boone County, its only point of access before it joins with I-75 is the interchange with KY 14 near Verona.

Local streets and roads are concentrated in the eastern portion of the county and primarily fill in the areas between state routes. Some local roads like Gunpowder Road, Conrad Lane, Bullittsville Road and Rogers Lane serve as important connectors between state routes.

Study Area Network

The study area network – those streets and roads considered to be most important in the development of a long range transportation plan – is shown in **Exhibit 2-2**. This includes the interstates, US highways, all State-maintained routes, plus those county roads considered to be critical to overall mobility in Boone County. With the exception of the interstates, US 42 and a few of the state routes, the majority of the roads in the study area network are two-lane roads.

Functional Classification

Functional classification is the grouping of roads, streets and highways into integrated systems ranked by their importance to the general welfare, motorist and land-use structure. It is used to define the role that any particular road should play in providing mobility for through movements and access

to adjoining land. This grouping acknowledges that roads have different levels of importance and provides a basis for comparing roads fairly.

Functional classification can be used for, but is not limited to, the following purposes:

- Provide a framework for highways serving mobility and connecting regions and cities within a state.
- Provide a basis for assigning jurisdictional responsibility according to the overall importance of a road.
- Provide a basis for development of minimum design standards according to function.
- Provide a basis for evaluating present and future needs.

Provide a basis for allocation of limited financial resources.

The following functional classes are defined:

Arterials provide mobility. They typically carry high traffic volumes on a continuous network with no stub routes but should provide very little direct land access. Interstates and parkways are included in the arterial category.

Collectors provide both mobility and land access. They gather trips from localized areas and feed them onto the arterial network.

Local streets and roads provide land access. They are lower volume facilities that provide direct land access but are not designed to serve through traffic needs.

Boone County Transportation Plan

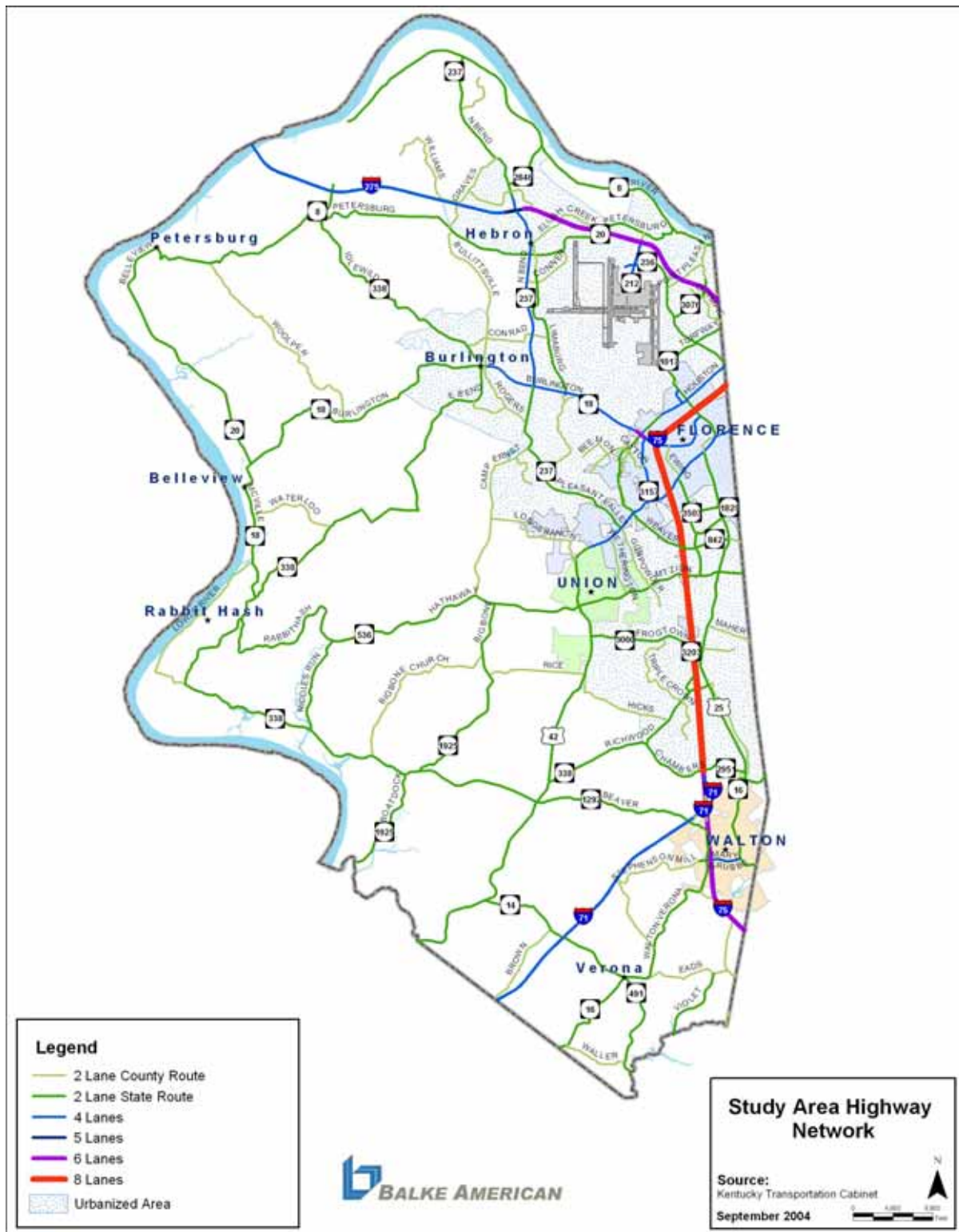


Exhibit 2-2. Study Area Highway Network

Boone County Transportation Plan

Functional class categories also are stratified according to the urban or rural land uses they serve. For clarity, urban areas are subdivided into two categories – urban and small urban. *Urban* areas are those having a population greater than 50,000. *Small urban* areas have a population between 50,000 and 5,000. *Rural* classifications apply to areas with a population less than 5,000.

Urban functional classifications are:

Urban Principal Arterials focus on mobility by serving trips through urban areas and long distance trips between traffic generators within an urban area.

Urban Minor Arterials focus on mobility but serve shorter trips between traffic generators within urban areas.

Urban Collectors focus on mobility and land access by serving both intra-urban and local trips that take travelers to arterials.

Local Streets focus on land access rather than through trips and include all other public roads.

Rural functional classifications are:

Rural Principal Arterials focus on statewide and interstate mobility and typically include the Interstate System and other rural freeways that serve longer distance high-volume corridors.

Rural Minor Arterials also focus on mobility but typically link smaller cities and towns and other statewide traffic generators, such as resorts, that are not served by principal arterials.

Rural Major Collectors link county seats and communities not served by arterials but have an intra-county rather than statewide focus.

Rural Minor Collectors collect traffic from local roads and smaller communities.

Local Roads focus on land access and relatively short trips and include all other public roads.

Guidelines for determining functional classification can be found in *23 CFR 470.105, Highway Functional Classification Concepts, Criteria, and Procedures*.

The tradeoff between mobility and access for the different functional classes is illustrated in **Exhibit 2-3**. Interstates, which are part of the Arterial functional class, provide the highest level of mobility and no direct access to abutting land. At the other end of the scale, local streets and roads provide primarily access, with little or no mobility over intermediate or long distances.

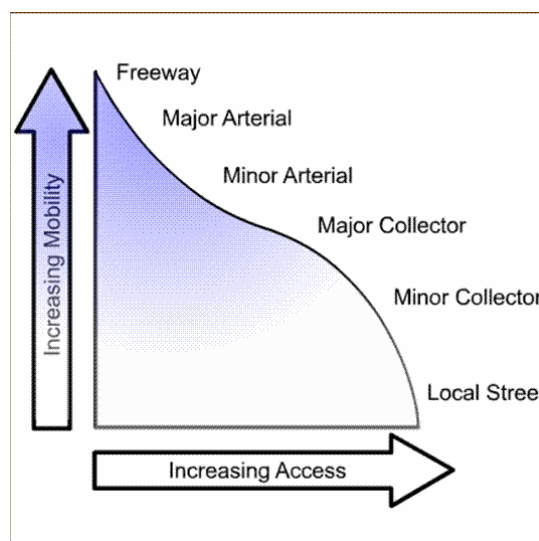


Exhibit 2-3. Mobility vs. Access

The functional classification system for the Boone County Transportation Study network is shown in **Exhibit 2-4**. This system updates the functional classification scheme that was developed as part of the 1995 Boone County Comprehensive Plan Update and is consistent with the designated functional classifications for roads under the jurisdiction of the Kentucky Transportation Cabinet.

Boone County Transportation Plan

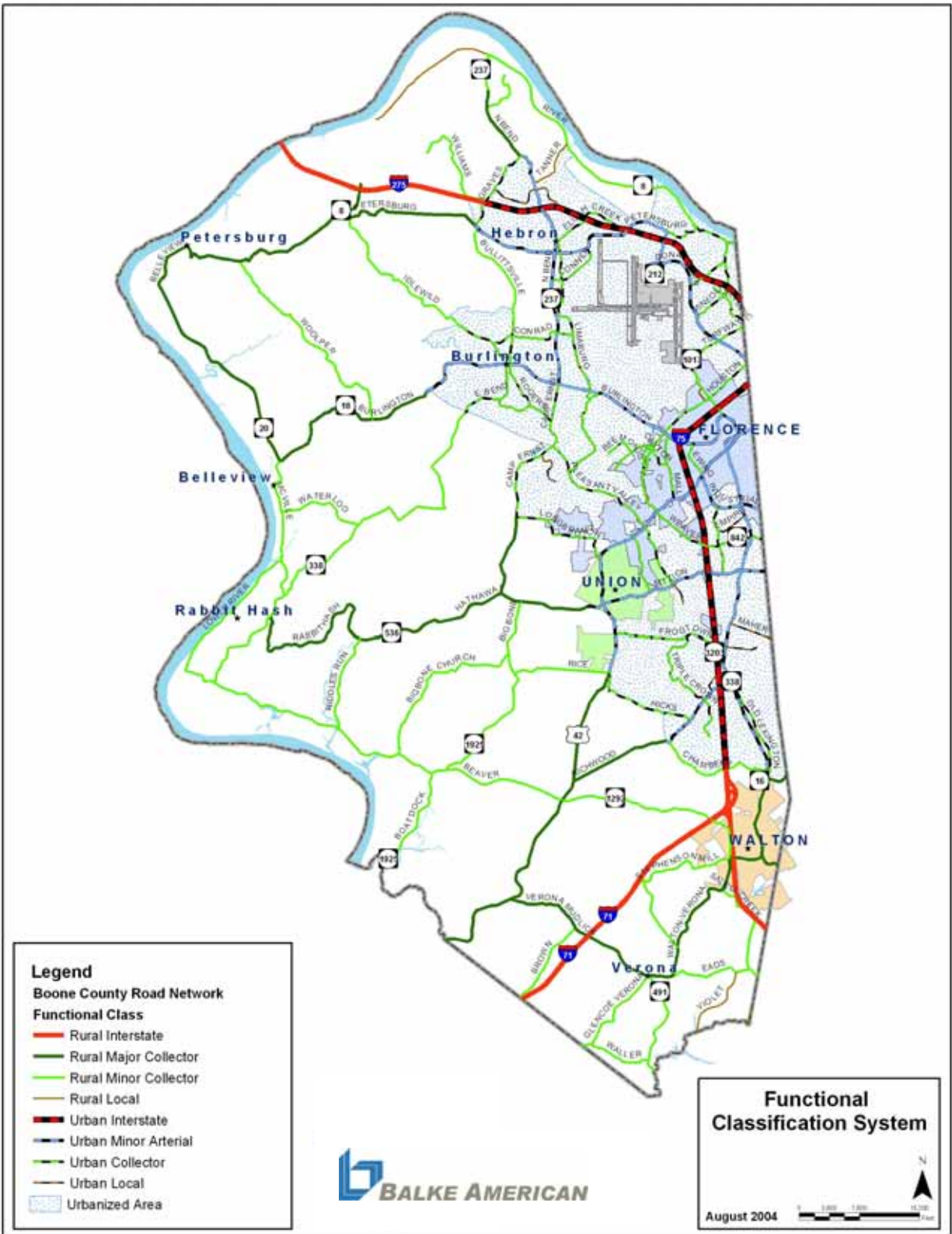


Exhibit 2-4. Functional Classification System

TRAFFIC CONDITIONS

Existing traffic conditions were evaluated to provide an overall snapshot of the demand on the Boone County roadway system and its current ability to meet that demand.

Daily Traffic Volumes

Twenty-four-hour traffic counts for roads in the study area network were obtained from two sources. For all roads maintained by the Kentucky Transportation Cabinet – interstates and highways with ‘US’ and ‘KY’ designations – average daily traffic figures were obtained from the Cabinet’s Highway Information System. The Cabinet has an extensive traffic count program and updates this information regularly. All traffic counts obtained were taken in 2001 or later.

Boone County has supplemented this information by performing counts on its own roads. All of these counts were collected in 2004.

Level of Service

Levels of service were determined for all of the roads in the study area network. Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.¹ Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver’s perception of those conditions. Safety is not

directly included in the measures that are used to determine level of service, although there is a correlation between safety and LOS.

Methods for determining LOS vary according to facility type and the facility types do not directly correspond to functional class. Service measures vary as well. For freeways and multilane highways, density – the number of equivalent passenger cars per lane per mile – is used to determine level of service. For arterials, the measure is average travel speed. Two-lane highways use a combination of measures – average travel speed and the percent time vehicles in a platoon or bunch spend following a slower vehicle, unable to pass.

LOS methods include input for a number of parameters – number of lanes, lane width, free flow speed, demand (traffic volume), percentage of heavy vehicles in the traffic stream, type and location of traffic signals, type of terrain, and many others. For the Boone County Transportation Study, a planning application of LOS was used. A planning application uses the same procedures, but with default values and simplifying assumptions. The intent of this planning application is to answer the fundamental question: Does a street or road have sufficient through-lane capacity to serve the current or projected demand?

Daily traffic volumes and levels of service for the transportation study area network are shown in **Exhibit 2-5**. Levels of service are for peak hour conditions, though 24-hour traffic volumes are shown. One of the assumptions of this planning application is the proportion of 24-hour traffic that occurs during peak hours. For different facility types, these were estimated based on an analysis of 24-hour traffic counts obtained from both the Kentucky Transportation Cabinet and Boone County.

¹ Highway Capacity Manual, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Boone County Transportation Plan

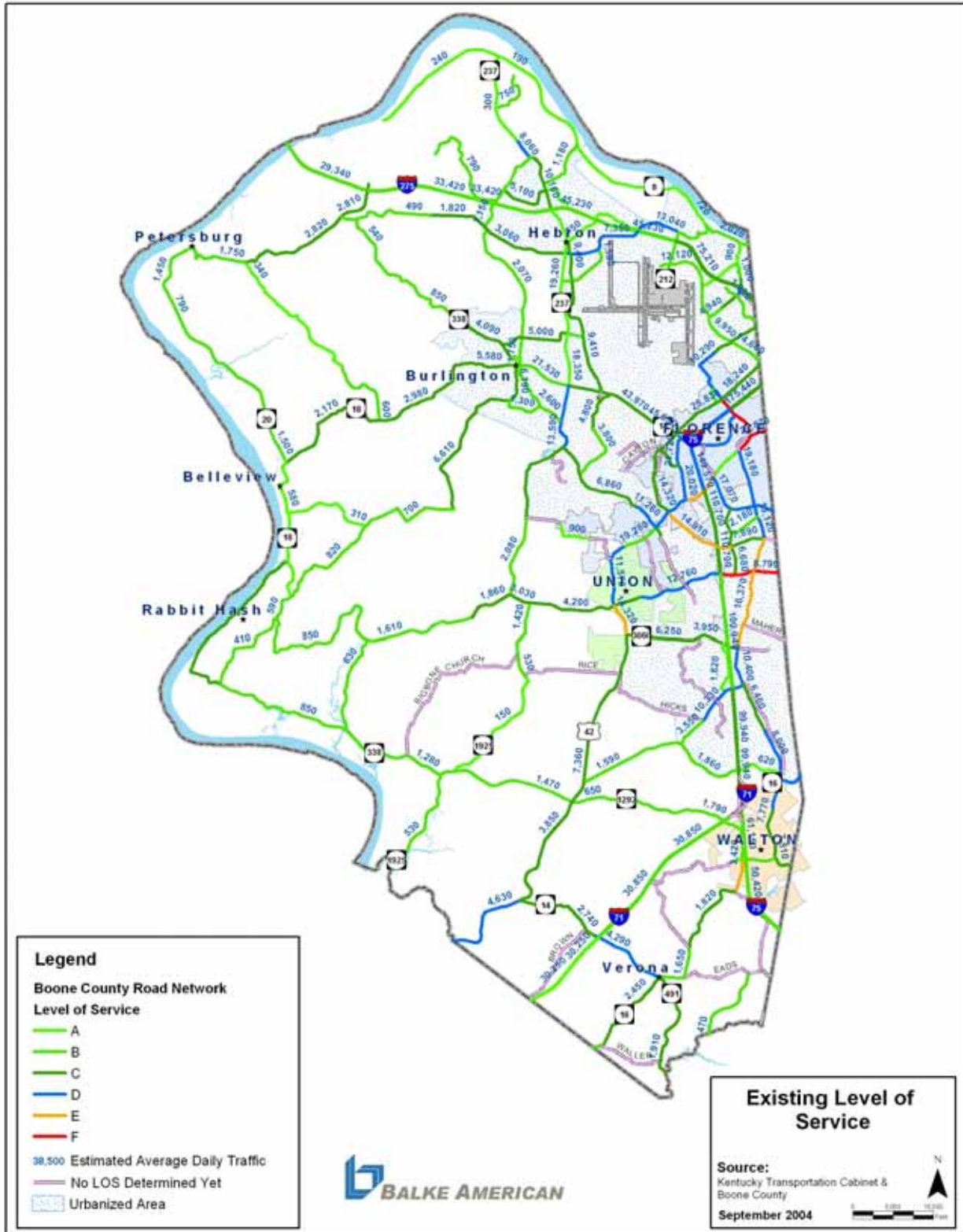


Exhibit 2-5. Existing Levels of Service

As seen in Exhibit 2-5, locations that experience significant regular peak hour traffic congestion include I-71/75, Turfway Road, Dixie Highway, US 42, Burlington Pike east of Houston Road, Hopeful Church Road, and KY 563 Mt. Zion Road, east of I-71/75. The I-71/75-KY 338 (Richwood Road) interchange also is quite congested due to a large proportion of trucks, but this small section does not show up at the broad level planning analysis.

Tabular results of the LOS analysis for interstate sections are presented in **Exhibit 2-6** and for arterials in **Exhibit 2-7**. For two-lane roads, the LOS analysis results are shown in **Exhibit 2-8**. Projected levels of service, based on forecasted travel demand and anticipated network improvements, will be determined later in this study.

CRASH ANALYSIS

An analysis of crash records was performed for the three-year period from January 1, 2001 through December 31, 2003. Computer summaries of reported crashes in Boone County were obtained from the Kentucky Transportation Cabinet².

A total of 13,452 crashes were reported on Boone County streets and roads during the three-year period. Of those, 9,453 occurred on State-maintained roads – interstates and routes having ‘US’ or ‘KY’ designations. The remaining 3,999 either were located on local streets and roads or could not be located from the database.

There were 2,521 injury crashes during the period resulting in a total of 3,544 reported injuries. There were 36 fatal crashes resulting in a total of 45 fatalities. A map of the fatal crash locations is shown in **Exhibit 2-9**.

The crash data were analyzed to identify locations having potential safety problems with respect to crash history. Crash rates were developed for roadway sections and “spots” (i.e. intersections or short segments 0.3 miles in length or less).

Crash rate normalizes the frequency (number) of crashes with respect to the amount of traffic. In other words, higher-volume roadways typically experience higher numbers of crashes and calculation of a crash rate allows for an equitable comparison. Crash rate is expressed in terms of *annual crashes per 100 million vehicle-miles of travel for roadway segments* and *annual crashes per 100 million vehicles for intersections or spots*.

In developing its Annual Highway Safety Plan, the Kentucky Transportation Cabinet uses the Critical Crash Rate measure to identify locations having abnormally high crash experience. Critical Crash Rate is calculated by the following formula:

$$C_c = C_a + K(\text{sqrt}(C_a/M)) + 1/(2M), \text{ in which}$$

C_c = critical crash rate

C_a = average crash rate

sqrt = square root

K = constant related to level of statistical significance (a probability of 0.995 is used wherein $K = 2.576$)

M = exposure (for segments, M is in terms of 100 vehicle-miles (“100 MVM”); for spots, M is in terms of 100 million vehicles)

The average crash rate is computed on a statewide basis for similar facility types³. This allows for the comparison of crash experience for different roads based on type (functional classification), traffic volume and number of lanes.

² Data obtained from the Kentucky Traffic Safety Data Service, Kentucky Transportation Cabinet, Division of Traffic Operations.

³ *Analysis of Traffic Crash Data in Kentucky (1998 – 2003)*, Research Report KTC-03-28/KSP2-02-1F, Kentucky Transportation Center, University of Kentucky, Lexington, Kentucky, September 2003.

Exhibit 2-6. Existing Level of Service Analysis - Interstates

Facility	Segment Descriptions				Freeway Characteristics				Traffic Characteristics				
	From	MP	To	MP	Length (mi.)	Area Type	Posted Speed	No. Lanes	AADT	K	D	Pct. HV	Existing LOS
I-71	US 127 (Gallatin County)	62.065	KY 14 (Verona-Mudlick Rd.)	72.195	10.13	Rural	65	4	31,000	7.00%	53.0%	38	A
	KY 14 (Verona-Mudlick Rd.)	72.195	I-75	77.724	5.529	Transitioning/Urban	65	4	48,500	5.75%	53.0%		B
I-75	KY 491 (Grant County)	165.901	KY 14 (Walton-Verona Rd.)	171.448	5.547	Rural	65	6	50,422	7.00%	55.0%	22	B
	KY 14 (Walton-Verona Rd.)	171.448	I-71	172.680	1.232	Transitioning/Urban	65	6	61,149	7.00%	55.0%	22	B
	I-71	172.680	KY 338 (Richwood Rd.)	175.364	2.684	Suburban Urbanized	65	6	99,938	7.00%	55.0%	22	C
	KY 338 (Richwood Rd.)	175.364	KY 536 (Mt. Zion Rd.)	177.750	2.386	Suburban Urbanized	65	8	100,941	7.00%	55.0%	22	B
	KY 536 (Mt. Zion Rd.)	177.750	US 42	180.106	2.356	Suburban Urbanized	65	8	110,704	7.00%	55.0%	22	C
	US 42	180.106	KY 18 (Burlington Pike)	181.257	1.151	CBD Urbanized	55	8	149,572	7.00%	55.0%	22	C
	KY 18 (Burlington Pike)	181.257	KY 1017 (Turfway Rd.)	182.460	1.203	CBD Urbanized	55	8	143,173	7.00%	55.0%	22	C
	KY 1017 (Turfway Rd.)	182.460	KY 236 (Donaldson Rd.)	183.393	0.933	CBD Urbanized	55	8	175,437	7.00%	55.0%	22	D
I-275	I-75 (Kenton County)	0.000	KY 3076 (Mineola Pike)	1.993	1.993	Suburban Urbanized	65	6	81,400	8.20%	57.0%	11	C
	KY 3076 (Mineola Pike)	1.993	KY 212 Airport Entrance	4.133	2.14	Suburban Urbanized	65	6	75,200	8.20%	57.0%	18	C
	KY 212 Airport Entrance	4.133	KY 237 (North Bend Rd.)	7.138	3.005	Transitioning/Urban	65	6	45,500	8.20%	57.0%	15	B
	KY 237 (North Bend Rd.)	7.138	Idlewild Bypass	11.509	4.371	Rural	65	4	33,400	8.20%	57.0%	15	B
	Idlewild Bypass	11.509	Ohio River	13.562	2.053	Rural	65	4	29,300	8.20%	57.0%	15	B

KEY

- AAADT - Average Annual Daily Traffic
- K - Proportion of 24-Hour Traffic Occurring During the Peak Hour
- D - Directional Proportion During the Peak Hour
- Pct. HV - Percent Heavy Vehicles

Exhibit 2-7. Existing Level of Service Analysis - Arterials

SECTION			ROADWAY VARIABLES						TRAFFIC VARIABLES					
Route	Road Name	From	To	Length (miles)	Area Type	Posted Speed	# Thru Lanes	AADT	K (%)	D (%)	Pct. HV	Signals/Mile	LOS	
KY 18	Burlington Pike	Balleisville Road	KY 237 (North Bend Rd.)	1.334	Trans. Urban	35	4	21,329	7.85	55.7	5	0.75	B	
		KY 237 (North Bend Rd.)	KY 842 (Houston Rd./Hopetful Church Rd.)	2.819	Urban	55	4	43,050	7.49	55.7	8	2.13	C	
		KY 842 (Houston Rd./Hopetful Church Rd.)	Ewing Boulevard	0.724	Urban	45	4	34,859	8.25	50.4	8	5.52	E	
		Ewing Boulevard	KY 1017 (Turfway Rd.)	1.278	Urban	40	4	18,086	8.74	54.7	8	3.13	D	
KY 842	Houston Road	KY 18 (Burlington Pike)	KY 1017 (Turfway Rd.)	1.371	Urban	40	4	24,570	8.67	55	6	2.92	C	
		KY 1017 (Turfway Road)	KY 236 (Donaldson Rd.)	1.260	Urban	45	4	18,243	7.71	55	5	3.17	C	
KY 842	Hopetful Church Road	US 42	KY 18 (Burlington Pike)	2.192	Urban	40	2	15,155	8.92	55	5	0.91	C	
KY 3157	Mall Road	US 42	KY 18 (Burlington Pike)	1.520	Urban	35	4	20,877	8.77	55	5	3.29	D	
KY 238	Donaldson Road	KY 842 (Houston Rd.)	KY 1017 (Turfway Rd.)	3.451	Urban	35	2	14,664	7.56	55	4	0.58	B	
KY 212	Airport Road	KY 236 (Donaldson Rd.)	KY 20 (Petersburg Rd.)	1.012	Trans. Urban	45	4	24,249	7.14	60.4	4	0.99	B	
KY 1017	Turfway Road	US 25 (Main Street)	Thoroughbred/Turfway Access	1.739	Urban	45	2	25,478	7.55	55	5	3.45	F	
KY 1829	Industrial Road	US 42	Kenton County Line	1.930	Urban	45	2	15,903	7.28	55	13	0.52	D	
		Kenton County Line	Turffoot Road	1.103	Urban	55	2	14,929	7.36	55	13	0.91	B	
US 25	Dixie Highway	KY 1829 (Industrial Rd.)	Eastern Avenue (Kenton Co.)	2.219	Urban	35	2	18,958	8.15	55	14	2.70	F	
US 42	US 42	Longbranch Road	KY 237 (Pleasant Valley Rd.)	1.316	Trans. Urban	55	4	19,383	8.34	60.4	9	2.28	B	
		KY 237 (Pleasant Valley Rd.)	KY 3157 (Mall Rd.)	1.000	Urban	45	4	33,479	8.9	57.1	9	3.00	D	
		KY 3157 (Mall Rd.)	Ewing Blvd./Tanners Lane	0.941	Urban	40	4	36,331	8.02	56.9	12	6.38	E	
		Ewing Blvd./Tanners Lane	US 25 (Main Street)	0.857	Urban	40	4	18,680	7.95	55.1	9	1.17	A	
KY 538	Mt. Zion Road	Highland Drive	US 25 (Dixie Highway)	1.019	Urban	45	2	18,789	9.69	55	10	3.93	F	
KY 538	Richwood Road	US 25 (Dixie Highway)	KY 3203 (Frogtown Connector)	0.463	Urban	45	2	15,547	6.51	55	10	6.48	D	
KY 14	Mary Grubbs Highway	KY 14/KY 16 (Walton-Verona Rd.)	US 25 (Dixie Highway)	0.774	Trans. Urban	45	4	10,231	8.24	54.3	35	3.88	B	
KY 237	North Bend Road	KY 18 (Burlington Pike)	Worldwide Boulevard	4.762	Trans. Urban	55	4	18,987	8.49	57	8	1.68	A	

KEY

- AADT - Average Annual Daily Traffic
- K - Proportion of 24-Hour Traffic Occurring During the Peak Hour
- D - Directional Proportion During the Peak Hour
- Pct. HV - Percent Heavy Vehicles
- "Trans. Urban" = Transitioning/Urban

Boone County Transportation Plan

Exhibit 2-8. Existing Level of Service Analysis - Two-Lane Highways

Route	Segment	MP Start	MP End	Area Type	ADT	LOS
KY 1017 (Turfway Rd.)	KY 842 (Houston Rd.) to KY 3147 (O'Hara Rd.)	1.132	2.667	Transitioning/Urban	10,286	D
	KY 3147 (O'Hara Rd.) to KY 236 (Donaldson Rd.)	2.667	3.056	Transitioning/Urban	7,140	C
	KY 236 (Donaldson Rd.) to Kenton Co line	3.056	3.738	Transitioning/Urban	6,521	C
KY 1292 (Beaver Rd.)	US 42 to Mud Lick Creek Bridge	0.000	2.392	Rural Undeveloped	654	B
	Mud Lick Creek to I-71	2.392	3.708	Rural Developed	1,785	B
	I-71 to Walton Corporate Boundary	3.708	4.450	Transitioning/Urban	2,954	B
	Walton Corporate Boundary to KY 14	4.450	4.933	Transitioning/Urban	3,417	B
KY 14 (Verona-Mud Lick Rd.)	US 42 to I-71 Ramps	0.000	2.131	Rural Undeveloped	2,737	C
	I-71 Ramps to KY 16 (Walton-Verona Rd.)	2.131	3.982	Rural Undeveloped	4,288	D
	KY 16 (Walton-Verona Rd.) to Stephenson Mill Rd.	3.982	5.244	Rural Undeveloped	1,652	B
	Stephenson Mill Rd. to Salem Creek Rd.	5.244	7.273	Rural Undeveloped	1,824	C
	Salem Creek Rd. to KY 1292	7.273	8.056	Rural Developed	11,144	E
KY 1548 (Violet Rd.)	Kenton County Line to Eads Rd.	0.000	1.846	Rural Undeveloped	468	B
KY 16 (Walton-Nicholson Rd.)	Gallatin Co to KY 14/16 Junction	0.000	2.483	Rural Undeveloped	2,449	C
	US 25 to Kenton County Line	2.483	3.380	Rural Undeveloped	3,528	D
KY 18 (McVile Rd.)	KY 338 (East Bend Rd.) to KY 20 (Bellevue Rd.)	0.000	3.502	Rural Developed	582	A
KY 18 (Burlington Pike)	KY 20 (Bellevue Rd.) to Woolper Rd.	3.502	6.540	Rural Undeveloped	2,172	C
	Woolper Rd. to Vice Lane	6.540	7.250	Rural Undeveloped	2,563	C
	Vice Lane to Allen Fork Culvert	7.250	8.538	Rural Developed	2,981	C
	East of Woolper Rd. to KY 338 (Idlewild Rd.)	8.538	10.443	Transitioning/Urban	5,576	C
KY 1925 (Boat Dock Rd.)	Ryle Rd. to KY 338 (Beaver Rd.)	0.000	2.478	Rural Undeveloped	528	B
KY 1925 (Big Bone Rd.)	KY 338 (Beaver Rd.) to Rice Pike	2.478	5.659	Rural Undeveloped	153	A
	Rice Pike to Big Bone Church Rd.	5.659	6.187	Rural Undeveloped	533	B
	Big Bone Church Rd. to KY 536 (Hathaway Rd.)	6.187	7.488	Rural Undeveloped	1,416	B
KY 20 (Bellevue Rd.)	KY 18 (Burlington Pike) to Woolper Creek Bridge	0.000	2.802	Rural Undeveloped	1,500	B
	Woolper Creek Bridge to Aurora Ferry Rd.	2.802	5.360	Rural Undeveloped	786	B
	Aurora Ferry Rd. to 3rd Street	5.360	6.606	Rural Developed	1,453	B
KY 20 (Petersburg Rd.)	3rd Street to Woolper Rd.	6.606	8.151	Rural Developed	1,747	B
	Woolper Rd. to KY 8 (Idlewild Bypass)	8.151	10.873	Rural Undeveloped	2,822	C
	KY 8 (Idlewild Bypass) to KY 338 (Idlewild Rd.)	10.873	11.221	Rural Undeveloped	747	B
	KY 338 (Idlewild Rd.) to Corsoll Rd.	11.221	13.202	Rural Undeveloped	494	B
	Corsoll Rd. to Watts Lane	13.202	14.525	Rural Undeveloped	1,822	C
	Watts Lane to Bullock Lane	14.525	16.078	Rural Undeveloped	3,063	C
	Bullock Lane to KY 237 (North Bend Rd.)	16.078	16.620	Rural Developed	5,935	C
	KY 237 (North Bend Rd.) to I-275	16.620	18.486	Rural Developed	7,349	D
	I-275 to KY 212	18.486	19.584	Transitioning/Urban	13,035	D
	KY 212 to KY 8 (River Rd.)	19.584	20.596	Transitioning/Urban	1,731	B
KY 237 (Pleasant Valley Rd.)	US 42 to Valley View Dr.	0.000	0.665	Transitioning/Urban	11,260	D
	Valley View Dr. to Camp Ernst Rd.	0.665	3.114	Transitioning/Urban	6,864	C
KY 237 (Camp Ernst Rd.)	KY 237 (Pleasant Valley Rd.) to KY 18 (Burlington Pk.)	3.114	4.681	Transitioning/Urban	13,585	D
KY 237 (North Bend Rd.)	Graves Rd. to Sand Run Rd.	10.370	10.863	Rural Developed	8,061	D
	Sand Run Rd. to KY 8 (River Rd.)	10.863	13.383	Rural Undeveloped	300	A
KY 2846 (Tanner Rd.)	KY 237 (North Bend Rd.) to KY 8 (River Rd.)	0.000	1.328	Rural Undeveloped	1,183	B
KY 2852 (Riddles Run)	KY 338 (Beaver Rd.) to KY 536 (Hathaway Rd.)	0.000	2.337	Rural Undeveloped	629	B
KY 2951 (Chambers)	KY 338 (Richwood Rd.) to I-75	0.000	1.612	Rural Developed	1,857	B
	I-75 to US 25 (Dixie Highway)	1.612	2.790	Rural Developed	617	A
KY 3076 (Mineola)	I-275 to KY 1017 (Turfway Rd.)	1.095	1.237	Urbanized	8,833	C
KY 3168 (Limaburg)	KY 18 (Burlington Pike) to KY 237 (North Bend Rd.)	0.000	3.183	Transitioning/Urban	9,414	C
	KY 18 (Burlington Pike) to Oakbrook Rd.			Transitioning/Urban	5,490	C
KY 338 (Richwood Rd.)	I-75/I-71 to Hicks Pike	0.275	1.350	Transitioning/Urban	10,327	D
	Hicks Pike to KY 2951 (Chambers Rd.)	1.350	2.092	Transitioning/Urban	3,546	B
	KY 2951 (Chambers Rd.) to US 42/US 127	2.092	4.613	Transitioning/Urban	1,587	B
KY 338 (Beaver Rd.)	US 42 to KY 1925 (Big Bone Rd.)	4.613	7.961	Rural Undeveloped	1,473	B
	KY 1925 (Big Bone Rd.) to KY 2852 (Riddles Run Rd.)	7.961	10.643	Rural Undeveloped	1,279	B
	KY 2852 (Riddles Run Rd.) to Lower River Rd.	10.643	13.889	Rural Undeveloped	854	B

Boone County Transportation Plan

Exhibit 2-8 (cont.) Existing Level of Service Analysis - Two-Lane Highways

Route	Segment	MP Start	MP End	Area Type	ADT	LOS
KY 338 (East Bend Rd.)	Lower River Rd. to KY 536 (Rabbit Hash Rd.)	13.889	16.192	Rural Undeveloped	412	B
	KY 536 (Rabbit Hash Rd.) to KY 18 (McVille Rd.)	16.192	16.837	Rural Undeveloped	592	B
	KY 18 (McVille Rd.) to McVille-Waterloo Rd.	16.837	19.517	Rural Developed	818	B
	McVille-Waterloo Rd. to Howe Rd.	19.517	21.986	Rural Developed	695	B
	Howe Rd. to Elwood Ave.	21.986	26.000	Transitioning/Urban	6,612	C
	Elwood Ave. to KY 18 (Burlington Pike)	26.000	26.516	Transitioning/Urban	6,189	C
KY 338 (Idlewild Rd.)	KY 18 (Burlington Pike) to Easton Lane	26.516	28.095	Transitioning/Urban	4,089	C
	Easton Lane to RW Hawkins Rd.	28.095	29.623	Rural Undeveloped	851	B
	RW Hawkins Rd. to KY 20 (Petersburg Rd.)	29.623	32.228	Rural Undeveloped	543	B
KY 3503 (Sam Neace Dr.)	KY 536 (Mt. Zion Rd.) to KY 842 (Weaver Rd.)	0.000	0.693	Urbanized	6,678	C
	KY 842 (Weaver Rd.) to KY 2847 (Empire Dr.)	0.693	1.047	Urbanized	5,294	C
	KY 2847 (Empire Dr.) to KY 1829 (Industrial Rd.)	1.047	1.674	Urbanized	6,144	C
KY 491 (Lebanon-Crittenden Rd.)	Grant County Line to KY 14 (Walton-Verona Rd.)	0.000	2.638	Rural Undeveloped	1,908	C
KY 536 (Rabbit Hash Rd.)	KY 338 (East Bend Rd.) to Riddles Run Rd.	0.000	4.376	Rural Undeveloped	846	B
KY 536 (Hathaway Rd.)	Riddle Run Rd. to Camp Michael Rd.	4.376	6.695	Rural Undeveloped	1,613	B
	Camp Michael Rd. to Camp Ernst Rd.	6.695	8.137	Rural Undeveloped	1,861	C
	Camp Ernst Rd. to KY 1925 (Big Bone Rd.)	8.137	8.625	Rural Undeveloped	3,027	C
	KY 1925 (Big Bone Rd.) to US 42	8.625	10.678	Transitioning/Urban	4,198	C
KY 536 (Mt. Zion Rd.)	US 42 to Indian Hill Dr.	10.678	11.378	Transitioning/Urban	3,787	B
	Indian Hill Dr. to Highland Dr.	11.378	13.372	Transitioning/Urban	12,763	D
KY 8 (River Rd.)	State Maintenance to KY 237 (North Bend Rd.)	1.220	2.748	Rural Undeveloped	243	A
	KY 237 (North Bend Rd.) to KY 2846 (Tanner Rd.)	2.748	5.795	Rural Developed	192	A
	KY 2846 (Tanner Rd.) to KY 20 (Petersburg Rd.)	5.795	8.800	Rural Developed	643	B
	KY 20 (Petersburg Rd.) to Point Pleasant Rd.	8.800	9.678	Transitioning/Urban	719	A
	Point Pleasant Rd. to Kenton County Line	9.678	10.817	Transitioning/Urban	2,020	B
KY 842 (Weaver Rd.)	US 25 (Dixie Highway) to KY 3503 (Sam Neace Dr.)	0.000	0.802	Urbanized	7,894	C
	KY 3503 (Sam Neace Dr.) to Evergreen Dr.	0.802	2.300	Urbanized	14,908	E
	Evergreen Dr. to US 42	2.300	2.572	Urbanized	15,989	E
US 25 (Dixie Highway)	Church St. to Old Beaver Rd.	0.940	1.270	Rural Developed	7,391	D
	Old Beaver Rd. to Brookwood Dr.	1.270	1.991	Rural Developed	7,765	D
	Brookwood Dr to Kensington Rd	1.991	3.655	Rural Developed	8,002	D
	Kensington Rd. to KY 338 (Richwood Rd.)	3.655	4.859	Transitioning/Urban	6,457	C
	KY 338 (Richwood Rd.) to KY 3060 (Frogtown Rd.)	4.859	5.761	Transitioning/Urban	10,402	D
	KY 3060 (Frogtown Rd.) to KY 536 (Mt Zion Rd)	5.761	7.643	Transitioning/Urban	16,365	E
	KY 536 (Mt. Zion Rd.) to KY 842 (Weaver Rd.)	7.643	8.448	Transitioning/Urban	15,294	E
	KY 842 (Weaver Rd.) to KY 1829 (Industrial Rd.)	8.448	9.268	Transitioning/Urban	13,123	D
US 42	Gallatin County Line to KY 14 (Verona-Mud Lick Rd.)	0.000	2.215	Rural Undeveloped	4,628	D
	KY 14 (Verona-Mud Lick Rd.) to KY 338 (Beaver Rd.)	2.215	5.125	Rural Developed	3,852	C
	KY 338 (Beaver Rd.) to KY 3060 (Frogtown Rd)	5.125	9.378	Transitioning/Urban	7,355	C
	KY 3060 (Frogtown Rd) to KY 536 (Mt. Zion Rd.)	9.378	10.170	Transitioning/Urban	14,318	E
	KY 536 (Mt. Zion Rd.) to Longbranch Rd.	10.170	11.286	Transitioning/Urban	11,569	D
Coachtrail Dr.	East of KY 237 (North Bend Rd.)			Rural Undeveloped	750	B
Graves Rd.	North of KY 20 (Petersburg Rd.)			Transitioning/Urban	1,150	B
	South of KY 237 (North Bend Road)			Transitioning/Urban	1,400	B
Lower River Rd.	KY 338 (Beaver Rd.) to KY 18 (McVille Rd.)			Rural Undeveloped	2,200	C
Williams Rd.	West of Graves Rd.			Rural Undeveloped	790	B
Worldwide Blvd.	West of KY 237 (North Bend Rd.)			Transitioning/Urban	5,100	C
	East of Graves Rd.			Transitioning/Urban	870	A
Bullitsville Rd.	South of KY 20 (Petersburg Rd.)			Rural Developed	2,070	B
	Conrad Lane to KY 18 (Burlington Pike)			Rural Developed	1,751	B
Conner Rd.	KY 237 (North Bend Rd.) to KY 20 (Petersburg Rd.)			Transitioning/Urban	1,587	B
Elijah Creek Rd.	West of KY 20 (Petersburg Rd.)			Transitioning/Urban	752	A
Woolper Rd.	KY 20 (Petersburg Rd.) to KY 18 (Burlington Pike)			Rural Undeveloped	339	A
Point Pleasant Rd.	KY 236 (Donaldson Hwy.) to Mineola Pike			Transitioning/Urban	250	A

Boone County Transportation Plan

Exhibit 2-8 (cont.) Existing Level of Service Analysis - Two-Lane Highways

Route	Segment	MP Start	MP End	Area Type	ADT	LOS
Mineola Pike (KY 3076)	KY 236 (Donaldson Hwy.) to Jamike Ave.			Urbanized	4,942	C
	Jamike Ave. to Olympic Blvd.			Urbanized	8,739	C
	Olympic Blvd. to I-275 WB ramps			Urbanized	13,108	D
	I-275 WB ramps to Dolwick Dr.			Urbanized	8,833	C
	Dolwick Dr. to Point Pleasant Rd.			Urbanized	1,000	B
Olympic Rd.	Mineola Pike to Turfway Rd.			Urbanized	1,900	B
Conrad Lane	Bullitsville Rd. to KY 237 (North Bend Rd.)			Transitioning/Urban	5,000	C
	KY 237 (North Bend Rd.) to KY 3168 (Limaburg Rd.)			Transitioning/Urban	2,100	B
Rogers Lane	south of KY 18 (Burlington Pike)			Transitioning/Urban	2,600	B
Hanover Blvd.	KY 338 (East Bend Rd) to Rogers Lane			Transitioning/Urban	1,300	B
Oakbrook Rd.	north of KY 237 (Pleasant Valley Rd.)			Transitioning/Urban	3,800	B
	south of KY 18 (Burlington Pike)			Transitioning/Urban	4,800	C
Woolper Rd.	south of KY 20 (Petersburg Rd.)			Rural Undeveloped	339	A
	north of KY 18 (Burlington Pike)			Rural Undeveloped	600	B
Idlewild Bypass (KY 8)	I-275 to KY 20 (Petersburg Rd.)			Rural Undeveloped	2,813	C
Camp Ernst Rd.	KY 536 to Longbranch			Rural Developed	2,078	B
	Longbranch to KY 237 (Pleasant Valley)			Transitioning/Urban	5,967	C
Gunpowder Rd.	US 42 to Ridgeview Road			Urbanized	5,015	C
Longbranch Rd.	Camp Ernst to US 42			Transitioning/Urban	903	A
Waterloo Rd.	McVile to KY 338			Rural Undeveloped	309	A
Briargate Rd.	KY 237 (Camp Ernst Rd.) to Fernwood Pl.			Transitioning/Urban	2,391	B
Cayton Rd.	South of Hopeful Church			Urban	5,164	C
	West of Mall Rd			Urban	4,857	C

Boone County Transportation Plan

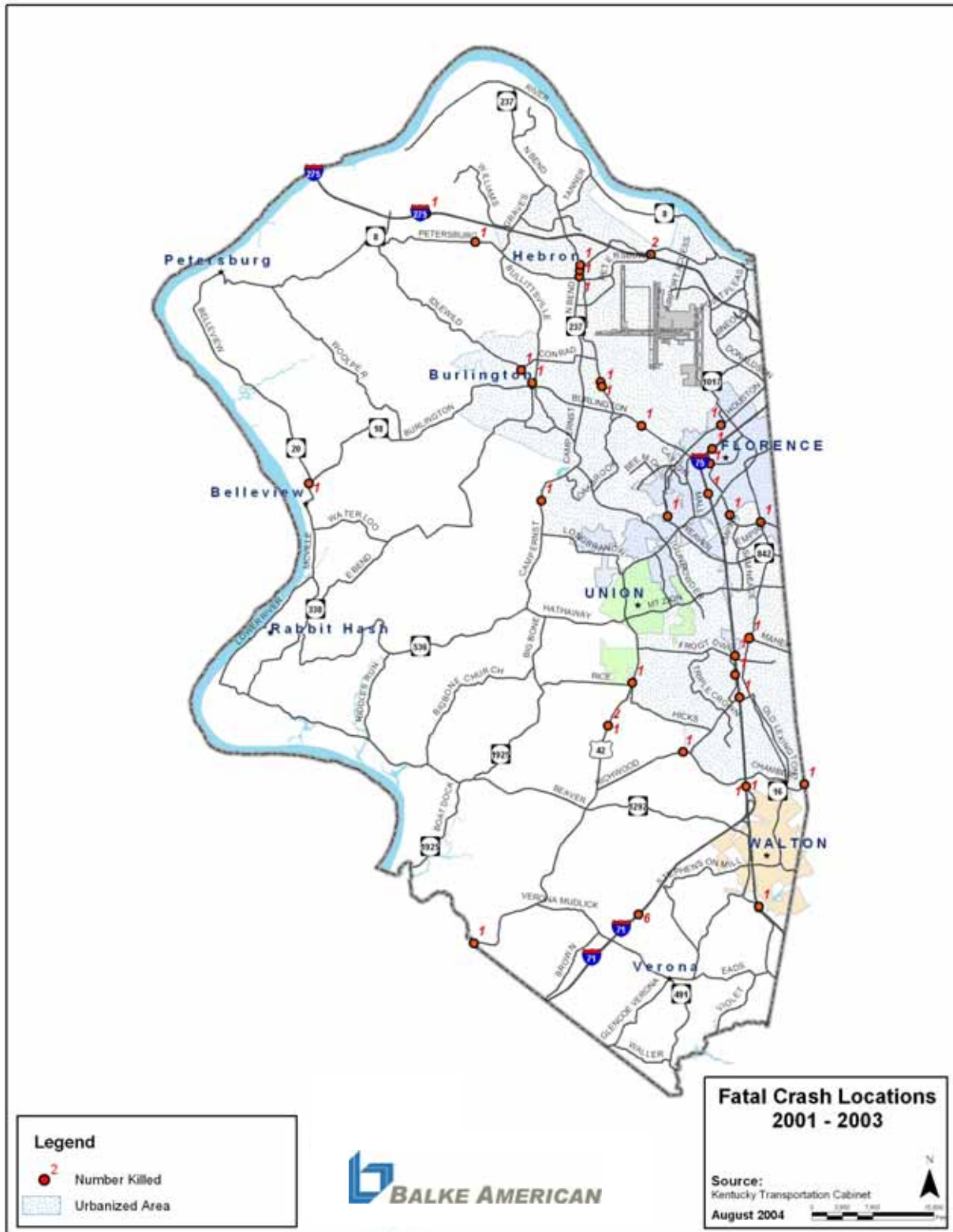


Exhibit 2-9. Fatal Crash Locations (2001 - 2003)

Boone County Transportation Plan

The Critical Rate Factor, or CRF, is the ratio of the calculated crash rate to the critical rate. Segments and intersections having a CRF greater than 1.0 are considered to be locations having abnormally high crash experience and should be evaluated further for safety improvements. Based on the three-year crash data from 2001 through 2003, those roadway segments having a CRF greater than 1.0 are listed in **Exhibit 2-10**. Similarly, roadway spots – very short segments and intersections – having a CRF greater than 1.0 are listed in **Exhibit 2-11**. A map showing these locations is presented in **Exhibit 2-12**.

The results identify a number of locations – both roadway segments and intersections – that can be considered particularly problematic, based on their relative crash experience. Those locations having a crash rate more than 3 times the critical crash rate (i.e. CRF greater than 3.0) are:

Roadway Segments

- US 42 – Boone/Gallatin County Line to KY 14
- KY 8 (River Road) – KY 237 to KY 2846 (Tanner Road)

Intersections

- US 25 Dixie Highway/KY 1017 Turfway Road
- US 42/KY 14
- KY 18/KY 338 (in western Boone County)
- KY 18/KY 338 (downtown Burlington)
- KY 18 Burlington Pike /KY 20 Petersburg Road
- KY 536 Mt. Zion Road/KY 338 Richwood Road

Exhibit 2-10. Roadway Sections with Crash Rate Greater Than Critical Crash Rate

Route Name	Segment	ADT	Accidents			Crash Rate*	Critical Rate	CRF**	Map ID
			Total	Injury	Fatality				
I-275	KY 8 (Idlewild Bypass) to Indiana State Line	29,342	64	18	0	0.82	0.6	1.37	S1
US 25 (Dixie Highway)	Kenton County Line to Brookwood Dr.	7,226	114	14	0	7.24	3.49	2.07	S2
US 42	Gallatin County Line to KY 14 (Verona-Mud Lick Rd.)	4,628	249	20	1	22.18	3.3	6.72	S3
KY 8 (River Rd)	KY 237 (North Bend Rd.) to KY 2846 (Tanner Rd.)	192	13	6	0	20.29	5.12	3.96	S4
	KY 2846 (Tanner Rd.) to KY 20 (Petersburg Rd.)	660	11	0	0	3.92	3.88	1.01	S5
	KY 20 (Petersburg Rd.) to Kenton County Line	2,020	11	3	0	4.37	3.95	1.11	S6
KY 14 (Verona-Mud Lick Rd.)	US 42 to I-71 Ramps	2,737	37	14	0	5.79	3.28	1.77	S7
	KY 16 (Glenc0-Verona Rd.) to Salem Creek Rd.	1,758	29	2	0	4.58	3.46	1.32	S8
KY 16 (Walton-Nicholson Rd)	US 25 to Kenton County Line	3,528	29	8	0	8.37	4.05	2.07	S9
KY 18 (McVile Rd.)	KY 338 (East Bend Rd.) to KY 20 (Belleview Rd.)	582	19	5	0	8.51	3.88	2.19	S10
KY 20 (Belleview/Petersburg Rd)	3rd St. to Woolper Rd.	1,747	16	9	0	5.41	4.05	1.34	S11
	KY 8 (Idlewild Bypass) to KY 237 (North Bend Rd.)	2,022	45	11	1	3.54	3.04	1.16	S12
KY 338 (Richwood Rd.)	KY 2951 (Chambers Rd.) to US 42	1,587	17	7	1	3.88	3.46	1.12	S13
KY 338 (Idlewild Rd.)	KY 18 (Burlington Pike) to KY 20 (Petersburg Rd.)	1,606	40	8	0	3.98	3.56	1.12	S14
KY 717 (Thoroughbred Blvd.)	I-75 to KY 1017 (Turfway Rd.)	5,596	15	6	0	12.42	4.65	1.43	S15
KY 1925 (Big Bone Rd.)	KY 338 (Beaver Rd.) to KY 536 (Hathaway Rd.)	521	11	3	0	3.85	3.46	1.11	S16
KY 2850 (Baker Rd.)	Gallatin County Line to US 42 (at South Fork Rd.)	81	1	1	0	39.01	21.39	1.82	S17
KY 2954 (Stephenson Mill Rd.)	KY 14 to 0.09 miles west of I-75	1,008	4	0	0	22.28	8.04	1.85	S18
KY 3060 (Frogtown Rd.)	US 42 to US 25 (Dixie Highway)	5,134	77	16	0	6.46	3.43	1.46	S20
KY 3157 (Mall Rd.)	US 42 to KY 18 (Burlington Pike)	21,716	162	69	0	8.47	5.44	1.56	S21

* Expressed in Annual Crashes per 100 Million Vehicle-Miles of Travel
 ** CRF - Critical Rate Factor = Crash Rate/Critical Rate
 Source of Data: Kentucky Transportation Cabinet, 2004



Boone County Transportation Plan

Exhibit 2-11. Intersections/Spots with Crash Rate Greater Than Critical Crash Rate

Route Name	Intersection	ADT	Accidents			Crash Rate*	Critical Rate	CRF**	Map ID
			Total	Injury	Fatality				
I-275	KY 20	42,062	15	3	0	0.33	0.26	1.25	I1
	KY 237	54,492	62	13	0	1.04	0.4	2.60	I2
I-71	KY 14	34,237	25	6	0	0.67	0.27	2.47	I3
	I-75	88,123	43	13	0	0.45	0.26	1.71	I4
I-75	KY 536	121,585	61	15	0	0.46	0.37	1.24	I5
	US 42	153,576	75	12	0	0.45	0.37	1.21	I6
	KY 18	179,773	79	17	0	0.40	0.37	1.08	I7
US 25 (Dixie Highway)	KY 3060	15,360	31	7	0	1.84	1.28	1.44	I8
	KY 536	29,620	62	7	0	1.91	1.2	1.59	I9
	KY 842	18,156	40	3	0	2.01	1.98	1.02	I10
	KY 1017	20,174	155	40	0	7.02	1.98	3.54	I11
US 42	KY 1292/KY 338	6,667	16	7	0	2.19	1.38	1.59	I12
	KY 338	7,134	17	7	0	2.18	1.38	1.58	I13
	KY 842	48,512	117	30	0	2.20	1.78	1.24	I14
KY 8 (River Rd.)	KY 237	368	3	0	0	7.44	3.61	2.06	I15
KY 14 (Mary Grubbs Highway)	US 42	5,609	29	1	0	4.72	1.38	3.42	I16
KY 18 (Burlington Pike)	KY 338	18,692	129	12	0	6.30	1.12	5.63	I17
	KY 338	996	28	3	0	25.67	2.65	9.69	I18
	KY 3157	57,141	115	30	0	1.84	1.13	1.63	I19
KY 20 (Petersburg Rd.)	KY 18	2,127	15	2	0	6.44	1.89	3.41	I20
KY 237 (Pleasant Valley Rd.)	KY 8	368	2	1	0	4.96	3.61	1.37	I21
	KY 2846	10,751	18	3	0	1.53	1.26	1.21	I22
	Worldwide	12,709	21	3	0	1.51	1.18	1.28	I23
	Coach Trail	675	4	0	0	5.41	2.65	2.04	I24
KY 338 (Richwood Rd.)	US 25	16,203	66	3	0	3.72	1.98	1.88	I25
	KY 2951	3,495	13	3	0	3.40	2.53	1.34	I26
KY 536 (Mt. Zion Rd)	KY 338	925	21	2	0	20.73	2.65	7.82	I27
	KY 2852	1,544	9	3	0	5.32	1.89	2.82	I28
	KY 3503	22,128	51	7	0	2.10	1.2	1.75	I29
KY 842 (Hopeful Church Rd.)	US 25	18,156	43	3	0	2.16	1.98	1.09	I30
	KY 18	46,215	69	13	0	1.36	1.16	1.18	I31
	KY 1017	43,632	118	21	0	2.47	1.78	1.39	I32
KY 1017 (Turfway Rd.)	US 25	20,174	42	6	0	1.90	1.86	1.02	I33

* Expressed in Annual Crashes per 100 Million Vehicles

** CRF - Critical Rate Factor = Crash Rate/Critical Rate

Source of Data: Kentucky Transportation Cabinet, 2004

Boone County Transportation Plan

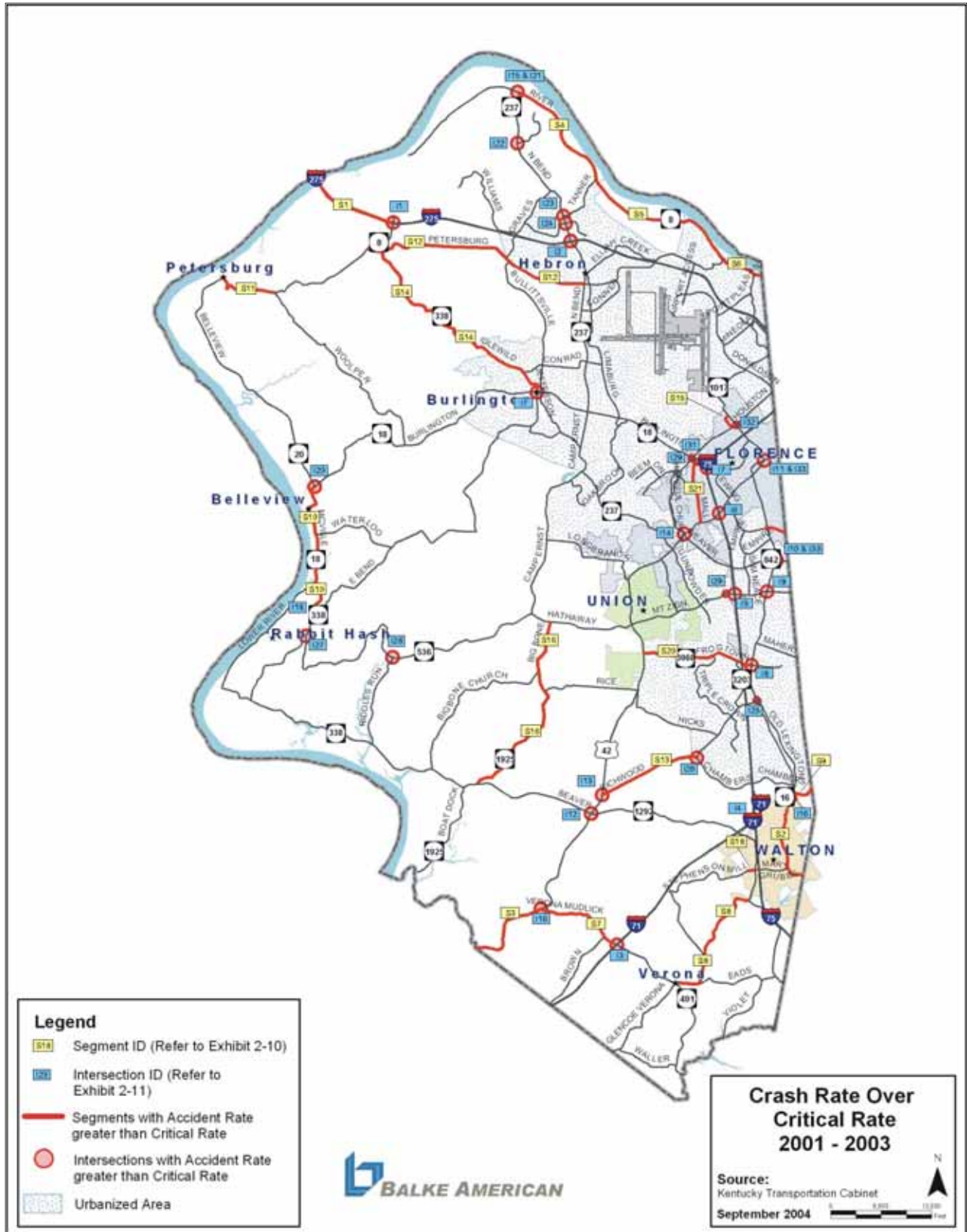


Exhibit 2-12. All Locations with Crash Rate Greater Than Critical Crash Rate

Boone County Transportation Plan

Statistically, Boone County fares well compared to the rest of Kentucky. Although Boone County has the third highest population in Kentucky at 85,991, it had the 44th highest overall crash rate in Kentucky for the period from 1998 – 2002, according to the Kentucky Transportation Center report. Of the 15 counties having a population greater than 50,000, the overall crash rate for Boone County ranked 10th out of 15 for State-maintained roads and 11th out of 15 for all roads (State and local). For fatal and injury crash rates, Boone County was ranked 14th out of 15 counties having a population greater than 50,000 for State-maintained roads and 13th out of 15 for all roads.

At 94.3 percent, Boone County had the third highest seat belt usage in all of Kentucky for those drivers that were involved in crashes. Overall, for all drivers, the seat belt usage rate in Boone County was 74 percent, according to a Kentucky Transportation Center Study. However, nearly half the data collected were at interstate locations, for which a 79 percent overall usage rate was recorded. For arterial, collector and local roads in Boone County, the overall seat belt usage rate in 2003 was 69 percent. Statewide, the overall usage rate was 65.5 percent. Although Kentucky's usage rate has increased steadily over the years, it remains one of the lowest in the country.

PLANNED IMPROVEMENTS

Planned transportation improvements for Boone County listed in the 2005-2010 KYTC Recommend Six Year Highway Plan can be found in Chapter 3. Kentucky's Federally-funded projects in the Six Year Plan are fiscally balanced; that is, Kentucky has provided its share of the required match in order to receive the necessary Federal funds and the projects are on track for construction. Funds for State-financed projects, however, are in question and it may be several years after the published schedule in the Plan before actual funds are available.

Boone County has contributed \$1 million toward the reconstruction of North Bend Road (KY 237), north of Interstate 275, as a means to expedite the completion of this project. Also, the County and cities of Florence, Elsmere and Independence have contributed a collective \$2 million toward the reconstruction of Industrial Road (KY 1829). By participating with the Kentucky Transportation Cabinet in reconstructing those facilities, these local agencies are demonstrating a commitment toward improved transportation in the study area.

PROBLEM LOCATIONS

The County and other stakeholders have identified a list of problem locations that are experiencing traffic safety and/or congestion problems. As part of the short-term Operational Improvement Plan for the Boone County Transportation Study, recommendations will be made for improvements at these locations that 1) are relatively low-cost, 2) can be implemented easily, and 3) will have an immediate and measurable impact.

Stakeholders were asked to identify specific problem spots based on their personal observations and driving experiences. Although little data (beyond crash experience) were collected to identify these locations, it is believed that the empirical evidence offered by the stakeholders best identifies those locations that are particularly troublesome and that additional data collection would merely serve to verify what is known already. Input from stakeholders will be incorporated into recommendations made as part of the final Operational Improvement Plan.

The problem locations are listed in the table in **Exhibit 2-13** and are shown on the map in **Exhibit 2-14**. It is important to point out that only problem locations that will not be corrected by projects in the current Six Year Highway Plan are identified.

Boone County Transportation Plan

Exhibit 2-13. Problem Locations Not Addressed by Six Year Plan Projects

Map ID	Route	Location	Description	Comment	Status	Category
3	US 42	Industrial Road to I-75	Add westbound lane	CMAQ application; awaiting authorization	Pending	Capacity/Congestion
4	KY 18 (Burlington Pike)	Oakbrook Drive	Relocate to intersect with new S. Airfield Road	Working with homeowners association	Ongoing	Capacity/Congestion
5	KY 536 (Hathaway Rd.)	Camp Ernst Road	Address guardrail crashes		Unscheduled	Safety
6	US 42	South of Beaver Road	Improve sight distance	Earthen bank and vegetation removal	Unscheduled	Safety
7	KY 338 (Richwood Rd.)	Paddock Drive to Triple Crown	Guardrail improvements	Low shoulder and ravine on westbound side	Unscheduled	Safety
8	US 25	Sanders Drive	Remove sight distance obstruction	City trash receptacle blocking westbound view	Unscheduled	Safety
9	KY 2846 (Tanner Rd.)	East of KY 237 (North Bend Rd.)	Correct dip in pavement		Unscheduled	Safety
12	US 42	Rtce Pike	Improve sight distance	Embankment blocks view to north from EB approach	Unscheduled	Safety
16	KY 18 (Burlington Pike)	KY 842	Intersection improvements	Add eastbound right turn lane and provide NB dual left turn lane	Unscheduled	Capacity/Congestion
17	US 42	Mall Road	Intersection improvements	Add second eastbound left turn lane	Unscheduled	Capacity/Congestion
19	KY 842 (Hopeful Church Rd.)	North of US 42	Access management	Redesign/relocate driveway for Grammas Center and BP Gas Station	Unscheduled	Safety
21	KY 18 (Burlington Pike)	KY 338 (East Bend Rd.)	Intersection improvements	Study new lane configuration and/or signalization	Unscheduled	Capacity/Congestion
22	KY 18 (Burlington Pike)	Taylor Drive (east)	Intersection improvements	Lane configuration improvements	Unscheduled	Both
23	KY 18 (Burlington Pike)	KY 237 to Limburg Road	Access management	Study eliminating median breaks	Unscheduled	Both
24	KY 18 (Burlington Pike)	KY 237 to Zig Zag Road	Traffic control	Speed study to evaluate change from 55 mph to 45 mph	Unscheduled	Safety
25	KY 18 (Burlington Pike)	Merchants Street	Conduct signal warrant analysis	Study need for new signal	Unscheduled	Capacity/Congestion
26	KY 18 (Burlington Pike)	Greenview Drive /Ridge Road	Conduct signal warrant analysis	Study signal removal	Unscheduled	Both
27	KY 8 (River Rd.)	East of Taylorsport	Drainage improvements	Examine ditches, etc.	Unscheduled	Safety
28	KY 237 (North Bend Rd.)	Gateway Blvd.	Signal Improvements	Study and change actuation as needed	Unscheduled	Capacity/Congestion
29	KY 237 (North Bend Rd.)	Conrad Lane	Signal Improvements	Study need for left turn arrows	Unscheduled	Capacity/Congestion
32	KY 842 (Houston Rd.)	Bankers Street	Conduct signal warrant analysis	Study need for new signal and/or turning movement restrictions	Unscheduled	Both
33	KY 18 (Burlington Pike)	Woodpoint Drive/Action Blvd.	Enforcement	Enforce left turn restrictions	Unscheduled	Both
34	KY 18 (Burlington Pike)	Commerce Drive	Intersection improvements	Congestion and difficulty making left turns	Unscheduled	Both
35	US 25 (Dixie Highway)	South of US 42	Access management	Difficulty accessing professional offices on east side	Unscheduled	Both
36	US 42	Ewing Blvd.	Intersection improvements	Study signal improvements and south leg stacking	Unscheduled	Capacity/Congestion
37	US 42	I-75 Interchange NB Exit	Interchange improvements	Stacking on ramp and sight distance problems	Unscheduled	Both
38	Mall Road	Plaza Blvd.	Conduct signal warrant analysis		Unscheduled	Safety
39	Mall Road	Mall Road Square	Geometric improvements	Study geometrics and grades	Unscheduled	Both
41	US 42	KY 842	Signal Improvements	Vary signal timing by time of day	Unscheduled	Capacity/Congestion
43	Connector Drive	Next to Troys 'R Us	Sight distance improvements	Trim hedges that block visibility	Unscheduled	Safety

Boone County Transportation Plan

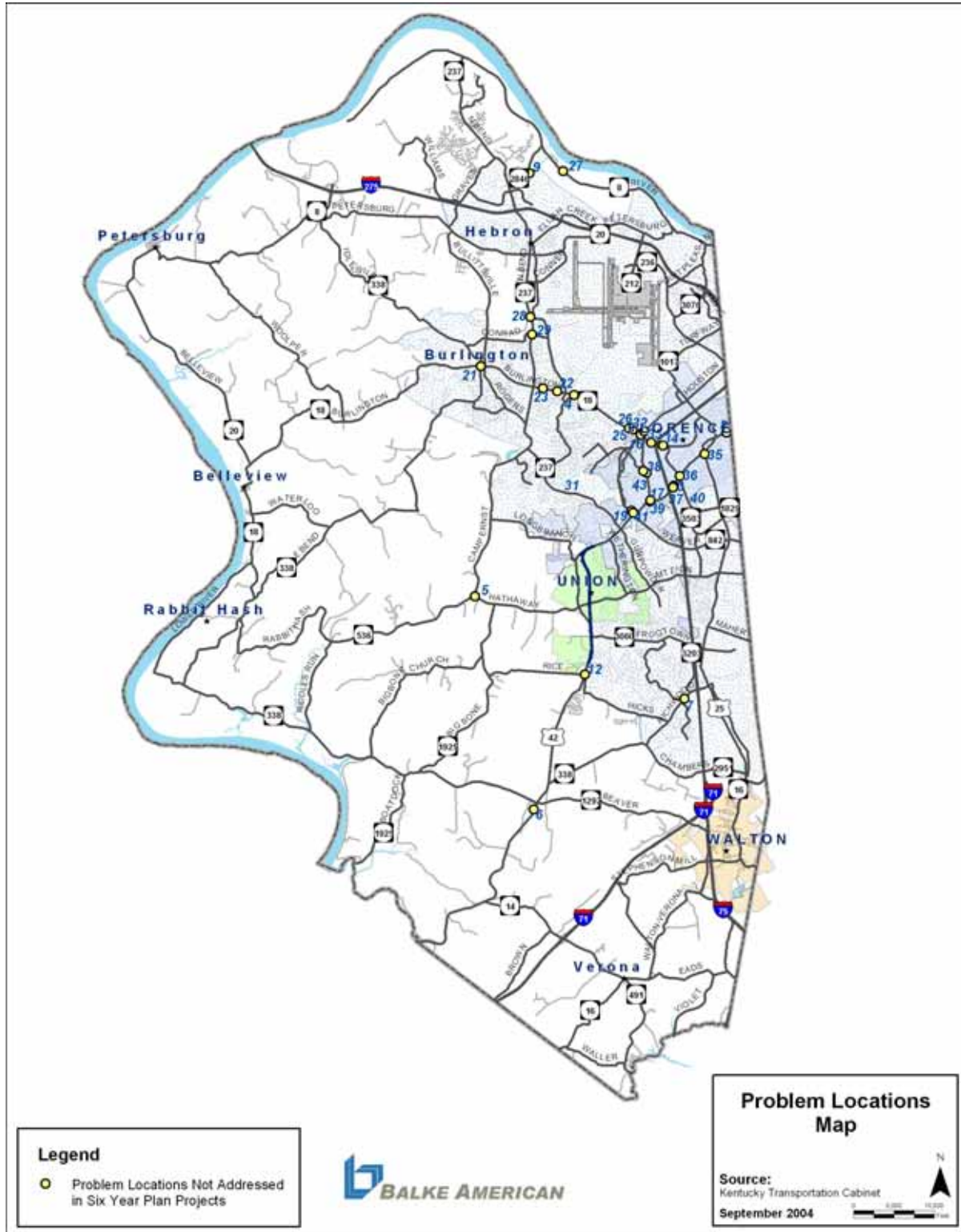


Exhibit 2-14. Problem Locations Map

TRANSIT

Fixed route transit service in Boone County is provided by the Transit Authority of Northern Kentucky, or TANK. Current TANK routes are shown in **Exhibit 2-15**. TANK routes are organized on a hub system, with beginning and ending routes points at the TANK Transit Center in Covington. Currently TANK does not provide inter-county service in Northern Kentucky.

The Transit Capacity and Quality of Service Manual⁴ uses “Transit Supportive Area” as a macroscopic (global) measure to identify areas that are candidates for transit service. A *Transit Supportive Area* is defined by:

- 3 or more households per gross acre; or
- 4 or more jobs per gross acre.

Population and employment data by traffic analysis zone (TAZ) were obtained from OKI, from which densities were computed. Those TAZ’s having population densities equal to or greater than 3 dwelling units per gross acre are shown in **Exhibit 2-16**. Similarly, TAZ’s having employment densities equal to or greater than 4 jobs units per gross acre are shown in **Exhibit 2-17**. On the basis of this measure, it can be concluded that TANK currently provides sufficient coverage in Boone County.

Transit Supportive Area is a global measure only and should not be used in lieu of a detailed transit analysis. A detailed transit analysis was not provided as part of the Boone County Transportation Study. It does not take into account specific generators or activity centers such as the Cincinnati/Northern Kentucky International Airport or Florence Mall. It also

does not consider the need or demand for specific types of service such as inter-county service.

BICYCLE AND PEDESTRIAN FACILITIES

Since the early 1990’s, considerable attention has been given to planning for bicycle and pedestrian routes and facilities in Boone County. The following plans and documents have addressed bicycle and pedestrian travel modes:

- Pedestrian/Bike Path Plan, City of Florence and Boone County, Kentucky, 1992 (updated 2002)
- 1996 Boone County Transportation Plan
- Northeast Boone County Major Investment Study, 1999
- OKI Regional Bicycle Plan (original in 1993, update in 2001)
- OKI 2030 Regional Transportation Plan

The 1996 Boone County Transportation Plan included an inventory of existing bicycle facilities and recommendations for proposed new corridors. These are shown on the map in **Exhibit 2-18** and are listed in **Exhibit 2-19**. A more detailed map of bike and pedestrian routes and facilities for the Florence area, both existing and proposed, is shown in **Exhibit 2-20**. The Northeast Boone County Major Investment Study also included an inventory and proposals for sidewalks and bicycle facilities. These are shown on the map in **Exhibit 2-21**.

⁴ *Transit Capacity and Quality of Service Manual, Second Edition*, Transportation Research Board, National Research Council, Washington, D.C. 2003

Boone County Transportation Plan

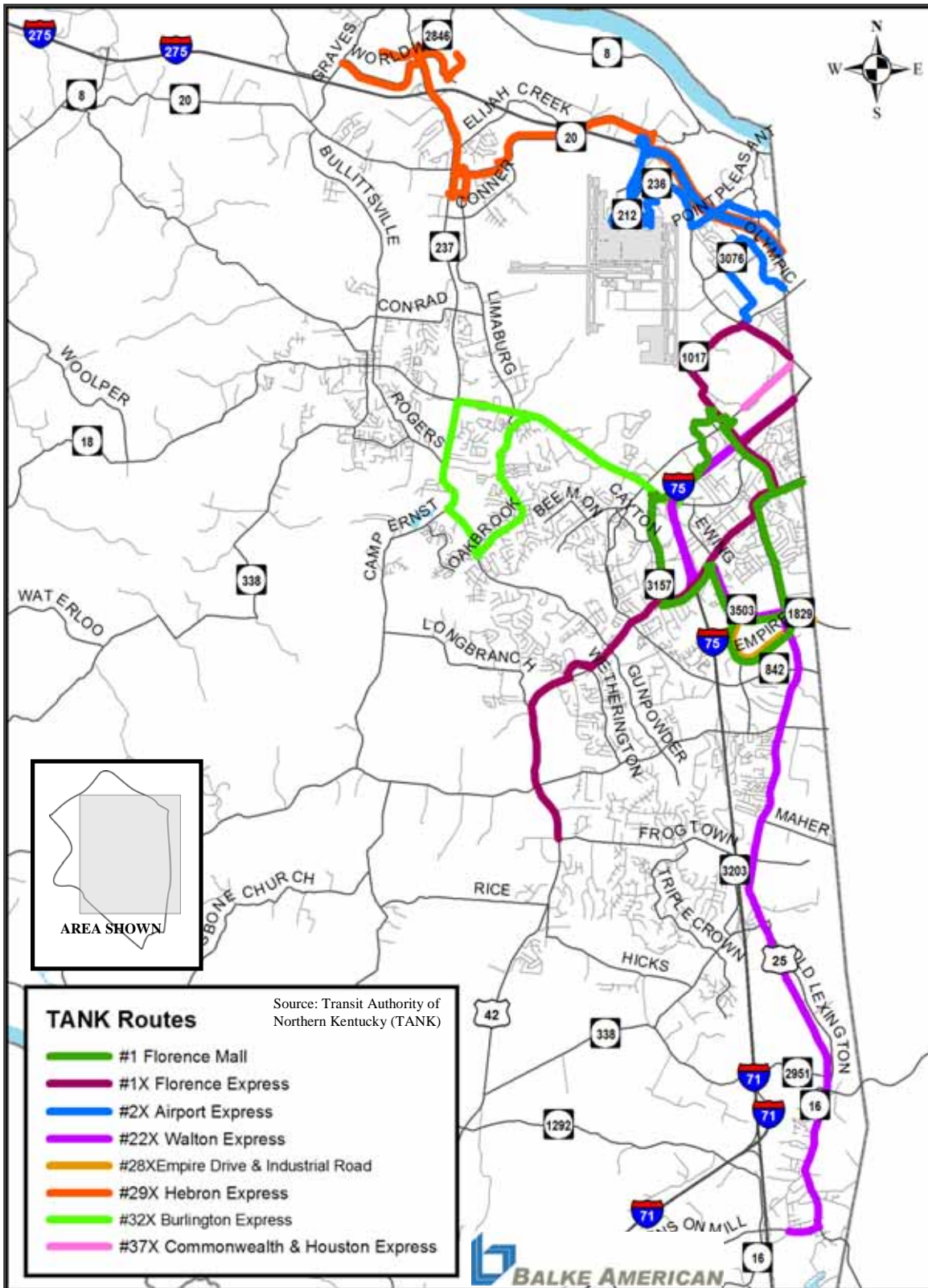


Exhibit 2-15. Current TANK Routes

Boone County Transportation Plan

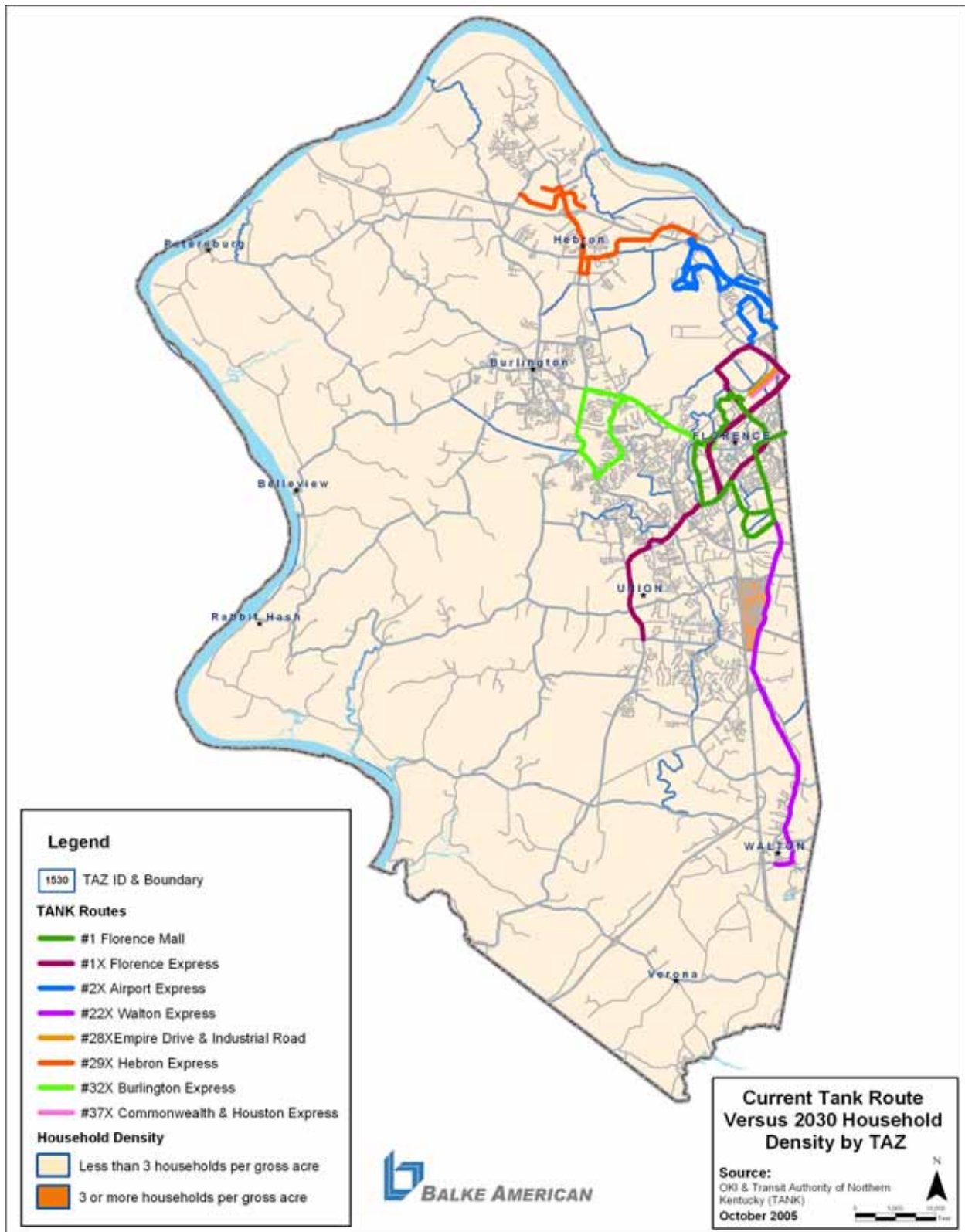


Exhibit 2-16. Current TANK Routes Versus Population Density by TAZ

Boone County Transportation Plan

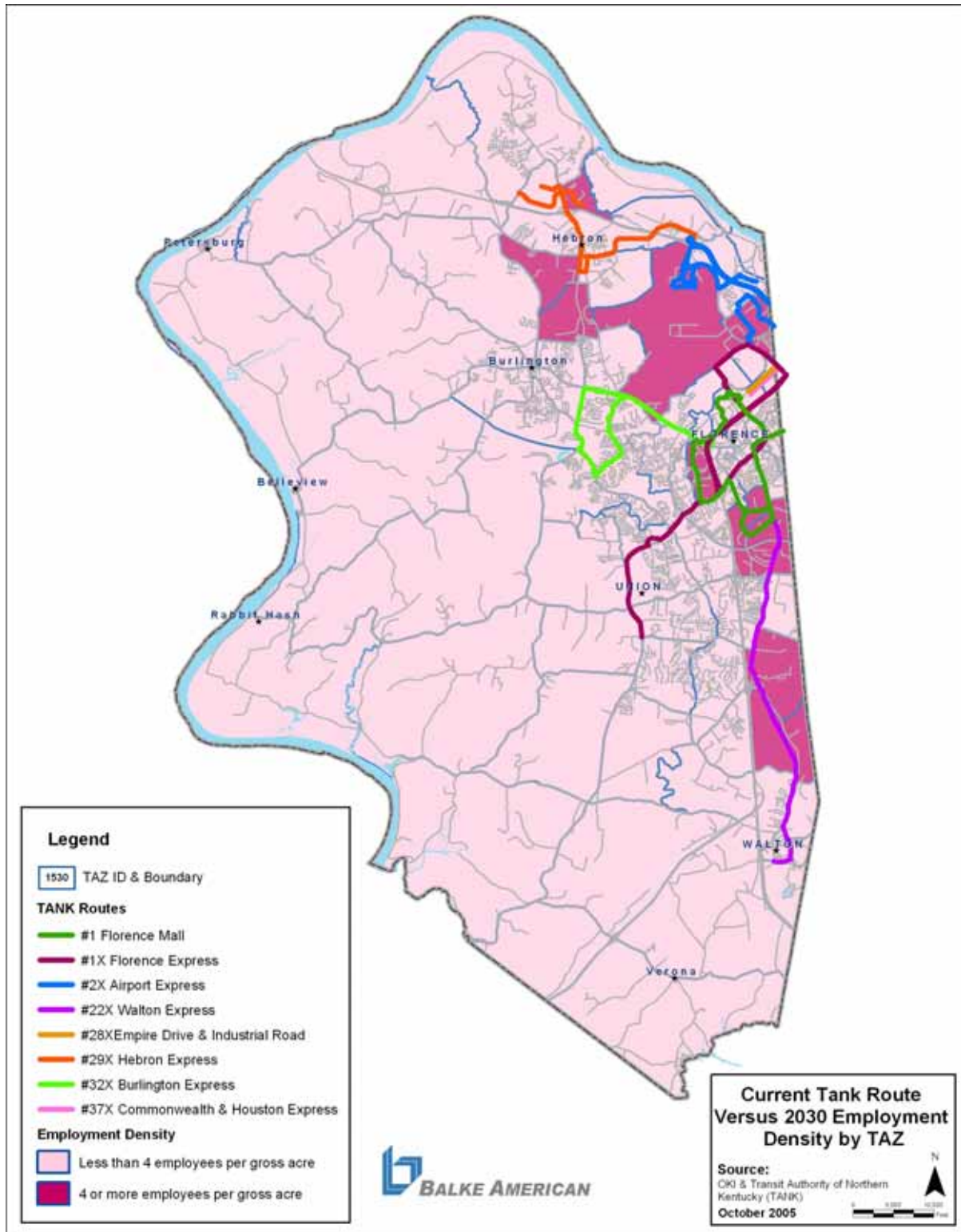


Exhibit 2-17. Current TANK Routes Versus Employment Density by TAZ

Boone County Transportation Plan

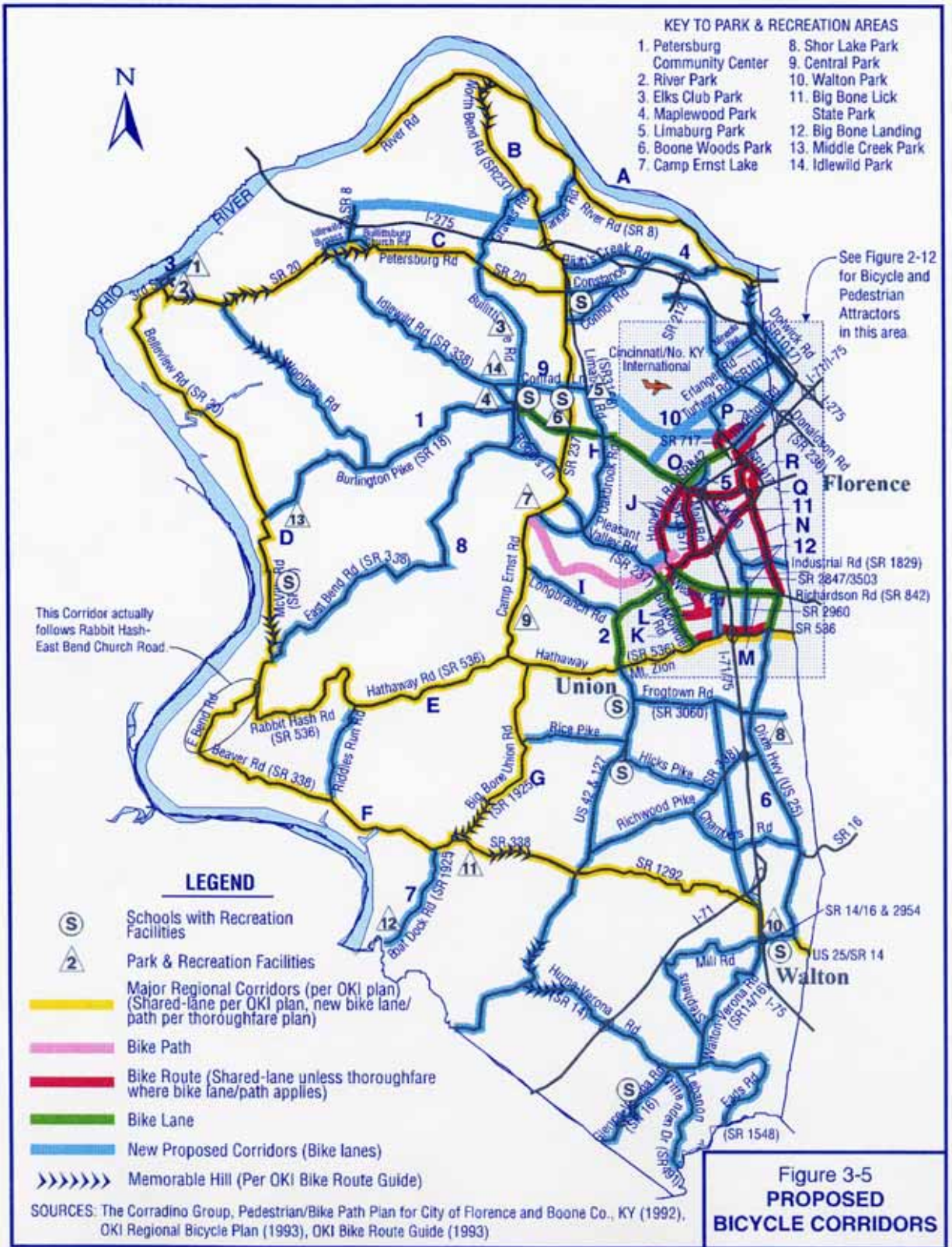


Exhibit 2-18. Proposed Bicycle Corridors - 1996 Boone County Transportation Plan

Table 3-8 : Existing and Proposed Bikeway Corridors from Prior Plans
(From OKI Regional Bicycle Plan and Florence/Boone County Pedestrian/Bike Path Plan)

Project #	Route & Termini	Prior Plan Bikeway Type	Proposed Bikeway Type	Functional Class	Distance [miles]
A	River Road (KY 8) Scenic Bikeway - Kenton County Line to west of North Bend Rd. (KY 237)	Shared Lane	Bike Lane	Minor Arterial	5.6
B	North Bend/Hebron-Limburg/Camp Ernst Road (KY 237) from River Rd. to Hathaway Rd. (KY 536)	Shared Lane	Bike Lane	Major Arterial	9.9
C	Petersburg/Belleview Road (KY 20) from Hebron-Limburg Rd. (KY 237) to Burlington Pk. (KY 18)	Shared Lane	Bike Lane	Minor Arterial	12.1
D	McVie Road (KY 18) from Belleview Rd. (KY 20) to East Bend Rd. (KY 338)	Shared Lane	Bike Lane	Minor Arterial	2.0
E	Hathaway/Mt. Zion Road (KY 536) from East Bend Rd. (KY 338) to Dixie Highway (US 25)	Shared Lane	Bike Lane	Minor Arterial	7.6
F	East Bend/Beaver Road (KY 338) from McVie Rd. (KY 18) through Rabbit Hash to Dixie Highway (US 25)	Shared Lane	Bike Lane	Minor Arterial	13.2
G	Big Boone Union Road from Hathaway Rd. (KY 536/292) to Beaver Rd. (KY 338)	Shared Lane	Bike Lane	Collector/Arterial	3.7
H	Burlington Pike (KY 18) from Idlewild Rd. (KY 338) to Hopeful Rd. (KY 842), extended to Ewing Blvd.	Bike Lane	Bike Lane	Minor Arterial	2.9
I	Camp Ernst Road to east of Hopeful Road	Bike Path	Bike Lane	Minor Arterial	2.4
J	Hopeful Road and Mail Road - from Burlington Pike (KY 18) to Union-Florence Rd. (US 42)	Bike Route	Shared Lane	Collector/Arterial	2.8
K	Gunpowder Road from Mt. Zion Rd. (KY 536) to proposed bikepath "I" north of US 42	Bike Lane	Bike Lane	Collector	1.2
L	Sunnybrook Drive and Evergreen Drive - entire sections	Bike Route	Shared Lane	Local	1.4
M	Weaver Road from north of Union-Florence Rd. (US 42) to Dixie Highway (US 25)	Bike Lane	Bike Lane	Collector	1.9
N	Dixie Highway (US 25) from US 42 to Weaver Rd. (KY 842) as shared-lane on to Mt. Zion Road (KY 536) as bike lane	Bike Route	Shared/Separate Lane	Minor Arterial	1.8
O	Houston Road (KY 842) from Burlington Pike (KY 18) to Spiral Drive	Bike Path	Bike Lane	Minor Arterial	0.8
P	Spiral Drive and Hansel Drive from Turfway Rd. then Houston Rd. to Turfway Rd. and Turfway Rd. to Burlington Pk.	Bike Route	Shared Lane	Local	2.7
Q	Burlington Pike (KY 18) from Ewing Blvd. to Turfway Rd. (KY 1017)	Bike Lane	Shared Lane	Major Arterial	0.7
R	Turfway Road (KY 1017) from Burlington Pk. to Lloyd Avenue to Lynn St. to Main St. to Dixie Highway (US 25/42)	Shared Lane	Shared Lane	Minor Arterial	0.6

Sources: OKI Regional Bicycle Plan; June, 1993.

Pedestrian/Bike Path Plan for City of Florence and Boone County, Kentucky; September, 1992.

Table 3-9: Additional Bikeway Corridors (prior to inclusion of bikeways on all thoroughfares)
(in addition to those previously proposed in OKI Regional Bicycle Plan and Florence/Boone County Pedestrian/Bike Path Plan)

Project #	Route & Termini	Prior Plan Bikeway Type	Proposed Bikeway Type	Functional Class	Distance [miles]
1	Extend bikeway on Burlington Pike (KY 18) from Idlewild Rd. (KY 338) to Belleview Rd. (KY 20)	None	Bike Lane	Minor Arterial	5.0
2	Union-Florence Road (US 42) from Weaver Rd. (KY 842) to Mt. Zion Rd. (KY 536) in the reconstruction of US 42	None	Bike Lane	Major Arterial	5.3
3	Extend bikeway to River Park and Petersburg Community Center	None	Bike Lane	Local	0.9
4	Constance Road (KY 20) from Hebron-Limburg Rd. (KY 237) to River Road (KY 8)	None	Bike Lane	Minor Arterial	2.9
5	Bikeway on Woodspoint Drive	Bike Lane	Bike Path	Local	0.7
6	Dixie Highway (US 25) from Mt. Zion Road (KY 536) to Mary Grubbs Hwy. (KY 14)	Alternate Shared	Bike Lane	Minor Arterial	5.1
7	Bikeway on Boat Dock Road (KY 1925) from Beaver Rd. (KY 338) to Big South Fork Boat Ramp	None	Bike Lane	Collector	1.9
8	Bikeway along East Bend Road (KY 338) from McVie Road (KY 18) to Burlington Pike	None	Bike Lane	Minor Arterial	7.4
9	Along Conrad Lane from Idlewild Rd. (KY 338) to Limburg Rd. (KY 3168)	None	Bike Lane	Collector	1.6
10	Bikepath along Limburg/Turfway Connector from Limburg Rd. (KY 3168) to Turfway Road (KY 1017)	None	Bike Path	Collector	2.3
11	Along Ewing Boulevard from Burlington Pike (KY 18) to US 42	Bike Lane	Bike Path	Minor Arterial	0.6
12	Bikeway along Industrial Rd./Empire/Weaver-Mt. Connector from US 42 to Mt. Zion Rd. and to Dixie Highway	None	Bike Lane	Collector/Arterial	2.4

Source: The Corradino Group

11/7/99/BIKE.XLS/164

Exhibit 2-19. Proposed Bicycle Project Lists - 1996 Boone County Transportation Plan

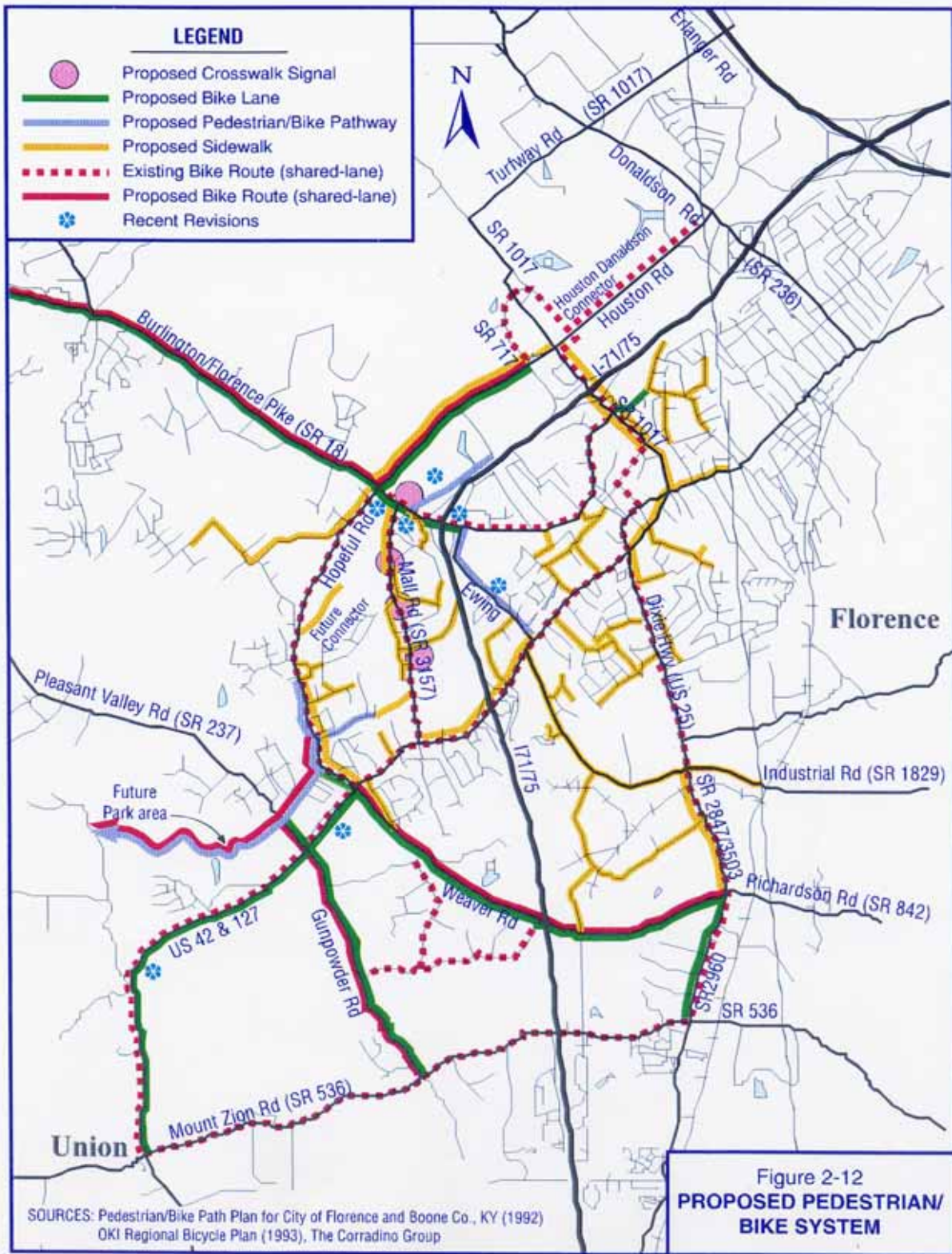


Exhibit 2-20. Proposed Pedestrian/Bicycle System for Florence - 1996 Boone County Transportation Plan

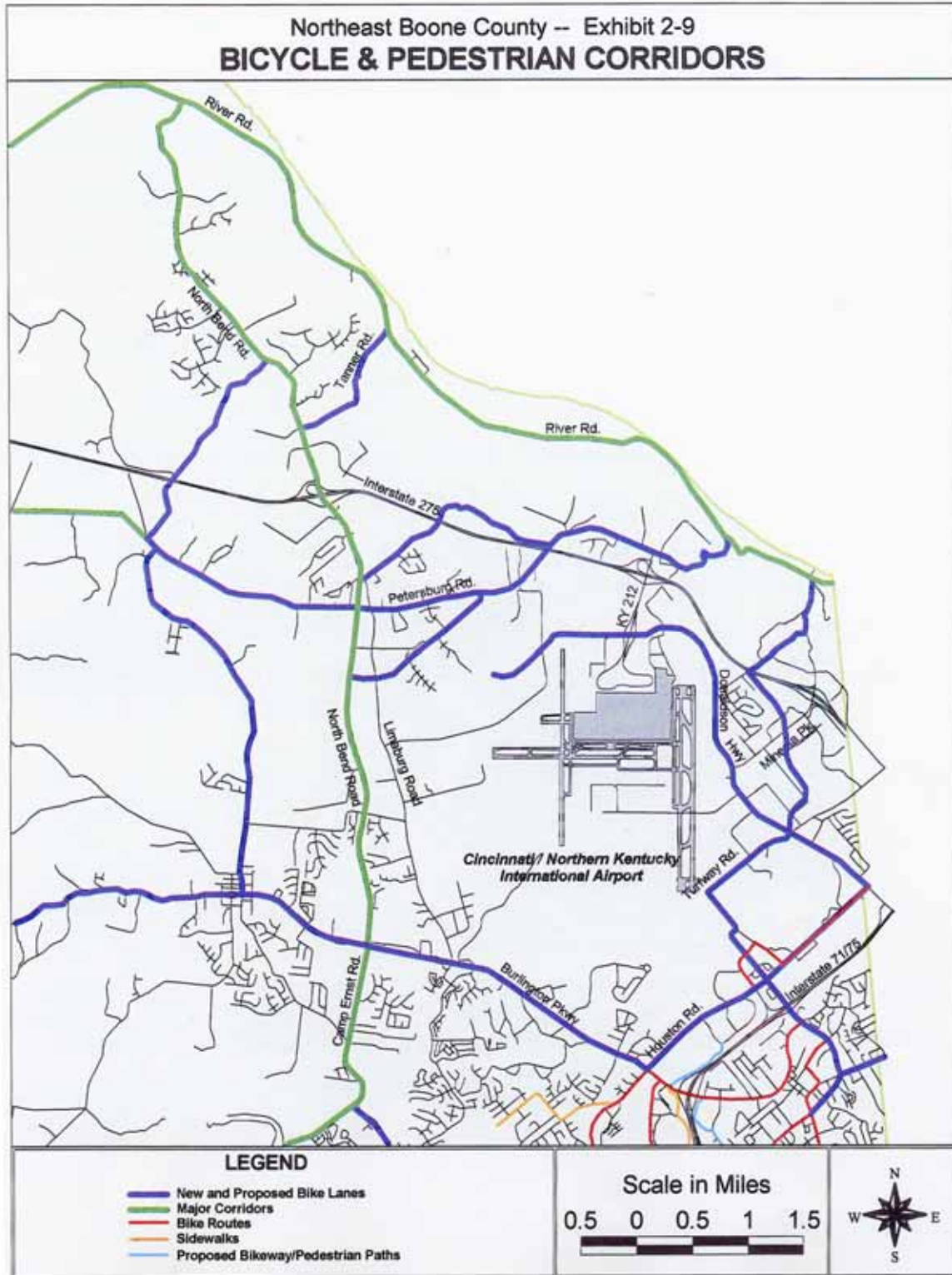


Exhibit 2-21. Bicycle/Pedestrian Facilities and Recommendations – Northeast Boone County Transportation Plan