

Kentucky Highway District 1

ROAD AND BRIDGE CONDITIONS, TRAFFIC SAFETY, TRAVEL TRENDS, AND NEEDS

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PREPARED BY



Founded in 1971, [TRIP](http://www.tripnet.org)® of Washington, DC, is a nonprofit organization that researches, evaluates and distributes economic and technical data on surface transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway and transit engineering and construction; labor unions; and organizations concerned with efficient and safe surface transportation.

The quality of life and economic health of a community is closely tied to the reliability, safety and physical condition of its transportation system. An efficient, safe and well-maintained transportation system provides economic and social benefits by providing individuals access to employment, housing, healthcare, education, goods and services, recreation and social activities, while connecting businesses to suppliers, markets and employees.

A lack of adequate transportation funding can result in deteriorated road and bridge conditions, diminished traffic safety and reduced access, all of which hamper business productivity, limit economic development opportunities, increase vehicle operating costs and reduce a region's overall quality of life.

Providing a safe, efficient and well-maintained 21st century transportation system, which will require long-term, sustainable funding, is critical to supporting economic growth, improved safety and quality of life.

TRIP has prepared the following report on travel trends, traffic safety, and road and bridge conditions in Kentucky's Highway District 1, which is located in the western-most portion of the state and includes the following 12 counties: Ballard, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, McCracken and Trigg.

Sources of information for the report include a survey of county governments by the Kentucky Magistrates & Commissioners Association (KMCA), the Kentucky Office of Highway Safety and the Federal Highway Administration (FHWA).

Population and Travel Trends

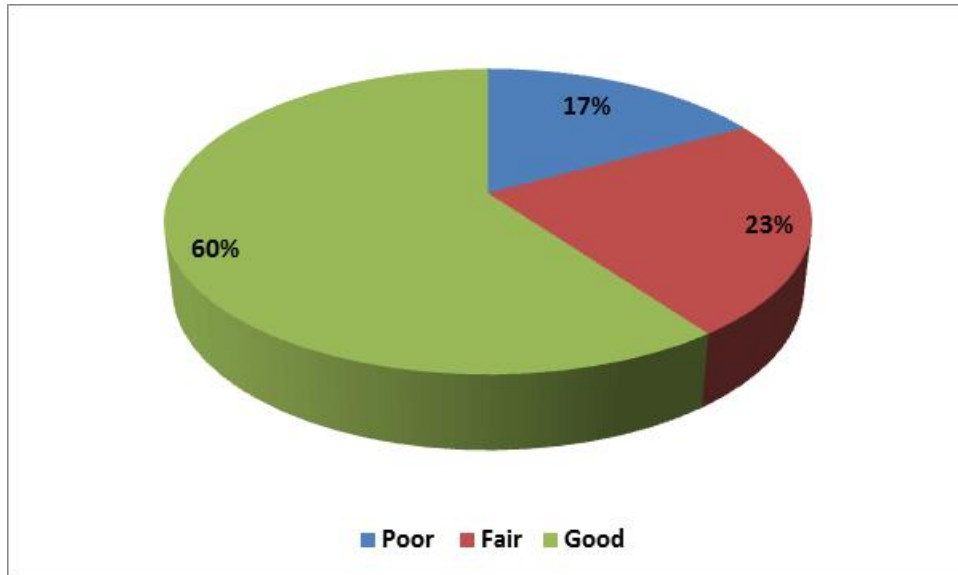
The 12 counties that comprise District 1 were home to 237,000 residents in 2016, based on estimates by the U.S. Census Bureau. Vehicle travel in District 1 totaled 3.1 billion miles in 2016, an increase of two percent from 2014 (based on data provided to TRIP by the Kentucky Office of Highway Safety).

Pavement Conditions

The life cycle of Kentucky's roads is greatly affected by the state and local governments' ability to perform timely maintenance and upgrades to ensure that road and highway surfaces last as long as possible.

Based on results of a TRIP survey completed by members of KMCA, TRIP has calculated the share of county maintained roads in poor, fair or good condition in Highway District 1. Survey responses indicated 17 percent of county maintained roads are in poor condition, 23 percent are in fair condition and 60 percent are in good condition.

CHART 1: Share of county-maintained roads in poor, fair or good condition in Highway District 1.



Roads rated poor may show signs of deterioration, including rutting, cracks and potholes. In some cases, poor roads can be resurfaced but often are too deteriorated and must be reconstructed. Roads rated in fair condition may show signs of significant wear and may also have some visible pavement distress. Most pavements in fair condition can be repaired by resurfacing, but some may need more extensive reconstruction to return them to good condition.

Pavement failure is caused by a combination of traffic, moisture and climate. Moisture often works its way into road surfaces and the materials that form the road’s foundation. Road surfaces at intersections are even more prone to deterioration because the slow-moving or standing loads occurring at these sites subject the pavement to higher levels of stress. It is critical that roads are fixed before they require major repairs because reconstructing roads costs approximately four times more than resurfacing them.

The KMCA survey of county governments found that 39 percent of Highway District 1’s county-maintained roads are in need of resurfacing, but current funding levels will only allow for the resurfacing of three percent of county-maintained roads in 2017. The survey also found that 11 percent of Highway District 1’s county-maintained roads are in need of reconstruction, but current funding will not allow for any reconstruction in 2017.

Bridge Conditions:

Highway District 1 has 1,752 bridges that are at least 20 feet long and are included in the Federal Highway Administration’s National Bridge Inventory (NBI). According to NBI data, in 2016, 123 of these bridges (seven percent) were rated as structurally deficient. Seventy-one of the 123 structurally deficient bridges in Highway District 1 are posted with weight restrictions, which limit them to carrying lighter vehicles.

A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Bridges that are structurally deficient may be posted for lower weight limits or closed if their condition warrants such action. Deteriorated bridges can have a significant impact on daily life. Restrictions on vehicle weight may cause many vehicles – especially emergency vehicles, commercial trucks, school buses and farm equipment – to use alternate routes to avoid weight-restricted bridges. Redirected trips also lengthen travel time, waste fuel and reduce the efficiency of the local economy.

The following chart lists the 25 most heavily traveled structurally deficient bridges in Highway District 1.

CHART 2: Most heavily traveled structurally deficient bridges in Highway District 1.

Rank	County	City	Route Carried	Feature Intersected	Location	Year Built	Avg. Daily Traffic
1	McCracken		US-62	P&L RAILWAY	EBL 200 FT E-US 60	1937	20,121
2	Marshall		JULIAN M CARROLL P	EAST FORK CLARKS RIVER	SBL 1.0 MI N OF KY 348 TP	1967	7,122
3	Fulton		KY-116	HARRIS FORK CREEK	.46 MI EAST OF JCT US 51B	1934	7,054
4	Graves		KY-131	CROWLEY BRANCH	.60 MI NOR. OF JKSN PUR P	1930	2,931
5	Marshall		KY-408	OVERFLOW STRUCTURE	1.0 MI EAST OF JCT US 641	1938	2,748
6	Marshall		KY-408	CLARKS RIVER	1.0 MI EAST OF JCT US 641	1938	2,748
7	Calloway		BAILEY RD	BEE CREEK	0.5 M. N. OF KY. 121	1973	2,314
8	McCracken		KY-339	MASSAC CREEK	1.5 MI S.W. OF JCT US 45	1966	2,207
9	Trigg		KY-139	BURGE CREEK	1.8 MI NOR. OF JCT KY 525	1932	1,830
10	Graves		KY-339	WEST MAYFIELD CREEK	.40 MI NOR. OF JCT KY 80	1940	1,426
11	McCracken		KY-1954	BOTTOM DITCH	.60 MI NOR. OF JCT KY 348	1965	1,350
12	McCracken		KY-994	BRANCH OF BOTTOM DITCH	.60 MI NOR. OF JCT KY 348	1969	1,266
13	Marshall		KY-58	WEST FORK CLARKS RIVER	1.1 MI EAST OF GRAVES CL	1932	1,252
14	McCracken		KY-3520	P&L RAILWAY	.50 MI WEST OF JCT KY 786	1936	929
15	Crittenden		KY-91	CROOKED CREEK	.70 MI N.W. OF JCT US 60	1929	912
16	Graves		KY-1820	BRANCH OF MAYFEILD CREEK	.20 MI EAST OF JCT KY 339	1967	726
17	Carlisle		KY-1377	HORN CREEK	.70 MI EAST OF JCT KY 137	1967	645
18	Hickman		KY-307	NORTH FORK BAYOU DE CHIE	.30 MI SOU. OF JCT KY 944	1937	641
19	McCracken		CHILDRESS RD	LITTLE MASSAC CREEK	.8 M. EAST OF KY. 726	1956	630
20	McCracken	Paducah	SOUTH 24TH ST	BR OF ISLAND CREEK	150 N OF CENTER STREET	1977	630
21	Fulton		KY-1718	FORK OF HARRIS CREEK	250 FT NOR. OF MEARS ST	1950	623
22	McCracken		KY-1420	BRANCH OF MASSAC CREEK	.45 M EAST OF JCT KY 2411	1969	584
23	Crittenden		KY-120	SLOUGH OF TRADEWATER RIV	.20 MI W OF WEBSTER CL	1955	567
24	Crittenden		KY-120	SLOUGH OF TRADEWATER RIV	.10 MI W OF WEBSTER CL	1955	567
25	Graves		KY-1241	OLD MAYFIELD CREEK	.10 MI S OF MARSHALL C	1926	545

Indicates bridge is currently closed
 Indicates bridge is restricted to only lower-weight vehicles

Source: TRIP analysis of Federal Highway Administration National Bridge Inventory data.

The following chart provides information on the 25 structurally deficient bridges in Highway District 1 (carrying a minimum of 100 vehicles per day) with the lowest average rating for deck, substructure and superstructure. Each major component of a bridge is rated on a scale of zero to nine, with a score of four or below indicating poor condition. If a bridge receives a rating of four or below for its deck, substructure or superstructure, it is rated as structurally deficient.

CHART 3: Structurally deficient bridges with lowest average rating for deck, substructure and superstructure.

Rank	County	City	Route Carried	Feature Intersected	Location	Year Built	Avg. Daily Traffic
1	Marshall		KY-408	OVERFLOW STRUCTURE	1.0 MI EAST OF JCT US 641	1938	2,748
2	Marshall		KY-408	CLARKS RIVER	1.0 MI EAST OF JCT US 641	1938	2,748
3	Trigg		KY-139	BURGE CREEK	1.8 MI NOR. OF JCT KY 525	1932	1,830
4	McCracken		KY-3520	P&L RAILWAY	.50 MI WEST OF JCT KY 786	1936	929
5	Crittenden		KY-91	CROOKED CREEK	.70 MI N.W. OF JCT US 60	1929	912
6	Fulton		KY-1718	FORK OF HARRIS CREEK	250 FT NOR. OF MEARS ST	1950	623
7	Hickman		KY-1826	TOWN CREEK (IN CLINTON)	NTX BLAIR&DEPOT ST-CLINT	1979	424
8	Graves		KY-1890	LITTLE MAYFIELD CREEK	.10 MI WEST OF JCT KY 121	1957	366
9	Hickman		KY-80	BOWLES CREEK	.20 MI EAST OF ICG RR XNG	1964	290
10	Ballard		BETHLEHEM CHURCH RD	BR OF SHELTON CREEK	.75 MI E OF JCT KY 121	1942	227
11	Fulton		KY-1909	LITTLE BAYOU DE CHIEN CR	.60 MI NOR. OF JCT KY 166	1966	146
12	McCracken		KY-1565	BLACK CREEK	.20 MI EAST OF JCT KY 305	1932	111
13	McCracken		KY-1954	BOTTOM DITCH	.60 MI NOR. OF JCT KY 348	1965	1,350
14	McCracken		KY-994	BRANCH OF BOTTOM DITCH	.60 MI NOR. OF JCT KY 348	1969	1,266
15	Hickman		KY-307	NORTH FORK BAYOU DE CHIE	.30 MI SOU. OF JCT KY 944	1937	641
16	Graves		KY-1241	OLD MAYFIELD CREEK	.10 MI S OF MARSHALL CO	1926	545
17	Calloway		OLD SALEM RD	EAST FK-CLARKS RIVER	.7 MI S&E OF JCT KY 94	1984	386
18	Graves		MCKENDREE CHURCH RD	PANTHER CREEK	.4 M. E. OF JCT. KY. 301	1975	144
19	McCracken		THE OLD HOUSER RD	CAMP CREEK	1.1 MI S OF JCT KY 348	1970	105
20	McCracken		US-62	P&L RAILWAY	EBL 200 FT E-US 60	1937	20,121
21	Calloway		BAILEY RD	BEE CREEK	0.5 M. N. OF KY. 121	1973	2,314
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	Indicates bridge is currently closed						
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Source: TRIP analysis of Federal Highway Administration National Bridge Inventory data.

Traffic Safety:

Three major factors are associated with vehicle crashes: driver behavior, vehicle characteristics and roadway features. It is estimated that roadway features are likely a contributing factor in approximately one-third of fatal traffic crashes. Roadway features that impact safety include the number of lanes, lane widths, lighting, lane markings, rumble strips, shoulders, guard rails and other shielding devices, median barriers, and intersection design.

Improving safety on Kentucky’s roadways can be achieved through further improvements in vehicle safety; improvements in driver, pedestrian, and bicyclist behavior; and, a variety of improvements in roadway safety features.

The severity of serious traffic crashes could be reduced through roadway improvements, where appropriate, such as adding turn lanes, removing or shielding obstacles, adding or improving medians, widening lanes, widening and paving shoulders, improving intersection layout, and providing better road markings and upgrading or installing traffic signals. Roads with poor geometry, with insufficient clear distances, without turn lanes, lacking or having narrow shoulders for the posted speed limits, or poorly laid out intersections or interchanges, pose greater risks to motorists, pedestrians and bicyclists.

Based on TRIP analysis of data provided by the Kentucky Office of Highway Safety, during the three-year period of 2014 to 2016, there were 171 traffic fatalities in Highway District 1, an average of 57 fatalities per year. Fifty-six percent of traffic fatalities in Highway District 1 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 601 serious injuries as a result of traffic crashes in Highway District 1, an average of 200 serious injuries per year.

According to TRIP analysis of data provided by the Kentucky Office of Highway Safety, the traffic fatality rate in Highway District 1 during the three-year period of 2014 to 2016 was 1.86 deaths per 100 million miles of vehicle travel. This compares with a statewide average of 1.54 deaths per 100 million vehicle miles of travel and a national average of 1.08.

Top Transportation Needs in Highway District 1:

As part of KMCA's survey of its members, local government officials were asked to indicate their three greatest transportation needs. The three greatest needs indicated by survey respondents in Highway District 1 were, in order:

1. need for additional roadway capacity to support economic development and improve safety;
2. need for increased road repairs; and,
3. need for additional bridge repairs and replacement.