Kentucky Highway District 2

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

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PREPARED BY

TRIP
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Founded in 1971, TRIP ® 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 2, which is located in the western portion of the state and includes the following 11 counties: Caldwell, Christian, Daviess, Hancock, Henderson, Hopkins, McLean, Muhlenberg, Ohio, Union and Webster.

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

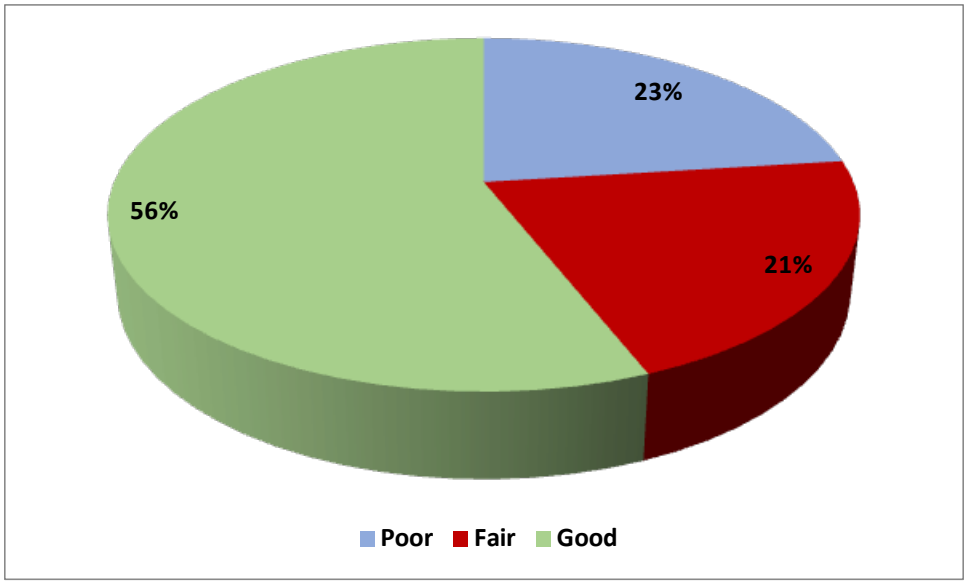
The 11 counties that comprise District 2 were home to 379,000 residents in 2016, based on estimates from the U.S. Census Bureau. Vehicle travel in District 2 totaled 4.3 billion miles in 2016 (based on data provided to TRIP by the Kentucky Office of Highway Safety).

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 2. Survey responses indicated 23 percent of county maintained roads are in poor condition, 21 percent are in fair condition and 56 percent are in good condition.

CHART 1: Share of county maintained roads in poor, fair or good condition in Highway District 2.



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 19 percent of Highway District 2's county-maintained roads are in need of resurfacing, but current funding levels will only allow for the resurfacing of two percent of county-maintained roads in 2017. The survey also found that six percent of Highway District 2's county-maintained roads are in need of reconstruction, but current funding will only allow for the reconstruction of less than half of one percent of county-maintained roads in 2017.

Bridge Conditions:

Highway District 2 has 1,937 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 (six percent) were rated as structurally deficient. Forty-six of the 123 structurally deficient bridges in Highway District 2 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 2.

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

Rank	County	City	Route Carried	Feature Intersected	Location	Year Built	Avg. Daily Traffic
1	Hopkins		EDWARD T BREATHITT	PENNYRILE PARKWAY	.2 MI SE OF JCT KY 1751	1968	19,955
2	Christian		WALNUT STREET	CSX RAILROAD	.50 MI SOU. OF JCT US 41	1935	18,000
3	Ohio		WK-9001	INDIAN CAMP CREEK	2.4 MI EAST OF KY 505 OP	1963	7,229
4	Henderson		KY-812	NORTH FORK CANOE CRK	0.2 MI. N.W. JCT US 41	1983	6,181
5	Henderson		US-60	GREEN RIVER	.01 MI EAST OF JCT KY1078	1930	4,677
6	McLean		US-431	DRAIN TO CYPRESS CREEK	.7 MI N-MUHLENBERG CO.LN.	1933	3,622
7	Muhlenberg		US-431	OVERFLOW STRUCTURE	ON MCLEAN-MUHLENBERG CL	1932	3,622
8	Christian	Hopkinsville	MILBROOKE DRIVE	NORTH FORK LITTLE RVR	.4 MI W OF JCT KY 380	1958	3,460
9	Hopkins		KY-109	P&L RAILWAY	2.9 MI SOU. OF JCT KY 70	1939	2,906
10	Daviess		US-60	KATIE MEADOW SLOUGH	.80 MI EAST OF JCT KY 155	1950	2,640
11	Hopkins		KY-70	SUGAR CREEK	.9 MI E OF JCT KY 1337	1965	2,533
12	Hopkins		KY-70	CLEAR CREEK	2.1 MI E OF JCT KY 1337	1979	2,533
13	Ohio		US-62	BR OF THREE LICK FORK	.8 MI W OF JCT KY 1543	1929	2,390
14	Ohio		US-62	THREELICK FORK	.7 MI W OF JCT KY 1543	1929	2,390
15	Hancock		KY-69	CANEY CREEK	2.7 MI SOU. OF JCT KY 126	1932	2,121
16	Hopkins		KY-138	POND RIVER	ON MCLEAN - HOPKINS CL	1958	1,841
17	Hopkins		KY-70	RICHLAND CREEK	.5 MI W OF JCT KY 1337	1965	1,709
18	Muhlenberg		KY-181	BAT EAST CREEK	.05 MI NOR. OF JCT KY 890	1934	1,599
19	Ohio		KY-85	BR OF W FK LEWIS CREEK	1.5 MI NOR. OF JCT US 62	1940	1,515
20	McLean		KY-81	SLOUGH	.60 MI SOU. OF JCT KY 85	1925	1,485
21	Hopkins		US-62	BR OF PLEASANT RUN CRK	.9 MI E OF JCT KY 1687	1932	1,410
22	Hopkins		US-62	COPPERAS CREEK	1 MI W OF JCT KY 1338	1932	1,410
23	Hopkins		US-62	BR OF CANEY CREEK	.05 MI WEST OF JCT KY 454	1932	1,410
24	Henderson		WASHINGTON STREET	CANOE CREEK	.23 MI WEST OF JCT US 41	1952	1,397
25	Christian		KY-272	UNNAMED STREAM	2.8 MI W JCT KY 164	1935	1,392

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 2 (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	Hopkins		POPLAR ST	P&L RAILWAY	200 FT N. MEADOW HILL RD.	1982	498
2	Christian		KY-107	DONALDSON CRK	3.8 MI S.W. OF JCT KY 287	1932	624
3	Webster		KY-143	CRAB ORCHARD CRK	.40 MI N.W. OF JCT KY 132	1937	127
4	Muhlenberg		US-431	OVERFLOW STRUCTURE	MCLEAN-MUHLENBERG CL	1932	3,622
5	Ohio		US-62	BR OF THREE LICK FORK	.8 MI W OF JCT KY 1543	1929	2,390
6	Ohio		US-62	THREELICK FORK	.7 MI W OF JCT KY 1543	1929	2,390
7	Caldwell		KY-293	DONALDSON CRK	.50 MI NOR. OF JCT KY 70	1948	454
8	Webster		KY-283	UNNAME STREAM	2.4 MI SOU. OF JCT KY 56	1960	304
9	Ohio		MOUNT ZION RD	PIGEON CRK	0.1 MILE S JCT US 62	1970	271
10	Henderson		KY-1078	RACE CRK	2.4 MI NE OF W-JCT US 60	1953	196
11	Christian		WALNUT STREET	CSX RAILROAD	.50 MI SOU. OF JCT US 41	1935	18,000
12	Henderson		KY-812	N FORK CANOE CRK	0.2 MI. N.W. JCT US 41	1983	6,181
13	McLean		US-431	DRAIN TO CYPRESS CRK	.7 MI N-MUHLENBERG CL	1933	3,622
14	Christian	Hopkinsville	MILBROOKE DRIVE	NORTH FORK LITTLE RIVER	.4 MI W OF JCT KY 380	1958	3,460
15	Ohio		KY-85	BR OF W FK LEWIS CRK	1.5 MI NOR. OF JCT US 62	1940	1,515
16	Hopkins		US-62	COPPERAS CRK	1 MI W OF JCT KY 1338	1932	1,410
17	Daviess		CR-1053	ALLGOOD DITCH	0.2 MI E JCT KY 405	1940	896
18	Daviess		ROCKPORT FERRY RD	KELLY CRK	0.4 MI NW JCT US 60	1920	747
19	Christian		KY-109	MCKNIGHTS CRK	1.5 MI N.W. OF JCT KY 134	1932	582
20	McLean		KY-140	BR OF LONG FALLS CRK	.80 MI EAST OF JCT KY 815	1938	449
21	Webster		KY-283	BR OF KNOBLICK CRK	.60 MI SOU. OF JCT KY 56	1959	382
22	Christian		KY-189	BRANCH OF BUCK FORK	2.1 MI EAST OF JCT KY 107	1959	352
23	Hopkins		KY-502	CLEAR CRK OVERFLOW	2.9 MI S OF JCT KY 1034	1959	259
24	Hopkins		KY-502	CLEAR CRK OVERFLOW	3.1 MI S OF JCT KY 1034	1959	259
25	Henderson		KY-136	POND CRK SWAMP	2.6 MI N.W. OF JCT KY 359	1920	157

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.

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 188 traffic fatalities in Highway District 2, an average of 63 fatalities per year. Forty-three percent of traffic fatalities in Highway District 2 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 846 serious injuries as a result of traffic crashes in Highway District 2, an average of 282 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 2 during the three-year period of 2014 to 2016 was 1.44 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 2:

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 2 were, in order:

1. need for increased road rehabilitation and repair;
2. need for additional roadway safety improvements; and
3. need for additional funding for road, highway and bridge improvements.