Kentucky Highway District 11

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

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PREPARED BY

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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 11, which is located in the southeastern portion of the state and includes the following eight counties: Bell, Clay, Harlan, Jackson, Knox, Laurel, Leslie and Whitley.

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

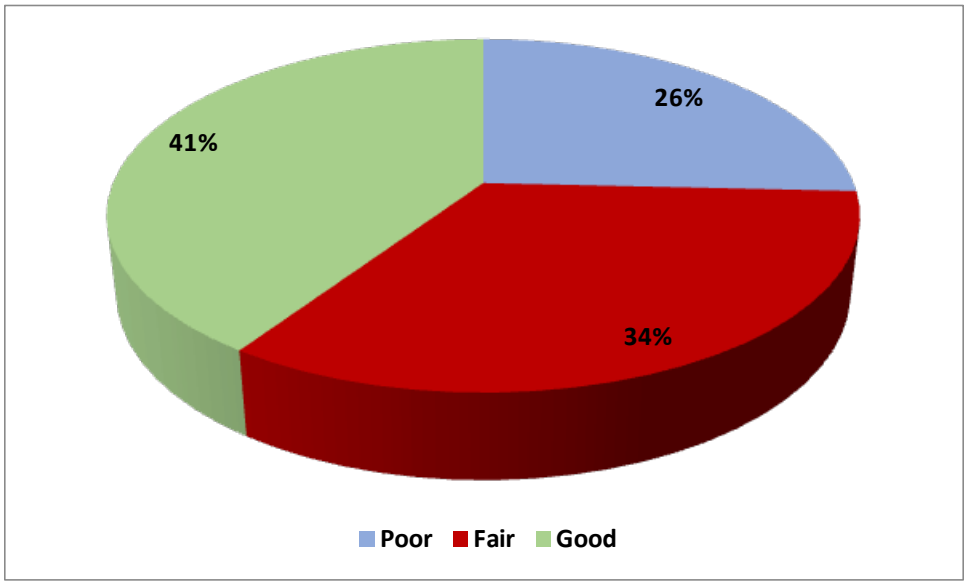
The eight counties that comprise District 11 were home to 227,000 residents in 2016, based on estimates form the U.S. Census Bureau. Vehicle travel in District 11 totaled 2.8 billion miles in 2016, an increase of two percent from 2014 (based on data provided to TRIP by the Kentucky Office of Highway 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 11. Survey responses indicated 26 percent of county maintained roads are in poor condition, 34 percent are in fair condition and 41 percent are in good condition.

CHART 1: Share of county maintained roads in poor, fair or good condition in Highway District 11.



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 38 percent of Highway District 11's county-maintained roads are in need of resurfacing, but current funding levels will only allow for the resurfacing of one percent of county-maintained roads in 2017. The survey also found that eight percent of Highway District 11's county-maintained roads are in need of reconstruction, but current funding will only allow for the reconstruction of less than one percent of county-maintained roads in 2017.

Bridge Conditions:

Highway District 11 has 1,183 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, 249 of these bridges (21 percent) were rated as structurally deficient. Forty-four of the 249 structurally deficient bridges in Highway District 11 are posted with weight-restrictions, which limits 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 provides information on the 25 most heavily traveled structurally deficient bridges in Highway District 11.

CHART 2: Most heavily traveled structurally deficient bridges in Highway District 11

Rank	County	City	Route Carried	Feature Intersected	Location	Year Built	Avg. Daily Traffic
1	Laurel		I-75	LAUREL RIVER	NBL 1.5 MI N OF US25E NTR	1969	26,413
2	Laurel		I-75 NC	KY 2041	SBL 1.6MI N OF KY 80 NTRC	1969	22,840
3	Laurel		I-75	KY 2041	NBL 1.6MI N OF KY 80 NTRC	1969	22,840
4	Laurel		US-25	ROBINSON CREEK	.40 MI N OF N-JCT KY 2392	1940	11,818
5	Jackson		US-421	PIGEON ROOST CRK	.20 MI E OF E-JCT KY 89	1928	8,172
6	Laurel		KY-80	LICK FORK CREEK	.60 MI EAST OF JCT KY 830	1928	6,670
7	Laurel		KY-80	LITTLE SANDY CREEK	.25 MI EAST OF JCT KY 488	1928	6,670
8	Laurel		KY-490	CSX RAILROAD	.05 MI N.E. OF JCT US 25	1941	5,887
9	Bell	Middlesborough	15TH STREET	LITTLE YELLOW CREEK	.30 MI N OF JCT KY 74	1930	5,782
10	Knox		KY-11	CUMBERLAND RIVER	.2 MI S-JCT US 25E BUS.	1967	4,067
11	Leslie		US-421	MUNCY CREEK	2.0 MI S OF JCT KY 2431	1937	4,026
12	Bell		CR-1111A	YELLOW CREEK	.1 MI S. KY 1534	1989	3,900
13	Knox		KY-11	LITTLE RICHLAND CREEK	2.4 MI NE OF JCT KY 2418	1946	3,879
14	Clay		KY-2438	CSX RR & GOOSE CREEK	.01 MI EAST OF JCT US 421	1952	3,871
15	Whitley		KY-92	JELLICO CREEK	2.7 MI E of JCT KY-1673	1932	2,824
16	Leslie		US-421	STINNETT CREEK	.10 MI SOU. OF JCT KY 406	1938	2,494
17	Bell		KY-221	STONY FORK CREEK	.05 MI W OF JCT KY 2011	1949	2,370
18	Leslie		KY-80	CUTSHIN CREEK	.10 MI SOU. OF JCT KY 699	1929	2,247
19	Bell		BELT LINE RD	POLLY HOLLOW BRANCH	.05 MI E OF JCT KY 2396	1957	2,138
20	Knox		KY-1304	LITTLE RICHLAND CREEK	1.5 MI NE&S OF JCT KY 11	1977	2,008
21	Leslie		KY-2431	MIDDLE FORK OF KY RIVER	.05 MI EAST OF JCT US 421	1960	1,977
22	Clay		KY-66	JACKS CREEK	1.5 MI SE OF JCT KY 149	1958	1,960
23	Laurel		KY-80	HOOPPOLE CREEK	.80 MI E OF JCT KY 1803	1928	1,955
24	Whitley		KY-92	PLEASANT RUN	.10 MI E OF MCCREARY CL	1932	1,767
25	Laurel		KY-1223	HORSE CREEK	.30 MI N.W. OF JCT US 25E	1935	1,679

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 11(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	Whitley		OLD MOUNTAIN ASH P	CLEAR FORK	.2 MI S OF JCT CR 5261	1917	300
2	Whitley		WATTS CREEK ROAD	WATTS CREEK	.1 MI NW OF JCT US 25W	1935	250
3	Leslie		CR-1207	MIDDLE FK KY RVR	.05 MI N OF JCT KY 1780	1940	100
4	Knox		CR-1325	MIDDLE FORK CREEK	.15 MI WEST OF JCT US 25E	1924	221
5	Clay		OLD HIGHWAY 66	RED BIRD RIVER	.3 MI. E JCT KY 66	1988	103
6	Leslie		KY-80	CUTSHIN CREEK	.10 MI SOU. OF JCT KY 699	1929	2,247
7	Clay		KY-2432	HART BRANCH	SW @ JCT CR 5341	1963	1,626
8	Clay		CR-1255	HORSE CREEK	0.1 MI. S. KY 80	1984	259
9	Leslie		KY-1780	MID-FK KY RVR	.95 MI S OF JCT KY 2058	1968	171
10	Leslie		CR-1006	RACCOON CREEK	10 M/P 2057	1931	150
11	Knox		BINGHAM ROAD	CUMBERLAND RIVER	.6 MI S-OLD RR LANE	1905	119
12	Bell	Middlesborough	15TH STREET	LITTLE YELLOW CREEK	.30 MI N OF JCT KY 74	1930	5,782
13	Bell		KY-221	STONY FORK CREEK	.05 MI W OF JCT KY 2011	1949	2,370
14	Whitley		KY-92	PLEASANT RUN	.10 MI E OF MCCREARY CL	1932	1,767
15	Whitley		KY-204	YOUNGS CREEK	1.5 MI WEST OF JCT US 25W	1970	1,356
16	Laurel		KY-638	BIG RACCOON CREEK	.85 MI S OF W-JCT KY 578	1973	702
17	Leslie		KY-2057	CUTSHIN CREEK	.01 MI EAST OF JCT KY 699	1977	545
18	Jackson		KY-2004	S.FK.STATION CAMP CRK	3.0 MI N.W. OF JCT US 421	1975	456
19	Leslie		COON CREEK RD	RACCOON CREEK	.1 MI SW OF JCT CR 5104	1981	250
20	Clay		OTTER CREEK ROAD	GOOSE CREEK	.1 MI S OF JCT KY 1524	1936	209
21	Whitley		OLD JELLICO CREEK	PAINT CREEK	1 MI E OF JCT KY 1898	1950	150
22	Clay		FRANK BOWLING ROAD	REDBIRD RIVER	N @JCT KY 66 @PEABODY	1935	104
23	Clay		CR-1159	GOOSE CREEK	.1 MI.W. KY 1524	1988	103
24	Leslie		CR-1331	ROCKHOUSE CREEK	.1 MI SE OF US 421&KY	1940	100
25	Whitley		BETHEL ROAD	PATTERSON CREEK	.1 MI N OF JCT CR 5227	1945	100

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 156 traffic fatalities in Highway District 11, an average of 52 fatalities per year. Fifty-six percent of traffic fatalities in Highway District 11 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 575 serious injuries as a result of traffic crashes in Highway District 11, an average of 192 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 11 during the three-year period of 2014 to 2016 was 1.84 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 11:

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 11 were, in order:

1. need for additional road rehabilitation and repair;
2. need for additional roadway capacity to support economic development; and,
3. need for additional roadway safety improvments.