Kentucky Highway District 7

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 7, which is located in the central portion of the state and includes the following 12 counties: Anderson, Bourbon, Boyle, Clark, Fayette, Garrard, Jessamine, Madison, Mercer, Montgomery, Scott and Woodford.

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

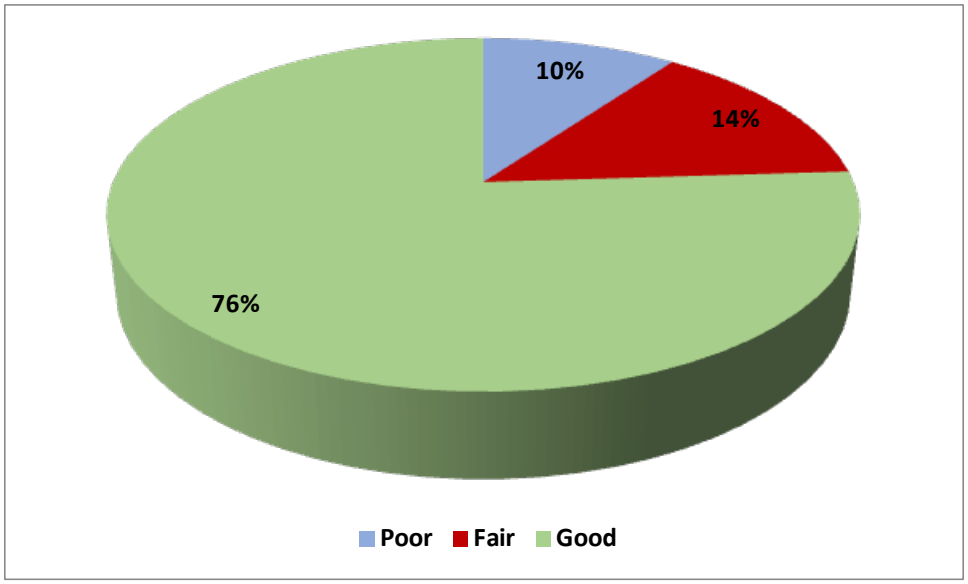
The 12 counties that comprise District 7 were home to 715,000 residents in 2016, based on estimates from the U.S. Census Bureau. Vehicle travel in District 7 totaled 7.5 billion miles in 2016, an increase of six percent from 2014 ((according to data provided to TRIP by the Kentucky Office of Highway 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 7. Survey responses indicated 10 percent of county maintained roads are in poor condition, 14 percent are in fair condition and 76 percent are in good condition.

CHART 1: Share of county maintained roads in poor, fair or good condition in Highway District 7.



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 18 percent of Highway District 7'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 five percent of Highway District 7'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 7 has 1,260 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, 61 of these bridges (five percent) were rated as structurally deficient. Thirty-one of the 61 structurally deficient bridges in Highway District 7 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 7.

CHART 2: Most heavily traveled structurally deficient bridges in Highway District 7

Rank	County	City	Route Carried	Feature Intersected	Location	Year Built	Avg. Daily Traffic
1	Fayette		US-25	I-75	1.2 MI S OF JCT KY 1973	1963	23,029
2	Fayette		KY-922	NEW CIRCLE ROAD	NBL OVR NEW CIRCLE-KY4NTR	1964	18,407
3	Boyle	Danville	SOUTH 2ND STREET	CLARKS RUN	2ND ST IN DANVILLE	1988	6,149
4	Bourbon		US-27	TOWNSEND CREEK	ON HARRISON-BOURBON CL	1948	5,413
5	Fayette		MALABU DRIVE	BRANCH-HICKMAN CRK.	W @JCT-TATES CR RD-KY1974	1970	5,124
6	Scott	Georgetown	LEMONS MILL RD	NS (CNO&TP) SYSTEM	.5 MI E-BROADWAY-US 25	1971	2,866
7	Fayette		HUME RD	DAVID FORK-N.ELKHORN	.8 MI N OF JCT US 60	1945	2,578
8	Madison		KY-3376	TERRILL BRANCH	.3 MI E OF JCT W/KY 1016	1938	2,557
9	Montgomery		KY-1991	HINKSTON CR.	.70 MI S. OF I-64 OP	1972	2,270
10	Garrard		KY-1295	BACK CREEK	2.6 MI E OF JCT W/KY 563	1955	1,956
11	Montgomery		EAST LOCUST STREET	HINKSTON CREEK	100' E OF TENNEY AVE	1965	1,681
12	Fayette		KY-2335	BRANCH OF ELKHORN CR.	.3 MI NORTH JCT 57 @ AVON	1985	1,308
13	Mercer		KY-152	HERRINGTON LAKE	AT GARRARD - MERCER CL	1924	1,253
14	Clark	Winchester	JACKSON STREET	ABANDONED CSX RR	.1 MI S-WINN AVE-KY 15	1955	1,194
15	Garrard		KY-1972	GILBERTS CREEK	1.4 MI EAST OF JCT KY 39	1950	882
16	Garrard		KY-1972	BRANCH OF GILBERTS CRK	1.6 MI EAST OF JCT KY 39	1935	882
17	Jessamine		KY-39	HICKMAN CRK @BLACK BRD	1 MI N OF JCT KY 1268	1929	868
18	Anderson		KY-44	WOLF CREEK	.10 MI WEST OF JCT KY 53-	1933	797
19	Boyle		KY-3042	DIX RVR-HERRINGTON LAKE	ON GARRARD - BOYLE CL	1924	630
20	Jessamine		KY-1268	HICKMAN CREEK	2.8 MI. S. JCT. W/US 27	1983	621
21	Woodford		WEISENBERGER MILL	SOUTH ELKHORN CREEK	1.8 MI N OF JCT KY 1681	1930	602
22	Boyle		KY-1920	WILSON CREEK	.05 MI SOU. OF MERCER CL	1965	568
23	Mercer		ALFORD RD	S.FK. BUCHANAH CREEK	.8 MI W OF JCT KY 1987	1965	559
24	Montgomery		KY 713	SALT WELL BRANCH	.4 MI. S OF JCT. KY. 965	1953	509
25	Garrard		OLD LEXINGTON ROAD	KENTUCKY RIVER	@ JESSAMINE CO.LN.	1927	478

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 7 with the lowest average rating for deck, substructure and superstructure (carrying a minimum of 100 vehicles per day). 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	Garrard		OLD LEXINGTON ROAD	KENTUCKY RIVER	@ JESSAMINE CO.LN.	1927	478
2	Scott		GALLOWAY RD	NORTH ELKHORN CREEK	1.1 MI S OF JCT KY 227	1910	225
3	Scott		BRIDGE ST	NS (CNO&TP) SYSTEM	250 FT E OF BROWN ST	1930	200
4	Madison		OLD HAYES FORK ROAD	BR OF HAYS FORK	.1 MI N OF JCT KY 499	1938	115
5	Woodford		WEISENBERGER MILL	SOUTH ELKHORN CREEK	1.8 MI N OF JCT KY 1681	1930	602
6	Fayette		MALABU DRIVE	BRANCH-HICKMAN CRK.	W @JCT-TATES CR RD-KY1974	1970	5,124
7	Madison		KY-3376	TERRILL BRANCH	.3 MI E OF JCT W/KY 1016	1938	2,557
8	Mercer		KY-152	HERRINGTON LAKE	AT GARRARD - MERCER CL	1924	1,253
9	Garrard		KY-1972	GILBERTS CREEK	1.4 MI EAST OF JCT KY 39	1950	882
10	Garrard		KY-1972	BRANCH OF GILBERTS CRK	1.6 MI EAST OF JCT KY 39	1935	882
11	Jessamine		KY-39	HICKMAN CRK @BLACK BRD	1 MI N OF JCT KY 1268	1929	868
12	Jessamine		KY-1268	HICKMAN CREEK	2.8 MI. S. JCT. W/US 27	1983	621
13	Scott		KY-1689	LECOMPTES RUN	.40 MI WEST OF JCT KY 227	1969	230
14	Fayette		KY-922	NEW CIRCLE ROAD	NBL OVR NEW CIRCLE-KY4NTR	1964	18,407
15	Boyle	Danville	SOUTH 2ND STREET	CLARKS RUN	2ND ST IN DANVILLE	1988	6,149
16	Scott	Georgetown	LEMONS MILL RD	NS (CNO&TP) SYSTEM	.5 MI E-BROADWAY-US 25	1971	2,866
17	Garrard		KY-1295	BACK CREEK	2.6 MI E OF JCT W/KY 563	1955	1,956
18	Clark	Winchester	JACKSON STREET	ABANDONED CSX RR	.1 MI S-WINN AVE-KY 15	1955	1,194
19	Boyle		KY-3042	DIX RVR-HERRINGTON LAKE	ON GARRARD - BOYLE CL	1924	630
20	Madison		PEACOCK ROAD	E. FK. OTTER CREEK	1.6 MI E OF JCT KY 388	1965	473
21	Anderson		KY-44	CROOKED CREEK	E OF SPENCER-ANDERSON CL	1933	309
22	Scott		KY-1689	LOCUST FORK	.05 MI WEST OF JCT KY 227	1969	230
23	Garrard		KY-563	SUGAR CREEK	S. JCT KY 39	1984	172
24	Scott		KY-32	LYTLES FORK	.4 MI E OF JCT CR 5314	1969	135
25	Montgomery		KY-1991	HINKSTON CR.	.70 MI S. OF I-64 OP	1972	2,270

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 319 traffic fatalities in Highway District 7, an average of 106 fatalities per year. Forty-nine percent of traffic fatalities in Highway District 7 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 1,307 serious injuries as a result of traffic crashes in Highway District 7, an average of 436 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 7 during the three-year period of 2014 to 2016 was 1.45 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 7:

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 7 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 bridge repairs and replacements.