



Kentucky Highway District 3

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 3, which is located in the south-central portion of the state and includes the following 10 counties: Allen, Barren, Butler, Edmonson, Logan, Metcalfe, Monroe, Simpson, Todd and Warren.

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

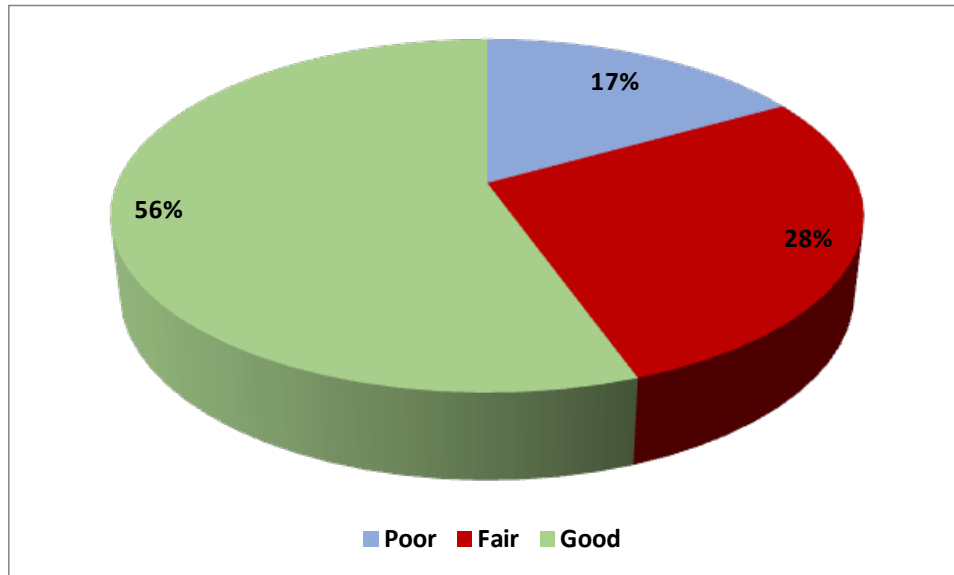
The 10 counties that comprise District 3 were home to 293,000 residents in 2016, based on estimates by the U.S. Census Bureau. Vehicle travel in District 3 totaled 3.6 billion miles in 2016, an increase of four percent from 2014 (based on data provided to TRIP by the Kentucky Office of Highway Safety).

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 3. Survey responses indicated 17 percent of county maintained roads are in poor condition, 28 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 3.



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 3's county-maintained roads are in need of resurfacing, but current funding levels will only allow for the resurfacing of less than three percent of county-maintained roads in 2017. The survey also found that seven percent of Highway District 3'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 3 has 864 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, 25 of these bridges (three percent) were rated as structurally deficient. Seventeen of the 25 structurally deficient bridges in Highway District 3 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 most heavily traveled structurally deficient bridges in Highway District 3.

CHART 2: Most heavily traveled structurally deficient bridges in Highway District 3

Rank	County	City	Route Carried	Feature Intersected	Location	Year Built	Avg. Daily Traffic
1	Barren		WEST MAIN STREET	WATER STREET	.2 MI N OF MAIN ST-KY 90	1959	7,246
2	Edmonson		KY-70	GREEN RIVER & CR 1203	GREEN RVR @ BROWNSVILLE	1950	7,042
3	Monroe		KY-1366	TRIB-E.FK. BARREN RVR	3.7 MI W OF JCT KY 100	1971	1,210
4	Allen		KY-3499	BAYS FORK	1.3 MI NOR. OF JCT KY 98	1925	1,198
5	Butler		KY-70	PANTHER CREEK	1.6 MI EAST OF JCT KY 106	1938	1,196
6	Edmonson		KY-70	BEAR CREEK	.35 MI EAST OF JCT KY 187	1933	1,157
7	Metcalfe		KY-1243	KNOB LICK SPRINGS	0.05 MI S OF JCT. W/KY 70	1969	1,053
8	Monroe		KY-2768	E FK BARREN RIVER	1.51 MI EAST JCT KY 839	1929	805
9	Simpson		KY-621	SINKING CREEK	2.0 MI N OF JCT US 31W	1960	557
10	Edmonson		KY-422	BEAVER DAM CREEK	1.4 MI.N-JCT. US 31W	1940	551
11	Butler		WAVERLY SCH RD	LITTLE BULL CREEK	1.3 MI.EAST OF KY 1328	1984	535
12	Allen		KY-585	MIDDLE FORK DRAKES CRK	AT SIMPSON - ALLEN CL	1950	321
13	Edmonson		KY-743	BEAVER DAM CREEK	1.1 MI WEST OF JCT KY 422	1935	251
14	Metcalfe		MOSBY RIDGE RD	E FORK LITTLE BARREN RVR	.3 MI E OF JCT KY 80	1911	200
15	Warren		OLD RICHARDSVILLE	BARREN RIVER	0.2 MI W OF JCT KY 185	1920	165

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 structurally deficient bridges in Highway District 3 (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	Allen		KY-3499	BAYS FORK	1.3 MI NOR. OF JCT KY 98	1925	1,198
2	Edmonson		KY-70	BEAR CREEK	.35 MI EAST OF JCT KY 187	1933	1,157
3	Monroe		KY-2768	E FK BARREN RIVER	1.51 MI EAST JCT KY 839	1929	805
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7	Edmonson		KY-70	GREEN RIVER & CR 1203	GREEN RVR @ BROWNSVILLE	1950	7,042
8	Butler		KY-70	PANTHER CREEK	1.6 MI EAST OF JCT KY 106	1938	1,196
9	Metcalfe		KY-1243	KNOB LICK SPRINGS	0.05 MI S OF JCT. W/KY 70	1969	1,053
10	Metcalfe		MOSBY RIDGE RD	E FORK LITTLE BARREN RVR	.3 MI E OF JCT KY 80	1911	200
11	Warren		OLD RICHARDSVILLE	BARREN RIVER	0.2 MI W OF JCT KY 185	1920	165
12	Todd		SHARON GROVE RD	TRIB. OF LITTLE CLIFFY C	2.8 MI N OF JCT KY 106	1970	110
13	Barren		WEST MAIN STREET	WATER STREET	.2 MI N OF MAIN ST-KY 90	1959	7,246
14	Monroe		KY-1366	TRIB-E.FK. BARREN RVR	3.7 MI W OF JCT KY 100	1971	1,210
15	Edmonson		KY-422	BEAVER DAM CREEK	1.4 MI.N-JCT. US 31W	1940	551

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 166 traffic fatalities in Highway District 3, an average of 55 fatalities per year. Fifty-two percent of traffic fatalities in Highway District 3 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 541 serious injuries as a result of traffic crashes in Highway District 3, an average of 180 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 3 during the three-year period of 2014 to 2016 was 1.57 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 3:

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 3 were, in order:

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