
# Kentucky Highway District 9

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

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PREPARED BY

TRIP
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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 9, which is located in the northeast portion of the state and includes the following 10 counties: Bath, Boyd, Carter, Elliott, Fleming, Greenup, Lewis, Mason, Nicholas and Rowan.

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

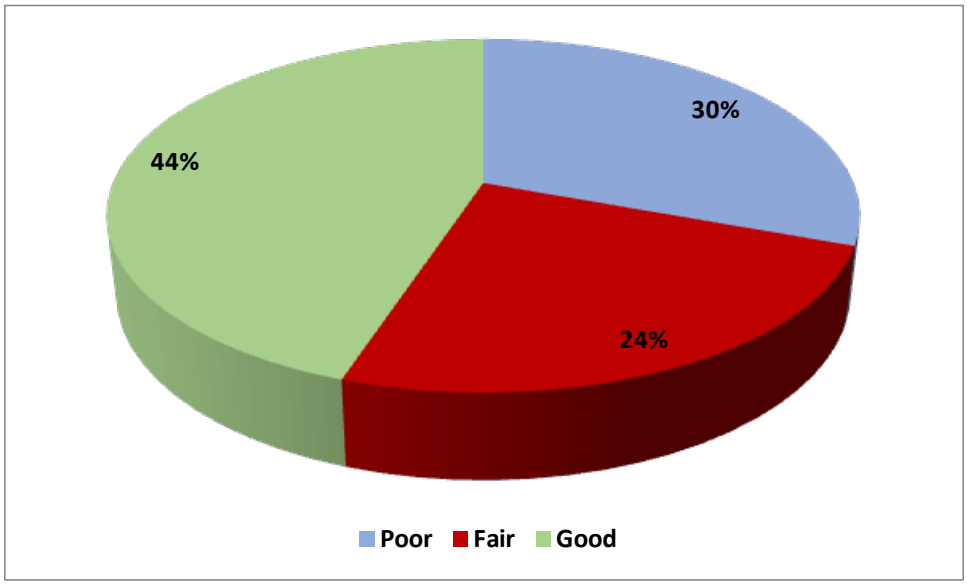
The 10 counties that comprise District 9 were home to 208,000 residents in 2016, based on estimates by the U.S. Census Bureau. Vehicle travel in District 9 totaled 2.2 billion miles in 2016, an increase of two percent from 2014 (based on data provided to TRIP by the Kentucky Office of Highway Safety).

## 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 9. Survey responses indicated 30 percent of county maintained roads are in poor condition, 24 percent are in fair condition and 44 percent are in good condition.

**CHART 1: Share of county maintained roads in poor, fair or good condition in Highway District 9.**




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 45 percent of Highway District 9'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 20 percent of Highway District 9's county-maintained roads are in need of reconstruction, but current funding will only allow for the reconstruction of one percent of county-maintained roads in 2017.

## Bridge Conditions:

Highway District 9 has 1,145 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, 73 of these bridges (six percent) were rated as structurally deficient. Thirty-eight of the 73 structurally deficient bridges in Highway District 9 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 9.

**CHART 2: Most heavily traveled structurally deficient bridges in Highway District 9**

| Rank | County | City | Route Carried | Feature Intersected | Location | Year Built | Avg. Daily Traffic |
|---|---|---|---|---|---|---|---|
| 1 | Greenup | | BELLEFONTE ST | CSX RAILROAD | .05 MI N.E. OF JCT US 23 | 1938 | 9,020 |
| 2 | Mason | | US-62 | LAWRENCE CREEK | 2.6 MI. N. JCT KY 9 | 1996 | 4,549 |
| 3 | Nicholas | | KY-36 | BRUSHY FORK | .10 MI WEST OF JCT KY 13 | 1932 | 3,699 |
| 4 | Carter | | KY-1 | POWELL BRANCH | .02 MI SOU OF JCT KY 773 | 1942 | 3,300 |
| 5 | Fleming | | KY-32 | MUD LICK CREEK | 1.2 MI EAST OF JCT KY 170 | 1929 | 3,035 |
| 6 | Carter | | US-60 | TYGARTS CREEK | .75 MI E OF JCT KY 1662 | 1923 | 2,962 |
| 7 | Carter | | KY-3297 | UPPER STINSON CREEK | .4 MI E OF JCT KY 1910 | 1970 | 2,009 |
| 8 | Carter | | KY-773 | LITTLE SANDY RIVER | 1.0 MI S.E. OF JCT KY 7 | 1913 | 1,910 |
| 9 | Carter | | KY-773 | LITTLE SANDY RIVER | 1.2 MI S.E. OF JCT KY 7 | 1913 | 1,910 |
| 10 | Lewis | | KY-57 | N.FK.LICKING RIVER | ON FLEMING - LEWIS CL | 1935 | 1,791 |
| 11 | Carter | | KY-174 | TYGARTS CREEK | .20 MI SOU. OF JCT US 60 | 1969 | 1,755 |
| 12 | Fleming | | KY-111 | ALLISON CREEK | 1.2 MI NOR. OF JCT KY 156 | 1927 | 1,326 |
| 13 | Greenup | | KY-1 | LOST CREEK | .05 MI SOU. OF JCT KY 784 | 1940 | 1,194 |
| 14 | Fleming | | KY-111 | BR OF HILLSBORO CREEK | .4 MI N OF JCT KY 1515 | 1927 | 1,160 |
| 15 | Lewis | | QUICKS RUN RD. | MARTIN FORK | 5.266 MI. W. of JCT. KY 8 | 2001 | 930 |
| 16 | Greenup | | KY-503 | INDIAN RUN CREEK | .20 MI SOU. OF JCT KY 207 | 1951 | 802 |
| 17 | Carter | | HARVEY BRANCH | BUFFALO CREEK | 0.289 MI E OF KY 9 (AA) | 1970 | 669 |
| 18 | Lewis | | KY-344 | GRASSY BRANCH | .05 MI WEST OF JCT KY 59 | 1935 | 598 |
| 19 | Nicholas | | KY-32 | TRIB-HOOKTOWN BRANCH | .1 MI E OF JCT KY 1298 | 1929 | 566 |
| 20 | Rowan | | HOLLY FORK RD. | HOLLY FORK | 1.2 MI E KY-799 | 1975 | 532 |
| 21 | Rowan | | LITTLE PERRY RD | TRIPLETT CREEK | .2 MI N OF JCT US 60 | 1969 | 462 |
| 22 | Fleming | | KY-367 | JOHNSON CREEK | 1.1 MI N.W. OF JCT KY 170 | 1975 | 429 |
| 23 | Lewis | | KY-1237 | POWERLICK CREEK | .35 MI N.W. OF JCT KY 989 | 1979 | 351 |
| 24 | Mason | | KY-3056 | S FORK LAWRENCE CREEK | .75 MI WEST OF JCT KY 576 | 1947 | 282 |
| 25 | Greenup | | WILLIAMS AVE | POND RUN | 250 WEST POND RUN RD | 1975 | 279 |

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 9 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 | Carter | | HARVEY BRANCH | BUFFALO CREEK | 0.289 MI E OF KY 9 (AA) | 1970 | 669 |
| 2 | Nicholas | | OLD US 68 CONNECT | LICKING RIVER | .5 MI W OF JCT NEW US 68 | 1917 | 215 |
| 3 | Greenup | Greenup | JEFFERSON ST | TOWN BRANCH | 100 S. JCT KY 2541 | 1916 | 124 |
| 4 | Carter | | EK RAILROAD DR | LITTLE SANDY RIVER | 1.13 MI W JCT KY 773 | 1873 | 100 |
| 5 | Carter | | EK RAILROAD DR | LITTLE SANDY RIVER | .724 MI W JCT KY 773 | 1873 | 100 |
| 6 | Carter | | KY-773 | LITTLE SANDY RIVER | 1.2 MI S.E. OF JCT KY 7 | 1913 | 1,910 |
| 7 | Mason | | KY-3056 | S FORK LAWRENCE CREEK | .75 MI WEST OF JCT KY 576 | 1947 | 282 |
| 8 | Greenup | | BELLEFONTE STREET | CSX RAILROAD | .05 MI N.E. OF JCT US 23 | 1938 | 9,020 |
| 9 | Fleming | | KY-32 | MUD LICK CREEK | 1.2 MI EAST OF JCT KY 170 | 1929 | 3,035 |
| 10 | Carter | | US-60 | TYGARTS CREEK | .75 MI E OF JCT KY 1662 | 1923 | 2,962 |
| 11 | Carter | | KY-773 | LITTLE SANDY RIVER | 1.0 MI S.E. OF JCT KY 7 | 1913 | 1,910 |
| 12 | Greenup | | KY-207 | SANDSUCK CREEK | 2.4 MI S OF S-JCT KY 1 | 1930 | 210 |
| 13 | Nicholas | | KY-36 | BRUSHY FORK | .10 MI WEST OF JCT KY 13 | 1932 | 3,699 |
| 14 | Carter | | KY-3297 | UPPER STINSON CREEK | .4 MI E OF JCT KY 1910 | 1970 | 2,009 |
| 15 | Carter | | KY-174 | TYGARTS CREEK | .20 MI SOU. OF JCT US 60 | 1969 | 1,755 |
| 16 | Fleming | | KY-111 | BR OF HILLSBORO CREEK | .4 MI N OF JCT KY 1515 | 1927 | 1,160 |
| 17 | Lewis | | KY-344 | GRASSY BRANCH | .05 MI WEST OF JCT KY 59 | 1935 | 598 |
| 18 | Bath | | KY-1944 | WHITE OAK CREEK | 2.7MI.NEJCT. KY 36 | 1990 | 254 |
| 19 | Carter | | KY-182 | SINKING CREEK | 2 MI NOR. JCT KY 986 | 1987 | 230 |
| 20 | Carter | | CR-1053 | TAR KILL BRANCH | .05 MI W OF E-JCT US 60 | 1955 | 120 |
| 21 | Mason | | US-62 | LAWRENCE CREEK | 2.6 MI. N. JCT KY 9 | 1996 | 4,549 |
| 22 | Lewis | | KY-57 | N.FK.LICKING RIVER | ON FLEMING - LEWIS CL | 1935 | 1,791 |
| 23 | Fleming | | KY-111 | ALLISON CREEK | 1.2 MI NOR. OF JCT KY 156 | 1927 | 1,326 |
| 24 | Lewis | | QUICKS RUN RD. | MARTIN FORK | 5.266 MI. W. of JCT. KY 8 | 2001 | 930 |
| 25 | Fleming | | KY-367 | JOHNSON CREEK | 1.1 MI N.W. OF JCT KY 170 | 1975 | 429 |

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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 95 traffic fatalities in Highway District 9, an average of 32 fatalities per year. Fifty-three percent of traffic fatalities in Highway District 9 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 456 serious injuries as a result of traffic crashes in Highway District 9, an average of 152 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 9 during the three-year period of 2014 to 2016 was 1.42 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 9:

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 9 were, in order:

1. need for additional road rehabilitation and repair;
2. need for additional bridge repairs and replacements; and,
3. need for additional funding for road, highway and bridge improvements.