
# Kentucky Highway District 5

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

MARCH 2018

PREPARED BY

TRIP
a national transportation research group
WWW.TRIPNET.ORG

*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 5, which is located in the north-central portion of the state and includes the following eight counties: Bullitt, Franklin, Henry, Jefferson, Oldham, Shelby, Spencer and Trimble.

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

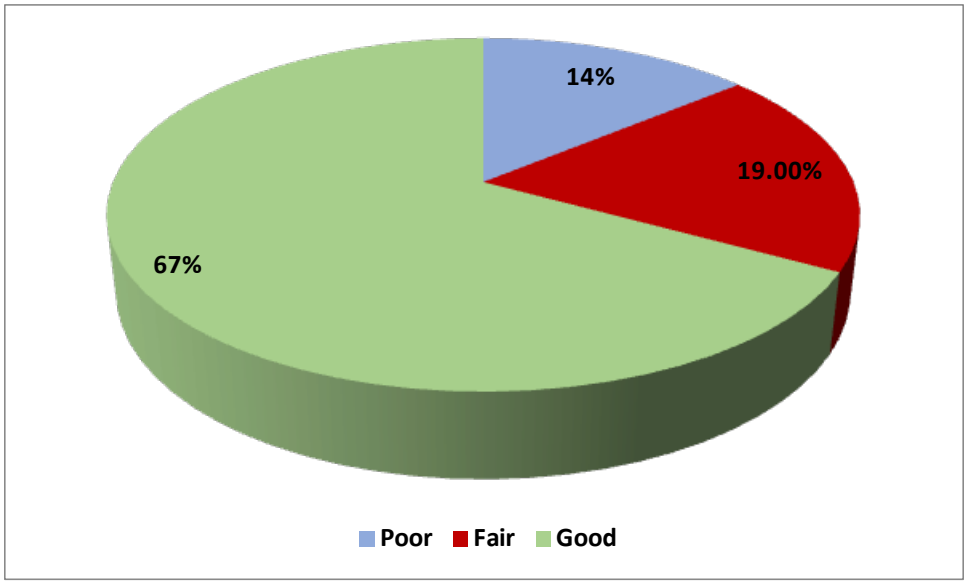
The eight counties that comprise District 5 were home to 1,050,000 residents in 2016. Vehicle travel in District 5 totaled 10.5 billion miles in 2016, an increase of three percent from 2014.

## 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 5. Survey responses indicated 14 percent of county maintained roads are in poor condition, 19 percent are in fair condition and 67 percent are in good condition.

**CHART 1: Share of county maintained roads in poor, fair or good condition in Highway District 5.**




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 22 percent of Highway District 5's county-maintained roads are in need of resurfacing, but current funding levels will only allow for the resurfacing of 25 percent of county-maintained roads in need of resurfacing in 2017. The survey also found that three percent of Highway District 5's county-maintained roads are in need of reconstruction, but current funding will only allow for the reconstruction of 12 percent of county-maintained roads in need of reconstruction in 2017.

## Bridge Conditions:

Highway District 5 has 1,226 bridges that are at least 20 feet long and are included in the Federal Highway Administration's National Bridge Inventory. In 2016, 123 of these bridges (ten percent) were rated as structurally deficient. Thirty-nine of the 123 structurally deficient bridges in Highway District 5 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 5.

**CHART 2: Most heavily traveled structurally deficient bridges in Highway District 5**

| Rank | County | City | Route Carried | Feature Intersected | Location | Year Built | Avg. Daily Traffic |
|---|---|---|---|---|---|---|---|
| 1 | Jefferson | | I-65 | CSX RR BURNETT HILL ST | 1 MI N JCT US 60A | 1957 | 112,238 |
| 2 | Jefferson | | I-65 | BRANDEIS AVE | .4 MI N OF EASTERN PKWY | 1957 | 112,238 |
| 3 | Jefferson | | I-64 | CSX 1ST FLYD PRESTN RVR | 2ND ST E TO PRESTON ST | 1965 | 90,900 |
| 4 | Jefferson | | I-64 | 3RD 5TH RVR RD BELVEDERE | 2ND ST WEST TO 7TH ST | 1972 | 90,900 |
| 5 | Jefferson | | I-65 | BROOK ST MUHAMMAD ALI | 1 MI S OF KENNEDY BRIDGE | 1963 | 84,001 |
| 6 | Jefferson | | CHAMPIONS TRACE LN | S FK BEARGRASS CREEK | .2 MI W OF JCT HIKES LN | 1960 | 75,342 |
| 7 | Jefferson | | I-264 | P AND L RAILWAY WYE | 200 E-CMPGRND RD-KY 2051 | 1970 | 72,836 |
| 8 | Jefferson | | I-64 | OLD P AND L RR (7-13 ST) | 7TH TO 13TH ST | 1976 | 66,733 |
| 9 | Jefferson | | I-64 EB | TUCKER STATION RD | EBL 1.1 MI W OF I-265 NTR | 1963 | 42,100 |
| 10 | Jefferson | | I-64 WB | MID FK BEARGRASS CREEK | WBL .8MI W OF I-264 INTRC | 1966 | 40,258 |
| 11 | Jefferson | | I-64 EB | MID FK BEARGRASS CREEK | EBL .8MI W OF I-264 INTRC | 1966 | 40,258 |
| 12 | Jefferson | | BROWNSBORO RD | I-264 | .1 MI W OF JCT KY 22 | 1967 | 40,034 |
| 13 | Jefferson | | I-71 SB | US 42 | SBL 1 MI N OF I-264 NTRCH | 1967 | 37,369 |
| 14 | Jefferson | | KY 864 | BR OF GREASY DITCH | .11 MI N OF PRODUCE RD | 1965 | 30,387 |
| 15 | Jefferson | | US 31E | NORFOLK SOUTHERN RR | .5 MI S OF HIKES LN | 1956 | 29,000 |
| 16 | Franklin | | I-64 WB | KY 151 | WBL 1.5 MI E OF SHELBY CL | 1960 | 23,341 |
| 17 | Franklin | | I-64 WB | BENSON CREEK | WBL .5 MI W OF KY 151 NTR | 1960 | 23,341 |
| 18 | Franklin | | I-64 EB | BENSON CREEK | EBL .5 MI W OF KY 151 NTR | 1960 | 23,341 |
| 19 | Shelby | | I-64 WB | BARDSTOWN TRL GOOSE CK | WBL 2.0 MI E OF KY395 NTR | 1960 | 23,341 |
| 20 | Franklin | | I-64 WB | KENTUCKY RIVER | WBL 2.3MI E OF US 127 NTR | 1963 | 23,287 |
| 21 | Franklin | | I-64 EB | KENTUCKY RIVER | EBL 2.3MI E OF US 127 NTR | 1963 | 23,287 |
| 22 | Franklin | | I-64 EB | KY 151 | EBL 1.5 MI E OF SHELBY CL | 1960 | 21,079 |
| 23 | Jefferson | | KY 155 | POPE LICK CREEK | .1 MI W OF JCT KY 2265 | 1957 | 19,073 |
| 24 | Jefferson | | EASTERN PKWY | S FK BEARGRASS CREEK | .2 MI E-POPLAR LVL-KY 864 | 1954 | 17,484 |
| 25 | Jefferson | | GRADE LN | NORTHERN DITCH | .25 MI S OF JCT KY 1631 | 1950 | 12,988 |

Indicates bridge is currently closed

Indicates bridge is restricted to only lower-weight vehicles

**Source: Federal Highway Administration National Bridge Inventory, 2017.**

The following chart provides information on the 25 structurally deficient bridges in Highway District 5 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 | Jefferson | Jeffersontown | ACCESS RD/OLD 1819 | CHENOWETH RUN | .1 MI NE OF GRAND AVE | 1925 | 6,705 |
| 2 | Jefferson | | CR 1038L | BEE LICK CREEK | 0.15 MI NE NEW CUT RD | 1940 | 2,511 |
| 3 | Shelby | | JAIL HILL RD | CLEAR CREEK | .1 MI N-WASH ST-US 60 WB | 1982 | 145 |
| 4 | Jefferson | Indian Hills | STONEBRIDGE RD | TRIB MUDDY FK BEARGRASS | JCT W/ BLANKENBAKER LN | 1930 | 1,149 |
| 5 | Henry | | KY 3175 | WHITE SULPHUR FORK | .06 MI N JCT KY 157 | 1917 | 192 |
| 6 | Trimble | | KY 2871 | LITTLE KENTUCKY RIVER | .04 MI W OF JCT KY 1335 | 1970 | 375 |
| 7 | Shelby | | KY 636 | LITTLE BEECH CREEK | 1.0 MI N OF JCT KY 53 | 1951 | 210 |
| 8 | Franklin | | HARVIELAND RD | DAVIS BRANCH | 1.85 MI S OF JCT KY 12 | 1950 | 206 |
| 9 | Spencer | | WASHBURN LN | ELK CREEK | 150 W OF JCT KY 55 | 1989 | 155 |
| 10 | Jefferson | | I-65 | BRANDEIS AVE | .4 MI N OF EASTERN PKWY | 1957 | 112,238 |
| 11 | Jefferson | | US 31E | NORFOLK SOUTHERN RR | .5 MI S OF HIKES LN | 1956 | 29,000 |
| 12 | Jefferson | | BLUE LICK RD | FISHPOOL CREEK | .5 MI SW-PRESTON HWY-KY61 | 1950 | 11,179 |
| 13 | Shelby | | US 60 EB | CLEAR CREEK | 0.228 MI W OF JCT KY 53 | 1941 | 9,506 |
| 14 | Franklin | | US 60X | KENTUCKY RIVER | 300 FT W OF 2ND ST | 1893 | 4,789 |
| 15 | Jefferson | | S WATTERSON TRL | FERN CREEK | .7MI S-BARDSTOWN RD-KY150 | 1940 | 3,849 |
| 16 | Bullitt | | KY 1116 | TANYARD BR OF CEDAR CRK | .35 MI E OF JCT KY 61 | 1925 | 3,815 |
| 17 | Jefferson | | SCENIC LOOP | MID FK BEARGRASS CREEK | 0.12 MI W OF BEALS BRANCH | 1935 | 2,622 |
| 18 | Shelby | | KY 1779 | GUIST CREEK LAKE | 0.31 MI W OF JCT KY 1667 | 1960 | 2,048 |
| 19 | Jefferson | | BLEVINS GAP RD | CRANE RUN CREEK | 1.8 MI E-DIXIE HWY-US 60 | 1956 | 1,048 |
| 20 | Jefferson | | CLARK STATION RD | S LONG RUN | .4 MI S OF JCT US 60 | 1930 | 451 |
| 21 | Henry | | KY 1606 | WHITE SULPHUR FORK | 2.44 MI S JCT US 421 | 1955 | 421 |
| 22 | Jefferson | | I-65 | CSX RR BURNETT HILL ST | 1 MI N JCT US 60A | 1957 | 112,238 |
| 23 | Jefferson | | CHAMPIONS TRACE LN | S FK BEARGRASS CREEK | .2 MI W OF JCT HIKES LN | 1960 | 75,342 |
| 24 | Jefferson | | I-264 | P AND L RAILWAY WYE | 200 E-CMPGRND RD-KY 2051 | 1970 | 72,836 |
| 25 | Jefferson | | I-64 WB | MID FK BEARGRASS CREEK | WBL .8MI W OF I-264 INTRC | 1966 | 40,258 |
| | Indicates bridge is currently closed | | | | | | |
| | Indicates bridge is restricted to only lower-weight vehicles | | | | | | |

**Source: Federal Highway Administration National Bridge Inventory, 2017.**

## 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.

During the three-year period of 2014 to 2016, there were 383 traffic fatalities in Highway District 5, an average of 128 fatalities per year. Thirty-two percent of traffic fatalities in Highway District 5 during this period were as a result of a vehicle leaving the roadway. During the three-year period of 2014 to 2016, there were 2,658 serious injuries as a result of traffic crashes in Highway District 5, an average of 886 serious injuries per year.

The traffic fatality rate in Highway District 5 during the three-year period of 2014 to 2016 was 1.23 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 5:

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 5 were, in order:

1. need for additional capacity for economic development,;
2. need for additional funding for road, highway and bridge improvements; and,
3. need for additional roadway safety improvements.

Respondents to the survey also noted the need for several critical transportation projects in the region, including widening portions of I-64 and I-65, adding turn lanes as well as removing curves on portions of Highway 44 and widening Taylorsville Road between Taylorsville and Fisherville.