

**2.1.1 Topography**

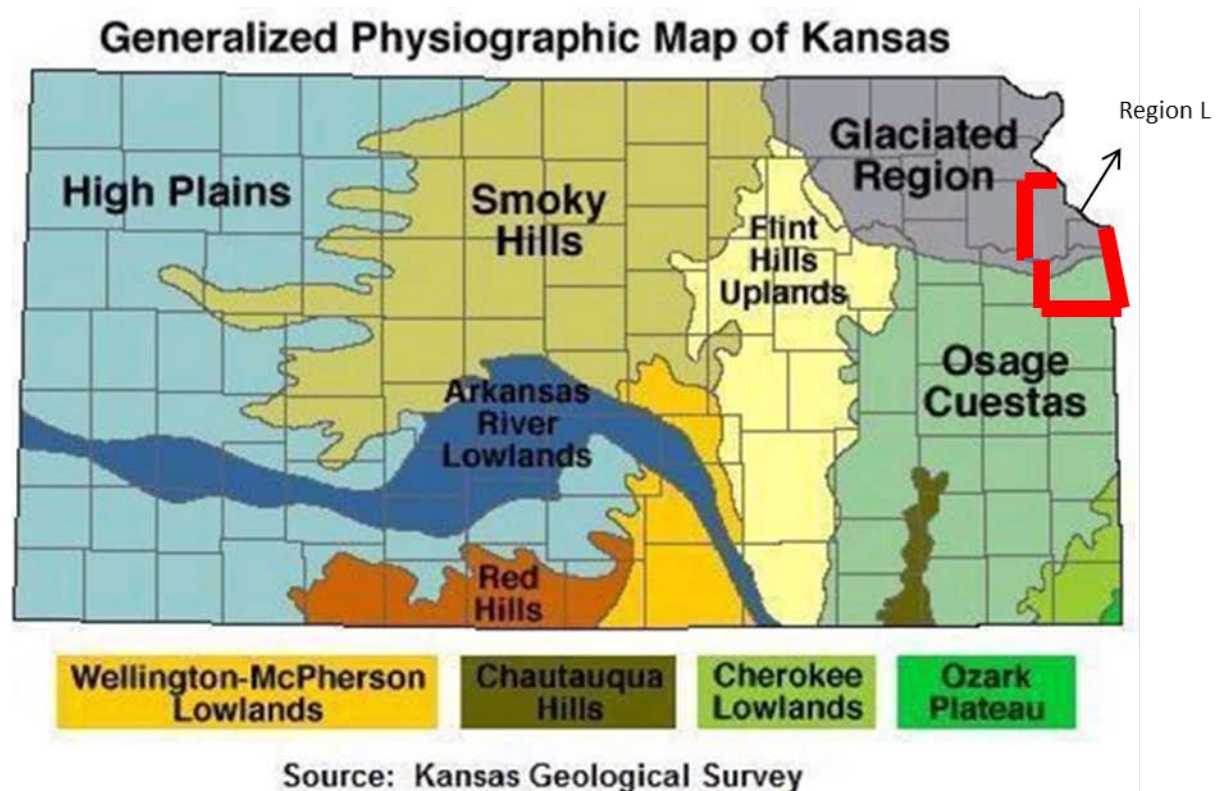
The topography of Region L is comprised of two distinct geographical areas: the Glaciated Region and the Osage Cuestas.

The Glaciated Region is a result of glaciers that moved through the area twice between 1.6 million and 10,000 years ago. This topographical region is distinct for its silt, pebbles, and boulders that remained after the glaciers melted away.

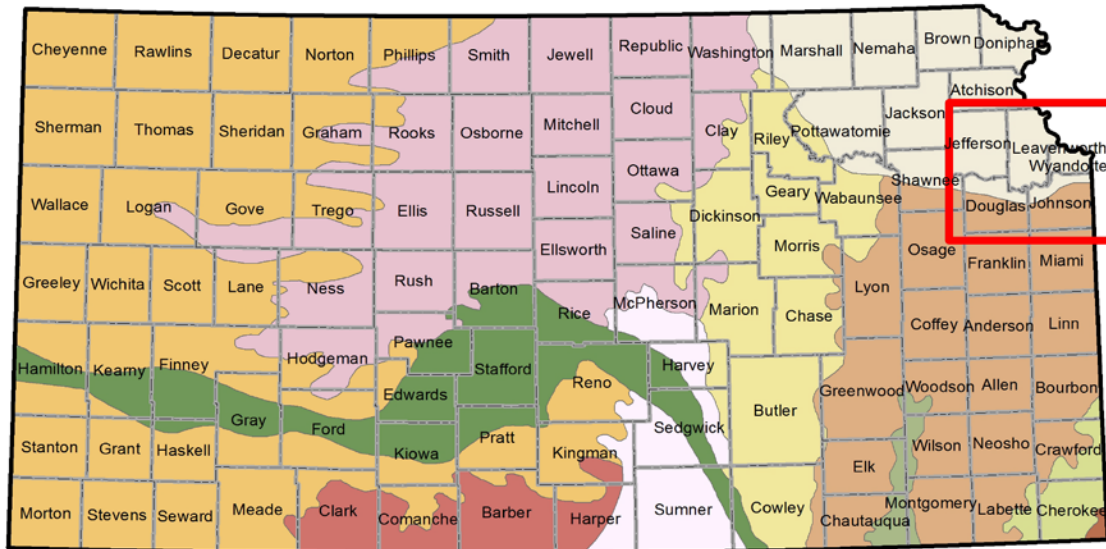
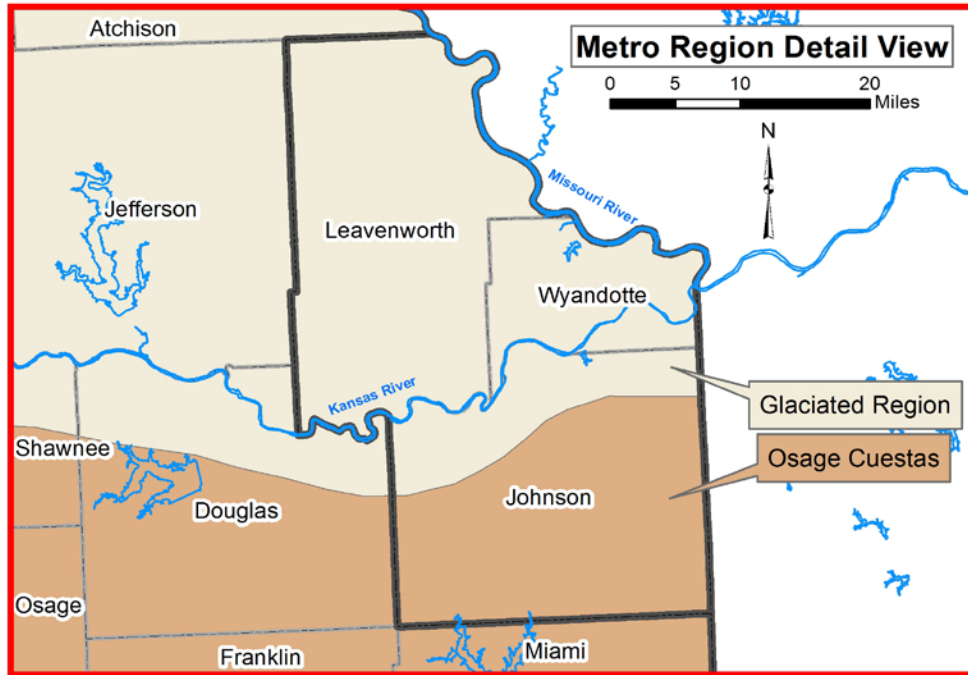
The Osage Cuestas are predominantly in the southeastern portion of the State of Kansas and are noted for its foundation rocks which are among the oldest exposed in Kansas. The Cuestas are comprised of rolling hills and low ridges that are steep on one side and gently sloping on the other.

The Missouri River borders Leavenworth and Wyandotte Counties, which creates a known flooding risk. The last flood event that affected Leavenworth and Wyandotte County was the Missouri River flood of 2011.

Figure 2.1 and 2.2 show the distinct regions of Kansas:



# Physiographic Regions of Kansas



- Physiographic Regions**
- Arkansas River Lowlands
  - Flint Hills Uplands
  - Ozark Plateau
  - Chautauqua Hills
  - High Plains
  - Red Hills
  - Cherokee Lowlands
  - Osage Cuestas
  - Wellington-McPherson Lowlands
  - Smoky Hills
  - Glaciated Region

Scale: 0 25 50 100 Miles

Data Sources: KS Adjutant General, US Census Bureau, KS Geological Survey  
Date Created: 31 January 2013



## 2.1.2 Population

The following summarizes the population within Region L, followed by Table 2.1 which shows the population data broken out for each county.

According to the 2010 U.S. Census Bureau, the regional population in 2010 was 777,911. The population in the region has increased by 14.79% from 2000 to 2010. Table 2.1 shows the population trend for the past decade in the three counties that make up the Region. With the exception of Wyandotte County, the Region has seen substantial growth in the prior decade, and is expected to continue these gains.

The most densely populated area within this region, and Kansas as a whole, is Johnson County with 1,149.6 people per square mile. Wyandotte County has 1,039 people per square mile, and Leavenworth County is the least densely populated with 164.7 people per square mile.

**Table 2.1. Region L Population, 2000 to 2010, and 2011 Estimates**

County	2000 Census Population	2010 Census Population	Population Change (Numerical) 2000-2010	Population Change (Percent) 2000-2010	2011 Population Estimates July 1, 2011
Johnson	451,086	544,179	93,093	20.64%	552,991
Leavenworth	68,691	76,227	7,536	10.97%	77,176
Wyandotte	157,882	157,505	-377	-0.24%	158,224
Subtotal	677,659	777,911	100,252	14.79%	788,391

Source: U.S. Census Bureau 2010, [www.census.gov/kansas](http://www.census.gov/kansas)

## 2.1.3 Housing Trends

An indicator of growth for any given jurisdiction is the number of housing units. The U.S. Census Bureau defines a housing unit as; a house, an apartment, a mobile home or trailer, a group of rooms, or a single room that is occupied, or, if vacant, is intended for occupancy as separate living quarters. As indicated in table 2.2, overall Region L has seen gains in housing units with a total increase of 18.43%. Johnson County had the largest increase in housing units with an additional 44,959.

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**Table 2.2. Housing Unit Gains 2000-2010**

County	2000 Census Housing Units	2010 Census Housing Units	Housing Unit Change (Numerical) 2000-2010	Housing Unit Change (Percent) 2000-2010
Johnson	181,612	226,571	44,959	24.76%
Leavenworth	24,401	28,697	4,296	17.61%
Wyandotte	65,892	66,747	855	1.30%
Total	271,905	322,015	50,110	18.43%

Source: U.S. Census Bureau 2010, [www.census.gov](http://www.census.gov)

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### 2.1.4 Economics

Region L has a wide and diverse economic footprint. The agriculture industry holds the smallest percent of employment in the three counties. The highest percentage of employment, across the board in Region L is in educational services and health care. The highest class of worker for all three counties is private wage and salary workers, with Leavenworth County notable for having 25% of its workforce in the government sector. As far as income and benefits, Leavenworth County and Johnson County are predominantly in the \$100,000 to \$149,999 range, with Wyandotte County in the \$50,000 to \$74,999 range per total household income.

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### 2.1.5 Climate

The climate in Region L is consistent among all three counties, with each having four distinct seasons: winter, summer, spring, and fall. Average rainfall for Region L is 37.86 inches per year, with an average of 216 days of sunshine. Snowfall averages are 16.83 inches. The average July high for the region is 89.76 degrees, and the average January low is 19.7 degrees. While the aforementioned are averages for the region, currently all of Kansas is in a severe to exceptional drought, which has been ongoing for several of years. Since drought can skew the averages, the past several years were not included in the precipitation totals.

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### 2.1.6 Capabilities

Region L's funding capabilities exceed most of the state of Kansas. While funding is an issue everywhere, Johnson, Wyandotte, and Leavenworth Counties are more able to withstand the staffing and budgetary constraints that come with an economic downturn.

More economic details for the region is discussed further within the county sections.

### **2.1.7 Exposure of Built Environment/Cultural Resources**

This section quantifies the buildings exposed to potential hazards, by county. Table 2.3 and Table 2.4 provide the value of the counties built environment and its contents, which in addition to the population information presented above, forms the basis of the vulnerability and risk assessment presented in this plan. This information was compiled from inventory data associated with FEMA's loss estimation software HAZUS-MH 2.1. Buildings are classified into seven categories: residential, commercial, industrial, agriculture, religious, government, and educational. Values reflect 2006 valuations, published by R.S. Means Company (Means Square foot Costs, 2006) with replacement costs.

**Table 2.3. Estimated Replacement Value of Buildings by Category for Region L (2006)**

County	Residential (\$1,000s)	Commercial (\$1,000s)	Industrial (\$1,000s)	Agriculture (\$1,000s)	Religion (\$1,000s)	Government (\$1,000s)	Education (\$1,000s)	Total (\$1,000s)
<b>Mitigation Planning Region L</b>								
Johnson	\$32,813,492	\$8,111,879	\$1,699,112	\$112,125	\$612,676	\$143,472	\$378,712	\$43,871,468
Leavenworth	\$3,928,203	\$578,117	\$104,793	\$27,384	\$81,685	\$41,955	\$115,646	\$4,877,783
Wyandotte	\$8,317,902	\$2,408,512	\$739,055	\$22,467	\$346,313	\$68,468	\$163,949	\$12,066,666
<b>Region L Total</b>	<b>\$45,059,597</b>	<b>\$11,098,508</b>	<b>\$2,542,960</b>	<b>\$161,976</b>	<b>\$1,040,674</b>	<b>\$253,895</b>	<b>\$658,307</b>	<b>\$60,815,917</b>

**Table 2.4. Estimated Replacement Value of Building's contents by Category for Region L (2006)**

County	Residential (\$1,000s)	Commercial (\$1,000s)	Industrial (\$1,000s)	Agriculture (\$1,000s)	Religion (\$1,000s)	Government (\$1,000s)	Education (\$1,000s)	Total (\$1,000s)
<b>Mitigation Planning Region L</b>								
Johnson	\$16,411,492	\$8,556,170	\$2,361,961	\$112,125	\$612,676	\$160,661	\$428,039	\$28,643,124
Leavenworth	\$1,965,410	\$622,375	\$130,698	\$27,384	\$81,685	\$46,187	\$119,213	\$2,992,952
Wyandotte	\$4,161,308	\$2,573,106	\$1,049,118	\$22,467	\$346,313	\$72,009	\$196,832	\$8,421,153
<b>Region L Total</b>	<b>\$22,538,210</b>	<b>\$11,751,651</b>	<b>\$3,541,777</b>	<b>\$161,976</b>	<b>\$1,040,674</b>	<b>\$278,857</b>	<b>\$744,084</b>	<b>\$40,057,229</b>

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## Cultural Resources

When determining mitigation strategies for Region L, historic and cultural resources should be considered. The following provides the number of National and State Historic Register Listings in the region by county. These will be further detailed in the respective county section that follows.

- Johnson County 32
- Leavenworth County 43
- Wyandotte county 43

**Existing Plans and Policies** for Region L are a localized concern which can ultimately affect the whole region. Each jurisdiction maintains plans, policies and codes in order to preserve and develop their geographic limits, to include the incorporation of mitigation thoughts, ideas, and actions into their local plans. One area that is very well spelled out in the local plans and policies is their commitment to floodplain management and storm water runoff. With few exceptions the Region has heavily endorsed the NFIP program and public education about various hazards affecting their jurisdictional boundaries and beyond. Building codes are in place to ensure the safety of the population and Comprehensive plans lay out future development in order to mitigate for known problem areas such as flood, wildfire, utility/infrastructure failure, and more. Green and open space is a common thread throughout their plans, and ensuring the integrity of the floodplain. Another common theme throughout their plans as it relates to mitigation is the wildfire-urban interface which poses a problem for various jurisdictions within the region. Through their firewise and other fire prevention plans they are seeking to mitigate for this hazard. Wildfire actions can be found in Chapter 4 that help address mitigation efforts that have been identified. The list of the incorporation of mitigation into their local plans is exhaustive, and the jurisdictions welcome the public to view their local websites for more information. These websites can be found under each jurisdiction under the heading of Land Use and Development Trends.