



# SOY TRANSPORTATION COALITION

## RURAL INFRASTRUCTURE: A More Productive Path Forward

### Kentucky Agricultural Production and Rural Infrastructure

#### Kentucky Trends in Agricultural Production and Infrastructure

##### Highlights

- While the number of farms producing many crops and types of livestock have decreased since 1954 in Kentucky, the number of soybean farms has remained virtually unchanged and the number of farms selling broilers has increased by more than 80% in addition to the increases in average farm size.
- Inland waterways are plentiful in Kentucky with its access to the Ohio, Tennessee, Green, and Cumberland Rivers. However, grain movements are much smaller than shipments of coal and aggregates (i.e. limestone, sand, and gravel).
- While the value of agricultural production in Kentucky increased by 713% from 1950 to 2007, the number of farms decreased by 63%.

##### Production Consumed on Farm

- Home consumption of a farm's production has changed dramatically. In 1950, the value of farm production consumed at home in Kentucky was 14.32%.
- In contrast, in 2010 just 0.36% of the value of production in Kentucky was consumed at home. This shift amounts to an even greater reliance by agricultural producers on rural infrastructure to transport farm products.

##### Rural Population Trends

- In 1930 there were 1,815,563 people living in Kentucky, with 69.4% of that population in rural areas.
- By comparison, in 2010 there were 4,339,367 people living in Kentucky, with 41.6% of that population in rural areas.

#### Did you know?

- In Kentucky in 2007, there were an average of 263 soybean acres per soybean farm, while for the U.S. the average soybean area per soybean farm was 229 acres.
- Broilers are a major consumer of soybean meal. In 2007, there were 309.77 million broilers sold in Kentucky and 8,915 million broilers sold in the U.S.
- Average farm size in the U.S. increased from 213 acres in 1950 to 418 acres in 2010, while average farm size in Kentucky increased from 86 acres to 163 acres over the same period.
- In Kentucky in 1945, there were 2,422 grain combines, while in 2007 there were 4,724 self-propelled grain and bean combines in the state.

#### Agricultural Production

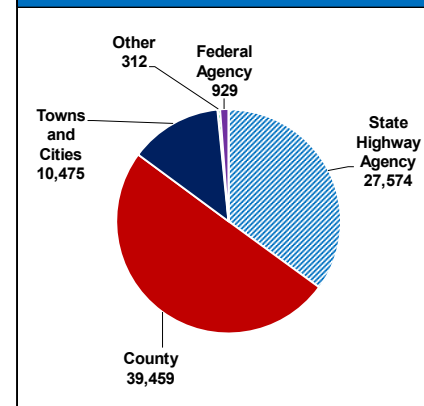
	Then			Now			Change Percentage Change in Quantity
	Year	Quantity	Percentage of U.S.	Year	Quantity	Percentage of U.S.	
Consolidation Trends: Number of Farms	1950	230,000	4.1%	2010	85,700	3.9%	-62.7%
Farmland Trends: Land in Farms (Acres)	1950	19,800,000	1.6%	2010	14,000,000	1.5%	-29.3%
Average Farm Size (Acres)	1950	86	40%	2010	163	39%	90%
Population Trends: Population Density (Pop. per Square Mile)	1930	66	190%	2010	110	125%	66.0%
Production Trends: Volume of Production (Million Bushels)	1940	70	1.5%	2011	269	1.5%	283%

#### Kentucky Agriculture and Rural Infrastructure

##### Highlights

- Roads** With 78,749 miles of road as of 2008, Kentucky accounts for 1.9% of U.S. road miles.
- Railroad** Kentucky had 3,929 miles of railroad in 1920 (around the time of the peak rail mileage), but this mileage had fallen to 3,534 miles in 1965 and decreased even further to 2,558 freight railroad miles in 2009.
- Waterways** Kentucky has approximately 1,590 miles of inland waterways.
- Bridges** Kentucky has 13,948 bridges, and approximately 30.5 percent of those are considered structurally deficient or functionally obsolete.

#### Miles of Road by Owner for Kentucky





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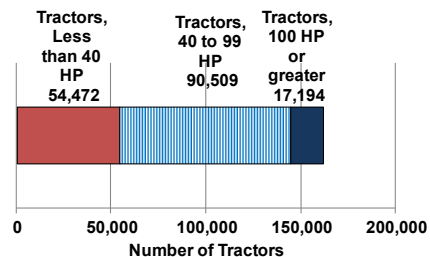
### Kentucky Agricultural Production and Rural Infrastructure

#### Consolidation Trends: Fewer Farms and Larger Average Farm Size

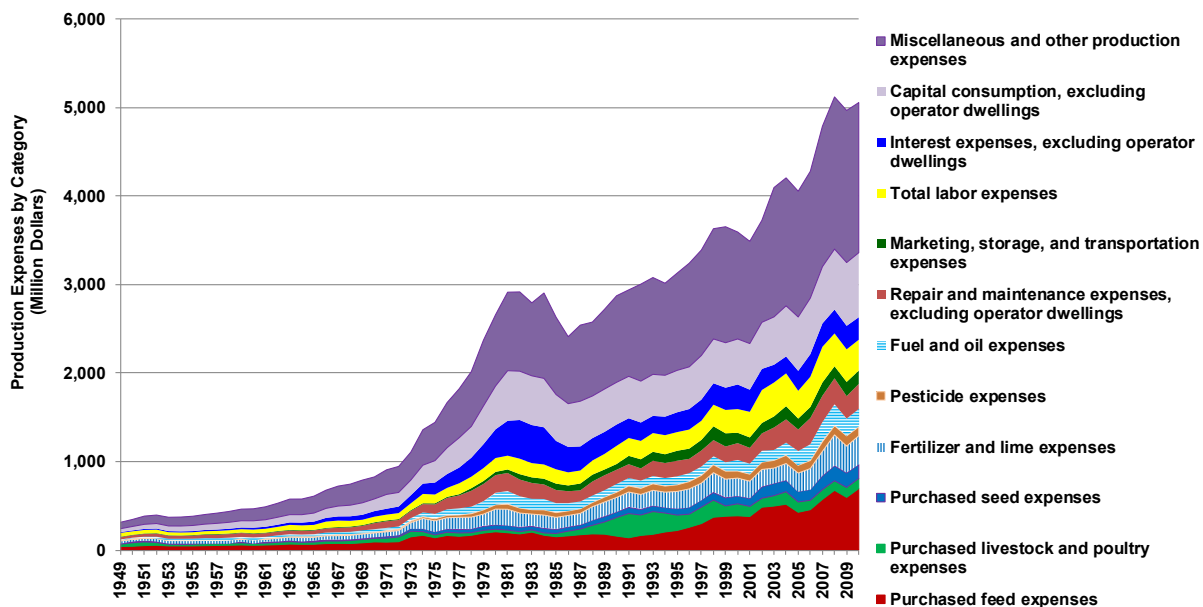
	Then (1954)		Now (2007)		Change	
	Number of Farms	Average acreage or number of head per farm for farms with production	Number of Farms	Average acreage or number of head per farm for farms with production	Percentage Change in No. of Farms	Percentage Change in Avg. Farm Size
Corn for Grain	133,432	14 acres	7,060	186 acres	-95%	1,235%
Soybeans	4,151	30 acres	4,129	263 acres	-1%	775%
Wheat	16,660	13 acres	1,414	169 acres	-92%	1,225%
Cattle and Calves Inventory	154,252	11 head	43,681	55 head	-72%	397%
Hogs Sold	52,098	20 head	1,210	663 head	-98%	3,301%
Broilers Sold	353	16,482 head	647	478,778 head	83%	2,805%
All Farms	193,487	93 acres	85,260	164 acres	-56%	76%

#### Farm Equipment

#### Farm Equipment Used: Number of Tractors of Various Sizes, 2007



#### Farm Input Trends: Kentucky Farm Inputs by Type, 1949-2010



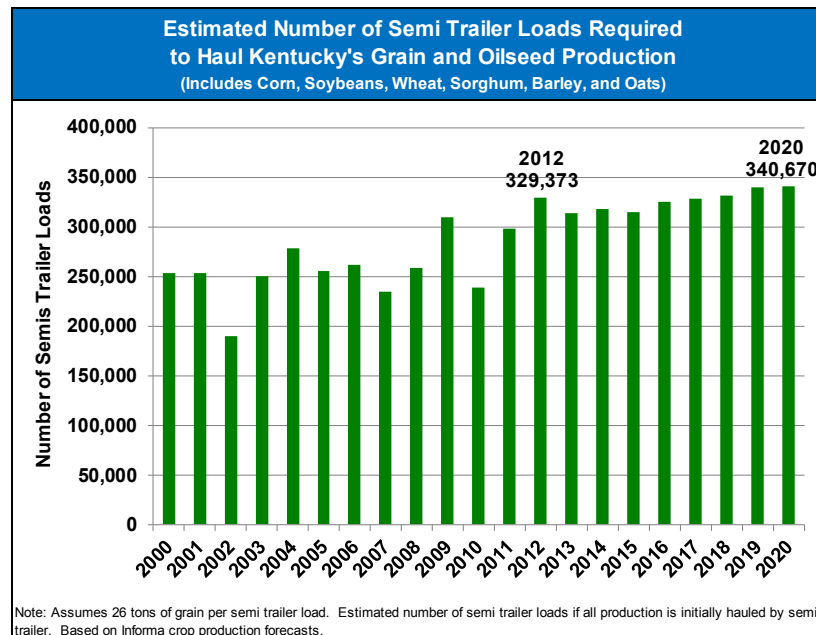


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Rural Infrastructure Trends							
	Then			Now			Change
	Year	Quantity	Percentage of U.S.	Year	Quantity	Percentage of U.S.	Percentage Change in Quantity
Off Farm Storage (million bushels)	1986	69	0.8%	2011	70	0.7%	2%
On Farm Storage (million bushels)	1986	215	1.6%	2011	195	1.5%	-9%
Estimated Average Tractor Weight (lbs.)	1950	5,012	93.0%	2011	8,443	84.7%	68%
Railroad Miles	1920	3,929	1.6%	2009 freight	2,558	1.8%	-35%
Road Miles	1940	9,853	1.8%	2008	78,749	1.9%	699%

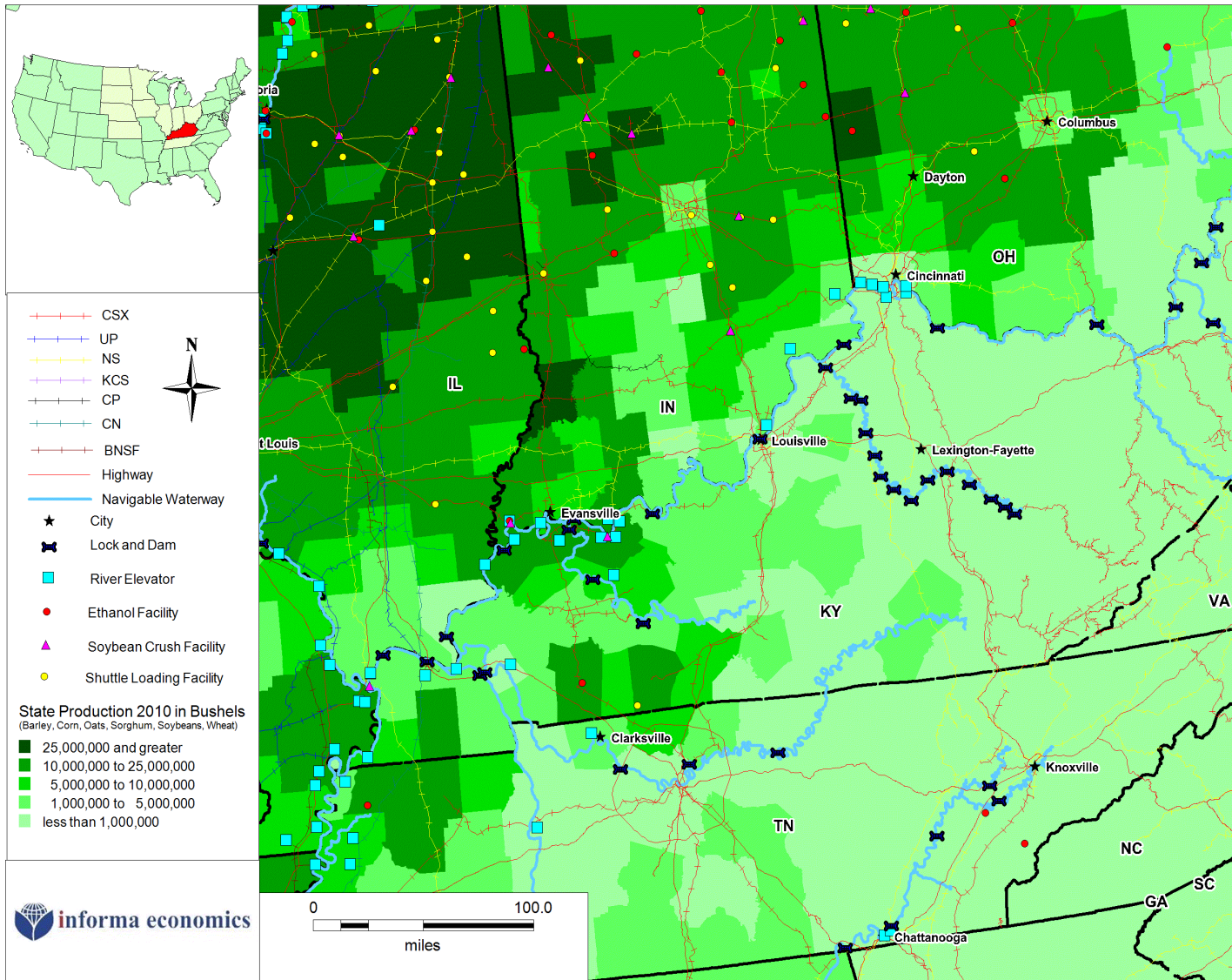




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### Kentucky: Agricultural Production and Infrastructure



#### Infrastructure

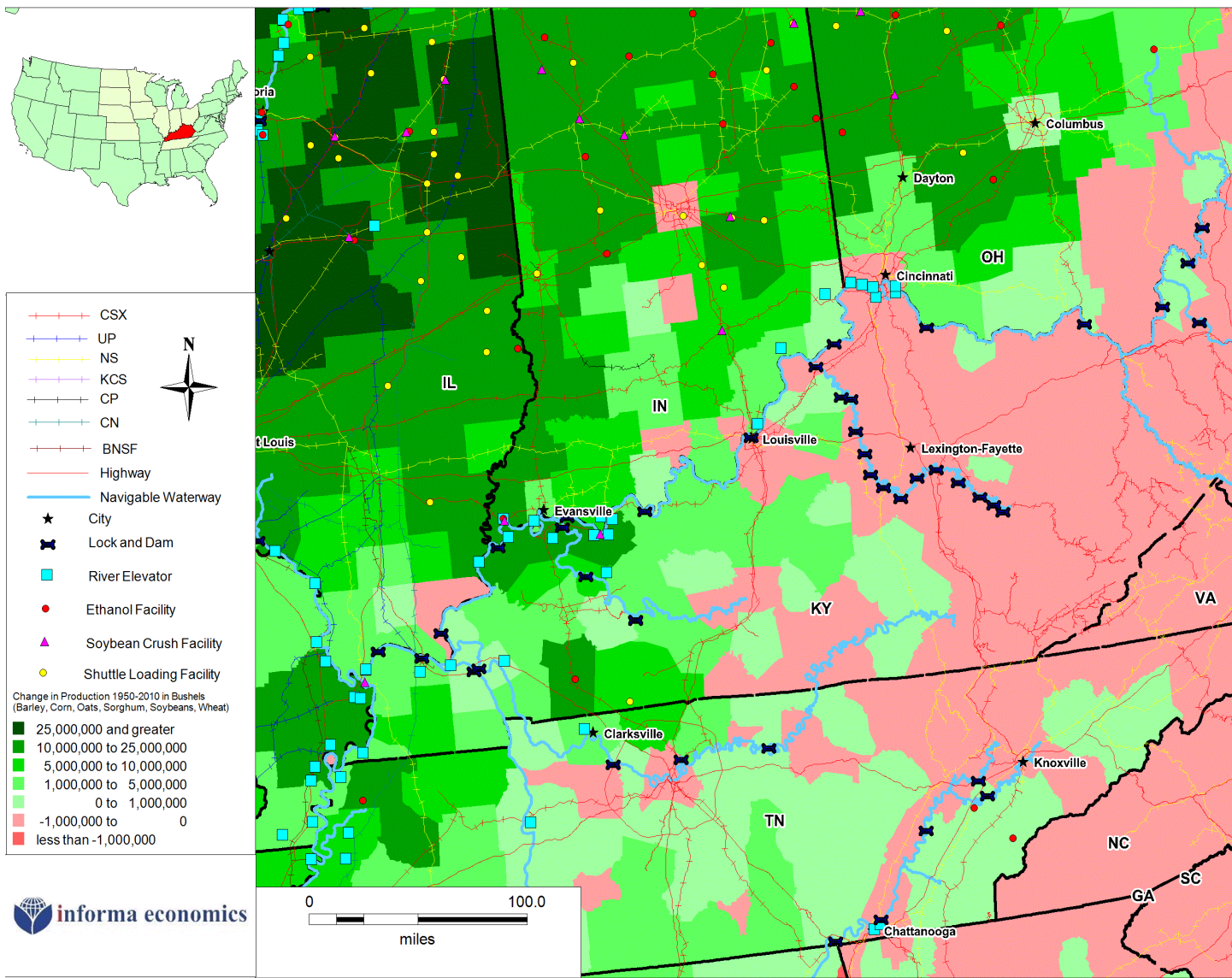
- Kentucky crop production consists primarily of corn, soybeans, and wheat.
- Crops are moved from production regions by truck, rail or barge to elevators and processing facilities.
- Kentucky has 782 miles of interstate; 2,558 miles of rail lines; 1,590 miles of waterways; 13,948 bridges and 78,749 miles of roadways.
- Kentucky has one soybean crush facility; one shuttle facility; two ethanol plants; 62 grain elevators; and 14 river elevators.



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### Kentucky: Change in Production from 1950 to 2010



#### Production

- Crop production in much of the state has been decreasing, while the remainder of the state has been growing.
- Production of grains and soybeans has provided a net increase of 134 million bushels from 1950 to 2010.
- Historically, Kentucky produced primarily corn.
- In recent years, the state has diversified further into corn soybeans and wheat.

Funded by the soybean checkoff