Testimony in Opposition to SB 17

I am Darryl Lutz, Local Road Engineer with the Kansas Association of Counties. I work with all 105 counties in Kansas as a resource person regarding road and bridge matters. Prior to my current position, I spent over 32 years as the County Engineer and Director of Public Works for Butler County Kansas. I offer this testimony today in opposition to SB 17 in its entirety. Kansas counties own and maintain 109,000 miles of roads, which is 82% of all the roads in Kansas. They also own and maintain 19,500 bridges, which constitutes 77% of all the bridges in Kansas. The proposed legislation if approved into law will result in increases in damage and related maintenance costs to local roads and bridges, will decrease safety on local roads and by virtue of multiple studies will divert a significant amount of loaded truck traffic off the major state highway system to the local road system.

Reasonable truck weights have been established to protect the roads and bridges from damage. It is both common knowledge and scientifically proven that increases in truck weights will dramatically increase the cost of road maintenance and shorten the life of bridges and culverts. Any increase in legal truck weights needs to consider the increased costs to the taxpayers that are ultimately responsible for paying for road maintenance.

In Kansas, and across the United States, rural roads are suffering under pressure they were never meant to take. Increase in farm production and railroad abandonments have resulted in more trucks on our rural county road system. While I think we can all agree that bigger farm equipment and higher yields are good for the farmer, it does put more stress on our roads and has already increased our cost to maintain the roads. I should point out that trucks are already much longer and heavier than a few decades ago as illustrated in the pictures below.

While state highways have thick pavements, most county roads have thin pavements that are less capable of surviving truck loads. Asphalt pavement deflects as it carries a wheel load. Heavier loads cause greater deflection, which then causes fatigue cracking of the pavement and consolidation of the base. Cracks let moisture penetrate into the base, which weakens the base and that worsens the cycle until the road fails. The amount of damage a road sustains is directly related to the weight of the load and how often it is applied, according to tests by AASHTO (the American Association of State Highway and Transportation Officials). Passenger autos and light duty vehicles are not a problem. It is heavier vehicles that do the initial damage. Once defects develop, cars and light vehicles will accelerate the damage – we are all familiar with how fast potholes expand under traffic.

Damage increases rapidly with higher loads and actually worsens at a faster rate than the load increases. The Texas Transportation Institute has quantified the increase in pavement damage caused by heavier loads. Using an 80,000 vehicle as the base, a 90,000 lb. vehicle with the same axle configuration will cause a 60% increase in pavement damage. So the 12% savings to the trucker causes a 60% increase in road maintenance costs. This illustrates why counties would be opposed to any increase in weight limits allowed in Kansas.

We are also concerned about safety related to the increase in weights, due to road damage and collapsed bridges. Heavier trucks require more distance to stop. Additional weight may exceed the gross vehicle weight rating, which is inherently unsafe. Timber bridges are still common at the county level and are at the most risk from increased weights. It is a common occurrence each year across Kansas during the harvest seasons to have multiple bridges failures with most of them causing damage to equipment and trucks.

Bridges, culverts and pavement are designed based on the legal loads. Increasing the legal loads may make many roads and structures prematurely deficient. Federal regulations require bridges to be posted if they cannot handle the legal load. Raising the legal load will require virtually all county bridges that are not currently posted to be evaluated by an engineer to see if the bridges need load limit signs. If only half the local bridges need to be evaluated, this analysis would cost the counties about $30 million. We estimate the need to post load limits on an additional 3,000 of those bridges, which will cost $1.5 million.

I believe the agricultural interests are aware of the marginal condition of many county and township roads. I doubt that anyone wants to increase costs for road maintenance. Counties are already cutting back road service levels due to budget restrictions. Many counties are reducing the number of blacktop roads and turning them back to gravel. Many counties have permanently closed bridges. The current bridge replacement rate is about half that necessary to maintain the current bridge inventory. This means if there is no increase in bridge replacements, then about half the county bridges will need to be closed in the next 50 years. Road funding is not adequate now, and no additional funds are available to offset the increased cost of road maintenance due to larger truck weights.

Who will pay for the increase in road damage and shortened life of our pavements, bridges and culverts? Motor fuel tax revenues have been stagnant for years and counties are under great pressure to find ways to reduce taxes in a world with ever-increasing costs of operations. In summary, counties do not have the funds to offset the damage to roads, bridges and culverts that would result from increasing truck weights. Increase in allowable truck weights is also contrary to public safety and should not be approved.

Figure 1. Pavement impacts resulting from truck-weight increases.

Total Weight (lb)	Weight Ratio	EALF* Ratio	Weight Ratio	EALF* Ratio	Weight Ratio	EALF* Ratio
	WRT 4,000 lb		WRT 35,000 lb		WRT 80,000 lb	
4,000	1	1				
10,000	2.5	23				
35,000	8.8	583	1	1		
80,000	20	18,009	2.3	31	1	1
84,000	21	22,210	2.4	38	1.05	1.2
90,000	22	28,511	2.6	49	1.12	1.6
100,000	25	42,753	2.9	73	1.25	2.4

*EALF: Equivalent axle load factor

Note: From April 2015 Road & Bridges Magazine. Source Texas Transportation Institute

Figure 2 1950s era farm truck

Figure 3 Current vintage farm truck

Figure 4 Potholes and ruts caused by heavy loads may be a safety issue for autos.

Figure 5 Timber structure collapse

Figure 6 Another timber bridge collapse due to overweight

Figure 7 A large truck on a county bridge in Marshall County