Kansas Society of Professional Engineers
A state society of the National Society of Professional Engineers

Senate Committee on Natural Resources
Testimony on SB 153, relating to dams
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Chairman Powell and members of the committee,

My name is David L. Pope. I appear before you today as a member of the Kansas Society of Professional Engineers (KSPE) and on the Society's behalf to testify in opposition to SB 153 due to the adverse affect to public safety it would cause. This bill would amend portions of the Obstructions in Streams Act, K.S.A. 2012 Supp. 82a-301, et seq, the primary statute that provides authority for the Chief Engineer, division of water resources, Kansas Department of Agriculture to regulate the construction, operation and maintenance of dams and other water obstructions to the extent required for the protection of public safety. Many members of KSPE are Professional Engineers with extensive experience related to dams and dam safety issues. Professional Engineers attempt to perform their duties related to the design and construction of facilities of various kinds in such a way as to protect the public safety, health and welfare. This concept drives KSPE policy, the commitment of KSPE members and why we appear here today.

Our major concern with SB 153 is the proposed change to the definition of a "dam" in Section 1 (b). In Kansas, current law bases regulatory jurisdiction over dams on a combination of height and storage volume criteria, since these are key factors related to the potential impact of a dam should it fail. SB 153 would change the definition of a dam from a height of 25 feet to 30 feet and the capacity to impound from 50 to 150 or more acre feet, thereby removing over one-half of the dams currently under the jurisdiction of the Department. This change would jeopardize public safety as a result of potential dam failures which can cause loss of life, as well as extensive damage to private and public property, such as houses and other buildings, roads and utilities, depending on what is located below the dam in the area that would be inundated during a failure. Because SB 153 changes the definition of a dam, it would remove jurisdiction up to this new size of dam for all hazard classes of dams, including "high" Hazard Class C and "significant" Hazard Class B.

Kansas law was changed in 2011 to conform to a definition of a dam that has become the national standard for regulation of non-federal dams by states. Many states define a dam essentially the same as Kansas law, although the criteria varies some. However, the proposed definition exempting dams with up to 150 acre feet of storage capacity would make Kansas among the least restrictive states in the nation as to which dams are regulated by the state. An acre foot is a volume equal to 325,851 gallons of water. A reservoir with a 30 foot high dam and a storage capacity of 150 acre feet could cover up to about 15 surface acres under typical Kansas conditions, assuming an average depth of 10 feet, although this would vary with site conditions. For comparison, a typical city block would be 10 feet deep with 150 Acre feet. Kansas has a very large number of dams relative to other states in the country, largely due to our climate, limited water supply, need for flood control and storage during drought, and the other benefits dams provide to our citizens for a wide range of uses. Dams are an important part of our

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infrastructure. However, this infrastructure is aging and like many other things, dams require proper maintenance and supervision to continue to provide these benefits in a safe manner. In 1929, the Kansas Legislature wisely recognized the need to regulate dams to protect public safety and the infrastructure involved.

Some people often assume that the dams of the size and nature typically found in Kansas do not present the same hazard to public safety as areas with more topographic relief or larger dams. However, historic dam failures do not support this assumption. According to a study and analysis reported in 1999 by the U.S. Bureau of Reclamation, of the 300 fatalities caused by dam failures in the United States during the period 1960 through 1998, 86% were caused by failures of dams 20 to 49 feet high and 47% were from dams with less than 2 square miles of drainage. Seven dams that caused fatalities failed with storage of less than 300 acre feet. The U.S. Department of Agriculture, NRCS, historically provided technical assistance for many dams in Kansas that greatly assisted with the proper design and construction of such dams, but there is not federal regulatory control over non-federally owned dams. Much less NRCS assistance has been provided in recent years due to funding limits and other priorities, such as the rehabilitation of existing dams with serious deficiencies. Of the 3907 dams for which NRCS has provided technical assistance in Kansas, 2069 of them are below 30 feet in height. Within this are 58 significant or high hazard structures. The median height of these dams is 26 feet.

These statistics place the typical Kansas dam in the category for which most failures have occurred in this country. However, we have been fortunate to have had the assistance of NRCS when many of our dams were constructed together with a successful regulatory program resulting in no loss of life in Kansas due to dam failures. With the changes proposed by SB 153, this safety record will not likely stand and the future loss of life could very well occur. If anything, a viable state regulatory program is now even more important due to the age of Kansas dams and the inspections needed to ensure proper maintenance takes place.

The proposed changes on page 2 in Section 1(d) seem to indicate a desire by the author to not require the consent or permit of the Chief Engineer for "low" Hazard Class A dams that are smaller in size than the new size criteria included in the bill. However, this provision is made inapplicable by the change in definition of a dam in Section 1 (b). If it is desired to only remove the permitting requirement for "low" Hazard Class A dams, the change in definition proposed by SB 153 should not be made, as it removes jurisdiction from dams of all hazard classifications. However, 30 feet high and 150 acre feet is still too large a dam to be constructed without proper engineering design, permitting, construction and inspection, as conditions can change in the future. While KSPE has not yet taken a position on it, HB 2051 provides an approach that limits the requirements for "low" Hazard Class A dams smaller than 75 acre feet in capacity while retaining overall jurisdiction to deal with any problems from such dams in the future.

In summary, KSPE strongly opposes SB 153 due to serious public safety concerns about eliminating regulatory jurisdiction for dams as large as proposed in the bill. Thank you. I would be happy to answer questions at the appropriate time.