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House Water and Environment Committee

March 1, 2018

**Informational Testimony:
A Health Impact Assessment on
Municipal Water Reuse in Kansas**

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To improve the health of all Kansans through educational offerings that support effective policymaking, engage stakeholders at the state and community levels, and provide nonpartisan, actionable and evidence-based information.

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Chairman Sloan and Members of the Committee:

My name is Carlie Houchen and I am an analyst at the Kansas Health Institute, where I contribute to work on community health improvement. The Kansas Health Institute (KHI) is a nonprofit, nonpartisan educational organization based here in Topeka, founded in 1995 with a multiyear grant from the Kansas Health Foundation.

Thank you for the opportunity to provide information on the results of our health impact assessment – or HIA – on the issue of municipal water reuse in Kansas.

Before we provide an overview of the results, we would like to thank the organizations and agencies who contributed to the development of this study, including the Kansas Water Office, Kansas Department of Health and Environment, Kansas Municipal Utilities, City of Hays, City of Garden City, City of Russell, City of Salina, City of South Hutchinson, Johnson County, Kansas Rural Water Association, Kansas Geological Survey and the University of Kansas. We also appreciate input provided by the Kansas Department of Agriculture. Additionally, we would like to thank the Kansas Health Foundation for providing funding for this project as part of their efforts to improve access to and consumption of water in Kansas.

The KHI study assessed how the implementation of municipal water reuse projects in Kansas could affect water availability and community sustainability, water quality, community perception of water quality, consumption of beverages other than municipal tap water, cost and utility rates, guidance and regulation of water reuse and associated health outcomes. The study aimed to inform the implementation of the Kansas Water Vision, “A Long-Term Vision for the Future of Water Supply in Kansas,” developed in 2013. The Water Vision calls for an evaluation of the sources and potential uses of lower-quality water as a strategy for additional sources of water supply. It is within this strategy that water reuse is likely to be considered.

One of the primary impacts studied in the report was the impact of water reuse on community’s perception of the quality of reused water. Our research found that there might be a decrease in the community’s perception of the quality of water if the community was not involved in the decision to reuse water. There are several components of this perception. The first is what has been referred to as the “yuck” factor, or psychological aversion to treated wastewater. Another is trust in public officials, experts and technology.

The public’s perception of the quality of the water is generally lower for all reuse types, and the acceptability of water reuse declines as the potential for human contact with the water increases. A community’s acceptance of water reuse depends on multiple factors, such as the extent of communication, outreach and meaningful engagement with the public. The primary health implications of a decrease in community perception of water quality were found in the switch from drinking tap water to bottled water or sugary beverages.

The study findings suggest that while current technology can be used to treat water to any quality required water quality could vary depending on intended end-use and available funding. For example, non-potable reused water is treated to a lower standard by design, while indirect and direct potable reused water typically undergo advanced treatment and quality controls. In general, the reviewed literature suggests that the quality of reused water has not harmed human or environmental health. Nevertheless, the risk of system failure remains, and such an event could result in exposure to contaminants and potential illness. There is also uncertainty about contaminants of emerging concern. There is not adequate evidence to conclude how prevalent they are and whether they present a risk to health.

Water reuse projects are also associated with a variety of initial and ongoing costs related to infrastructure, operations and maintenance. Costs vary by type of reuse (e.g., non-potable reuse, indirect potable reuse, direct potable reuse), as well as the desired water quality and the method and distance of water distribution. It is possible that utility rates to customers may increase to accommodate these costs. This could lead to a negative health outcome where those with limited financial security may have to make trade-offs with other necessities such as food, medical expenses and heating and cooling.

Finally, as more Kansas communities pursue water reuse, new guidance and regulations for water reuse projects are likely to be developed in Kansas. Regulations in states with current or planned widespread water reuse include requirements for water quality, public access, monitoring and reporting. New regulations could further protect public health.

A few of the key recommendations from the HIA include:

Guidance & Regulations:

- Take a holistic approach to all water-related decision-making, that considers the physical, social and economic conditions within a watershed, aquifer and river basin context.
- Developing clear and consistent regulations based on the best-available science and lessons learned from Kansas reuse projects and peer states. Update these regulations regularly to assure alignment with new evidence and standards.
- Incorporating best practices into any new regulatory guidance. Best practices include: having a proactive public information program; marking all non-potable components; having a monitoring and surveillance program for the non-potable system; and establishing construction and design standards.
- Establishing consistent requirements for signage to limit public contact with lower-quality, non-potable reused water.
- Establish a process for coordination between water and wastewater utilities.
- Implementing a streamlined permitting process for reuse.

Water Quality:

- Establishing a task force to address contaminants of emerging concern in reuse and the traditional water supply on an ongoing basis.
- Pursuing similar quality, monitoring and reporting requirements on bottled water as municipal water supplies.
- Educating and communicating with the public about water reuse.

Funding:

- Waiving or minimizing application fees and/or inspection fees for municipalities interested in pursuing water reuse efforts.
- Providing grant funding to municipalities or help them apply for grant funding associated with water reuse.
- Dedicating funding to support long-term water planning efforts.
- Allowing the use of loan programs as incentives for private businesses to embark on water reuse efforts.

We invite you to review the provided HIA executive summary and the attachments to this testimony for more detailed information about the findings and recommendations of our study. To access the full report, please visit: www.khi.org/policy/article/WaterHIA

If you have any questions regarding today's information or the health impact assessment, please contact Carlie Houchen at (785) 233-5443 or chouchen@khi.org.

Enclosures: Attachment 1: Presentation slides: *Health impacts of municipal water reuse in Kansas*.
Attachment 2: Executive Summary of the HIA: Potential Health Effects of Municipal Water Reuse in Kansas, 2017.