Potential Health Effects of Water Reuse in Kansas
A Health Impact Assessment

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Project team:

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“Evaluate the sources and potential uses of lower quality water.”
– The Kansas Water Vision
How does the proposed project, plan, policy affect

- Housing
- Air quality
- Noise
- Safety
- Social networks
- Nutrition
- Parks and natural space
- Private goods and services
- Public services
- Transportation
- Livelihood
- Water quality
- Education
- Inequities

and lead to health outcomes?
HEALTH FACTORS

The range of personal, social, economic and environmental factors which determine the health status of individuals or populations.

Physical environment
  – e.g., air quality, water quality

Built environment
  – e.g., buildings, roads, bike lanes

Livelihood
  – e.g., income, employment

Social and community
  – e.g., social support, family structure

Lifestyle
  – e.g., diet, exercise, alcohol and tobacco use
HEALTH IMPACT ASSESSMENT

1. Identifies the feasibility of HIA
2. Identifies issues for the study
3. Assesses health impacts
4. Suggests options or alternatives
5. Communicates results
6. Identifies successes & areas for improvement

Source: Kansas Health Institute, Policymaker Profile, 2015.
WATER REUSE IN KANSAS

Water Reuse Purpose

- Agriculture/Grass
- Industrial
- Golf Courses
- Wetlands
- Parks/Public Land
- Multiple Use
- Other
WATER REUSE

FINDINGS AND RECOMMENDATIONS

- Community sustainability
- Community perception of water quality
- Water quality
- Cost and utility rates
- Guidance and regulations
Community Sustainability Index in Kansas

Sustainability Index Score
- Very High (0.61 and above)
- High (0.54–0.61)
- Medium (0.47–0.54)
- Low (Less than 0.47)
COMMUNITY PERCEPTION: FINDING & IMPACT

• **Finding**: The community’s perception of water quality could decrease if they were not involved in the decision to reuse water

• **Health Impact**: Lead to an increase in the consumption of beverages other than municipal water
PERCEPTION OF WATER QUALITY

Two major components:

• “Yuck” factor
• Trust
  – In government to make decisions with the public’s best interests in mind
  – In technology to provide consistent quality product
FAVORABILITY OF WATER REUSE BY TYPE

Source: Community Surveys in Hays and Garden City, 2017.
WATER QUALITY: FINDING & IMPACT

• **Finding**: Water quality varies depending on intended end-use and funding

• **Health Impact**: As of December 2016, there have been no outbreaks of illness related to reuse
• With current technology, effluent can be treated to a quality beyond potable water standards
• Some concern exists about disinfectant by-products and contaminants of emerging concern
• Potential risk of system failure
Figure 1-3
Treatment technologies are available to achieve any desired level of water quality

**COSTS: FINDING & IMPACT**

- **Finding**: Costs associated with reuse may or may not increase utility rates to the customer.
- **Health Impact**: If utility rates increase, this could negatively impact financially vulnerable individuals.
COST AND UTILITY RATES

• Cost varies greatly; each use has unique cost components
• Alternative financing mechanisms
• Impact on utility rates
GUIDANCE & REGULATIONS:

FINDING & IMPACT

- **Finding**: Guidance and regulations to govern the use and treatment of reused water may be needed
- **Health Impact**: Regulations will protect public health
RECOMMENDATIONS: 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.
• Establish process for coordination between water and wastewater utilities.
• Implementing a streamlined permitting process for reuse.
RECOMMENDATIONS:

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.
RECOMMENDATIONS:

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 municipalities apply for grant funding associated with water reuse.
• Dedicating funding to support long-term water planning efforts.
• Allowing the use of loan programs as incentive for private businesses to embark on water reuse efforts.
THANK YOU

Any questions?

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