KANSAS HEALTH INSTITUTE

*Informing Policy. Improving Health.*

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

April 13, 2018 ♦ Garden City, Kansas

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Garden City Water Conservation Field Day

# ABOUT KHI

- Nonprofit, nonpartisan educational organization based in Topeka.
- Established in 1995 with a multi-year grant by the Kansas Health Foundation and located directly across from Kansas Statehouse in downtown Topeka.
- Committed to convening meaningful conversations around tough topics related to health.

# ACKNOWLEDGEMENTS

Project team:

Kansas Water Office

Kansas Department of Health and Environment

Kansas Municipal Utilities

Funding provided by:

Kansas Health Foundation

*“Evaluate the sources and potential uses of lower quality water."*

*– The Kansas Water Vision*

# 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

# KEY HIA QUESTION

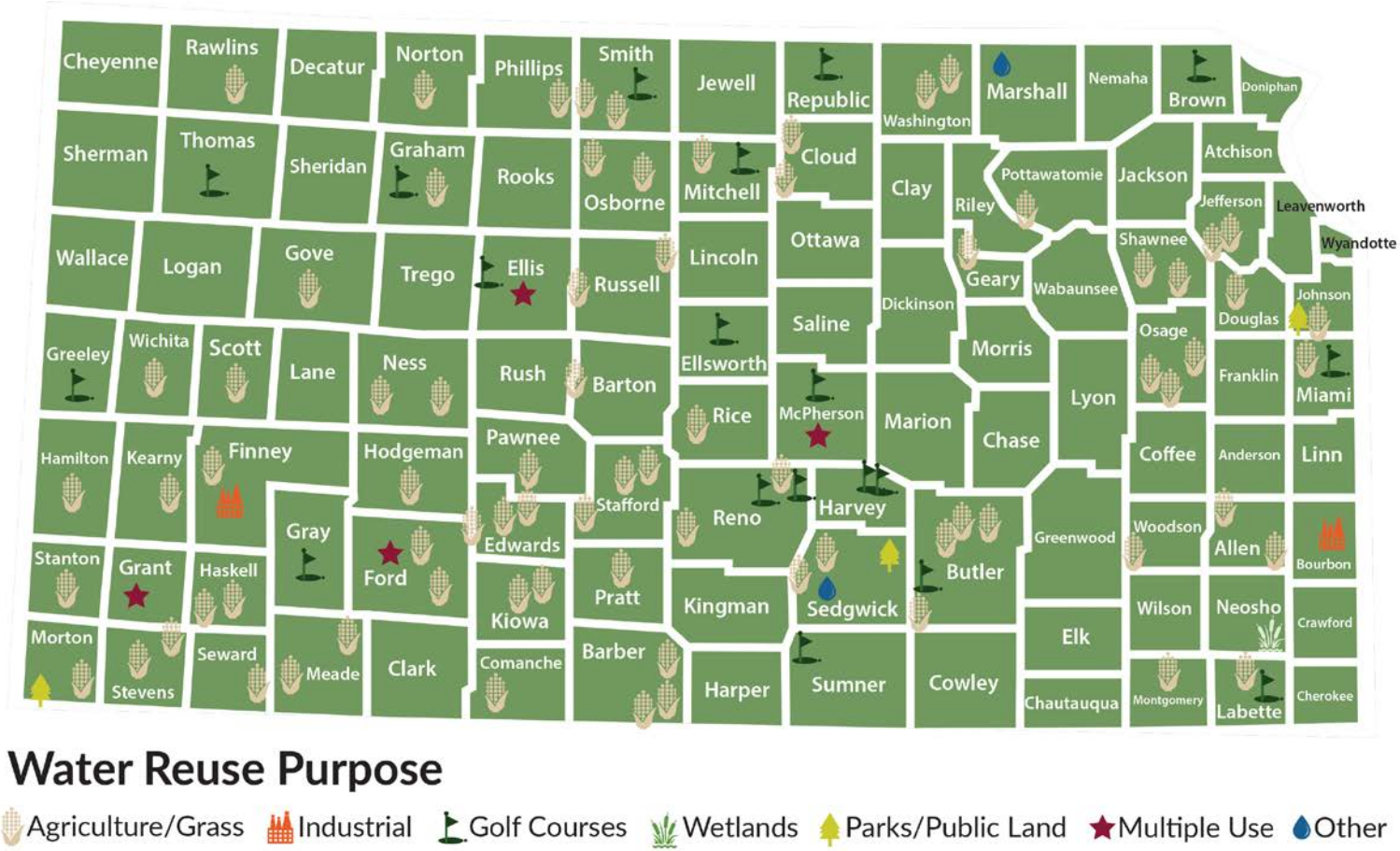
*How does the proposed project, plan, policy*

*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?*

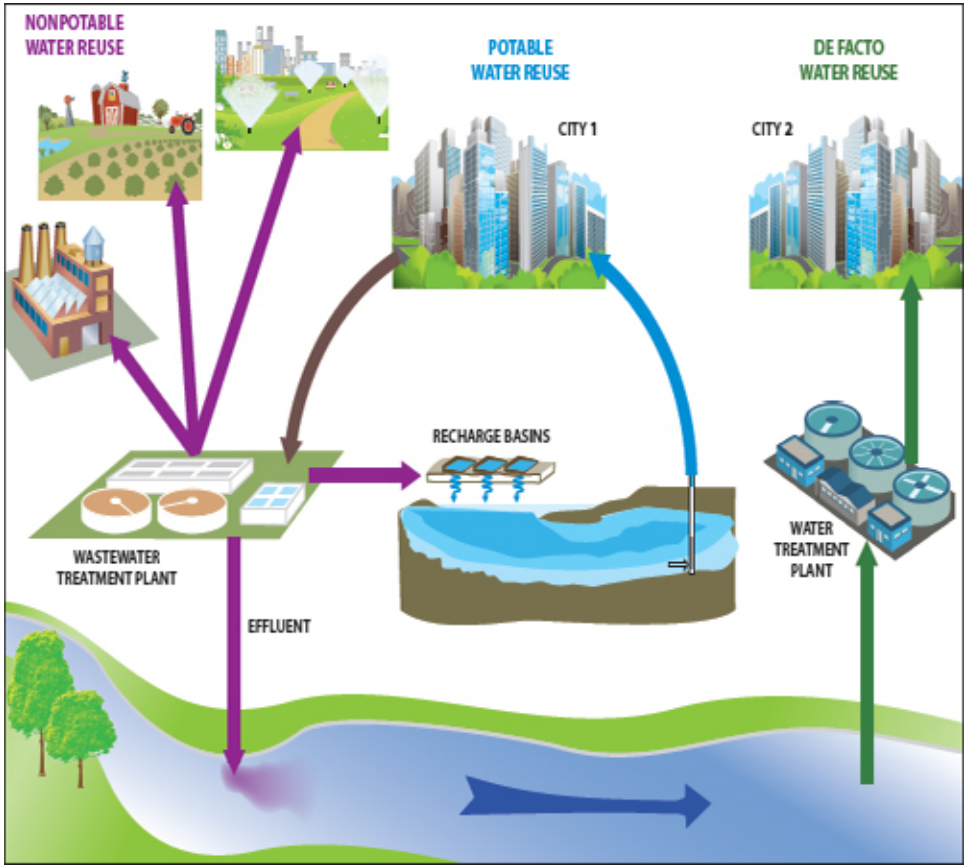
# WATER REUSE IN KANSAS




## Water Reuse Purpose

Agriculture/Grass · Industrial · Golf Courses · Wetlands · Parks/Public Land · Multiple Use · Other

# WATER REUSE

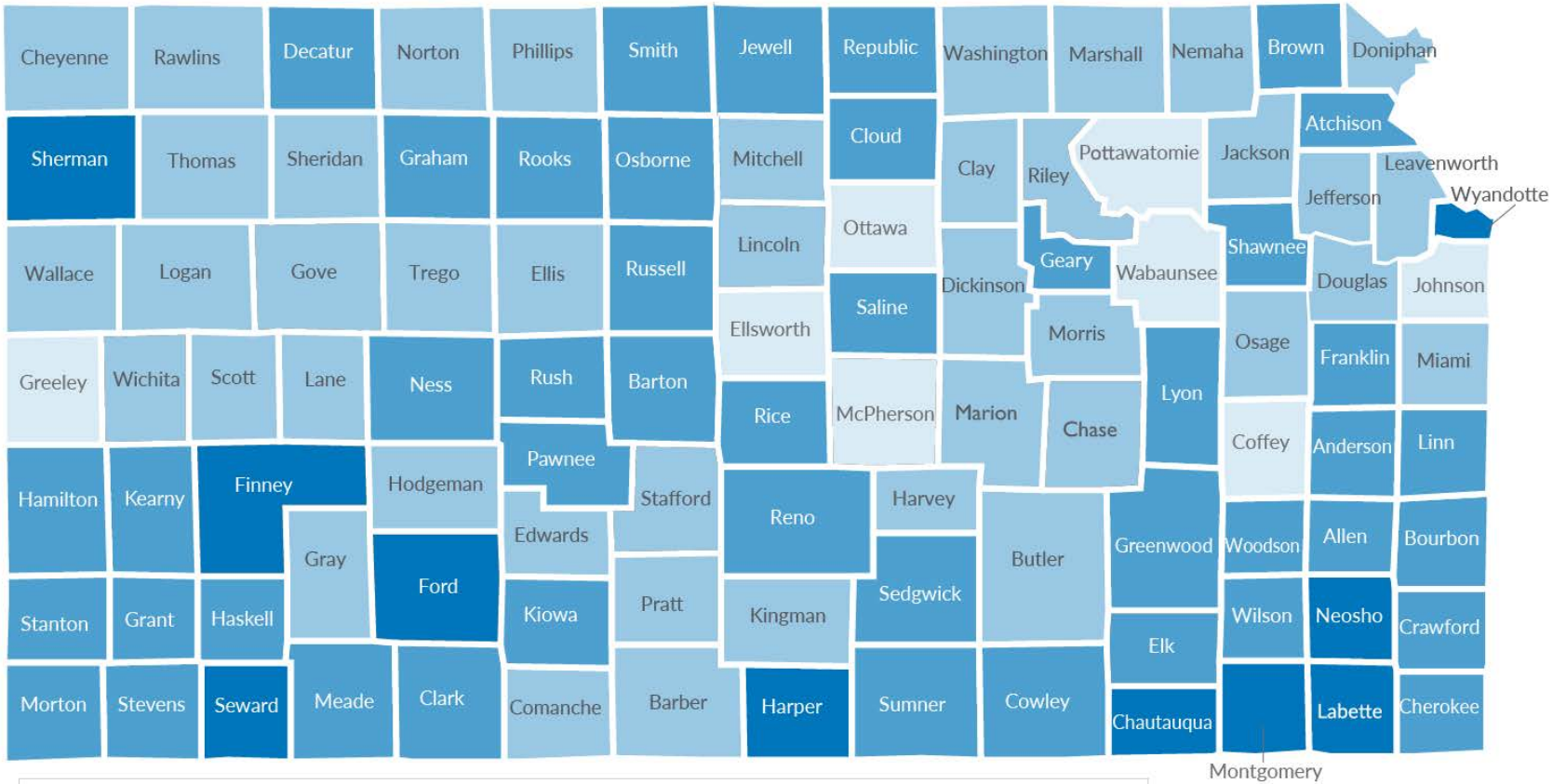



*Source: National Academies Press, 2012.*

# FINDINGS AND RECOMMENDATIONS

- Community sustainability
- Community perception of water quality
- Water quality
- Cost and utility rates
- Guidance and regulations

# Community Sustainability Index in Kansas



# COMMUNITY PERCEPTION: FINDING & IMPACT

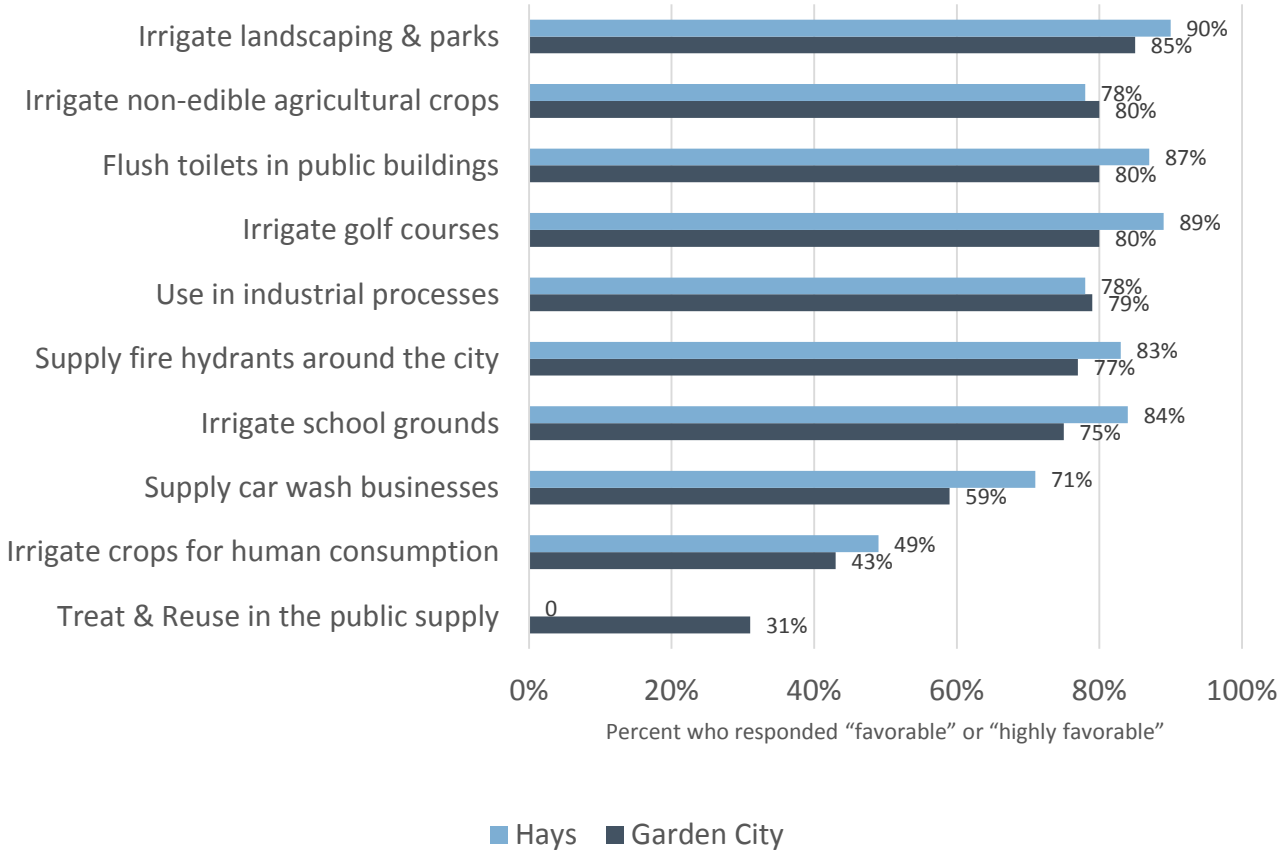
- **Finding**: The community's perception of water quality could decrease if they were not involved in the decision to reuse water
- **Health Impact**: Lead to an increase in the consumption of beverages other than municipal water

# 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




**Garden City**: N = 154

**Hays**: N = 248

*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

# WATER QUALITY

- 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

# WATER QUALITY

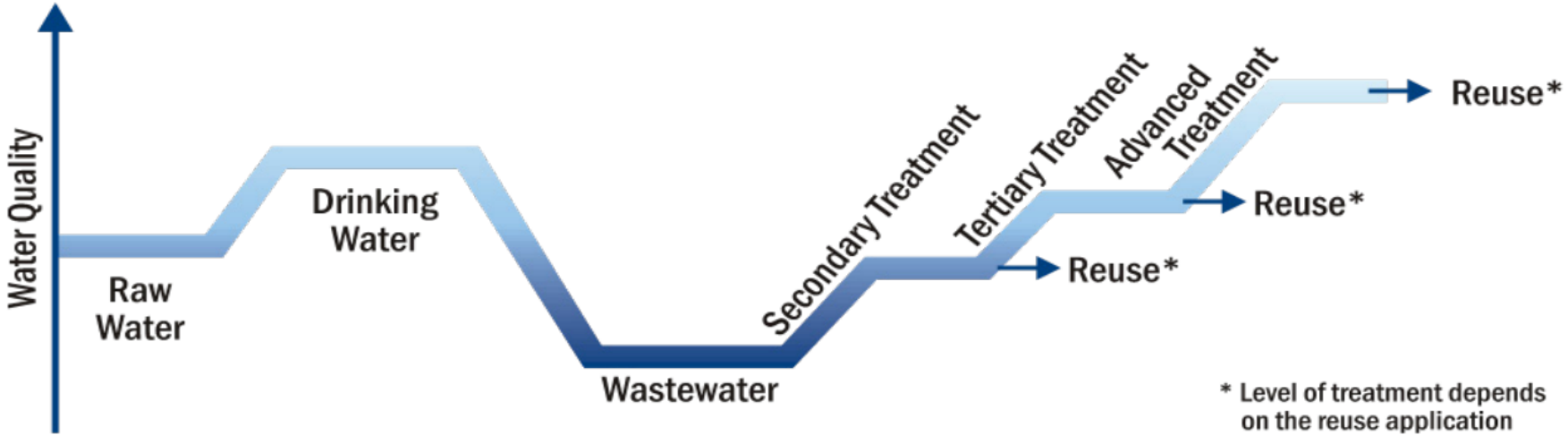



**Figure 1-3**
**Treatment technologies are available to achieve any desired level of water quality**

*Source: EPA, 2012 Guidelines for Water Reuse.*

# 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 and Regulations
- Water quality
- Funding

# FINAL THOUGHTS

- How aware are we of the long term sustainability of our community's water supply?
- Do we know our options for new water sources if our current supply is reduced or impaired?
- How are we communicating with our community about the value of water?
- What steps have we taken to listen to the community's perspective about the water they receive?

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# THANK YOU

## Any questions?

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