Making Bigger Cities Less Thirsty: One Water in San Antonio

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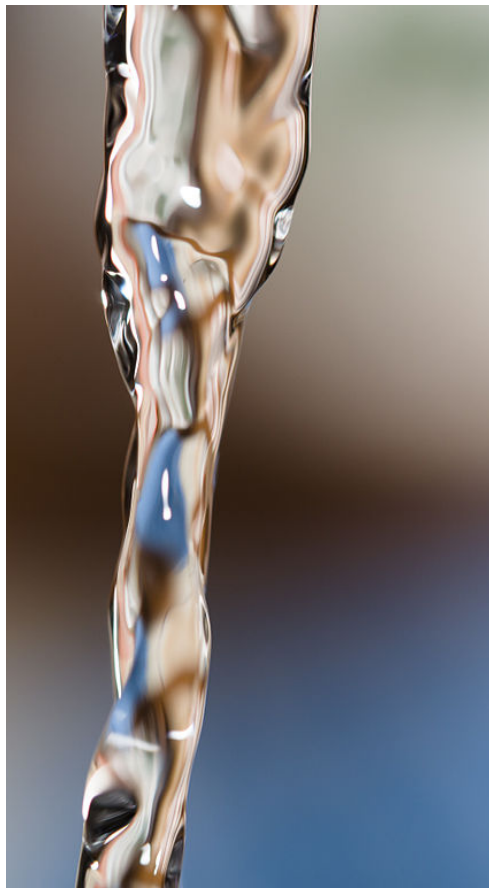

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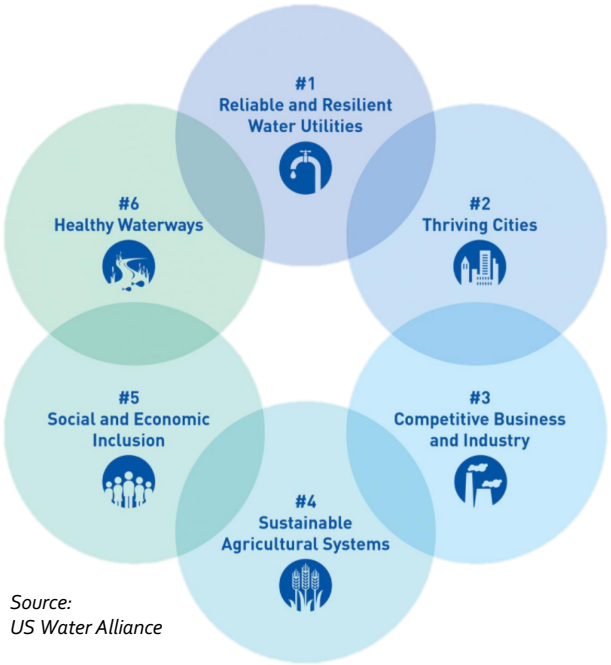
The Challenge in Texas

"Water prices will have to increase by 41% in the next five years to cover the costs of replacing aging water infrastructure and adapting to climate change" (Vox, 2017)

- **Urban Populations Are Growing Rapidly** as rural populations continue to migrate to urban areas. San Antonio was the US city with the largest numeric increase in population between 7/1/2016 and 7/1/2017
- **Water Infrastructure is Aging** and it is not always straightforward for utilities to make large capital investments in traditional ways
- **Natural Supplies Will Become More Variable** as droughts and deluge are predicted to become more intense and frequent, threatening the resilience of current supplies

One Water benefits



Source:
US Water Alliance

Emphasizes the interconnectedness of water to achieve sustainable and resilient water systems

- **Key Aspects**
  - Coordinated stakeholder management
  - Accounting for the true cost of water
  - Maintaining environmental flows
- **Characteristics of the Water Utility of the Future**
  - Reflects the true cost of water
  - Sustainable
  - Resilient
  - Integrated

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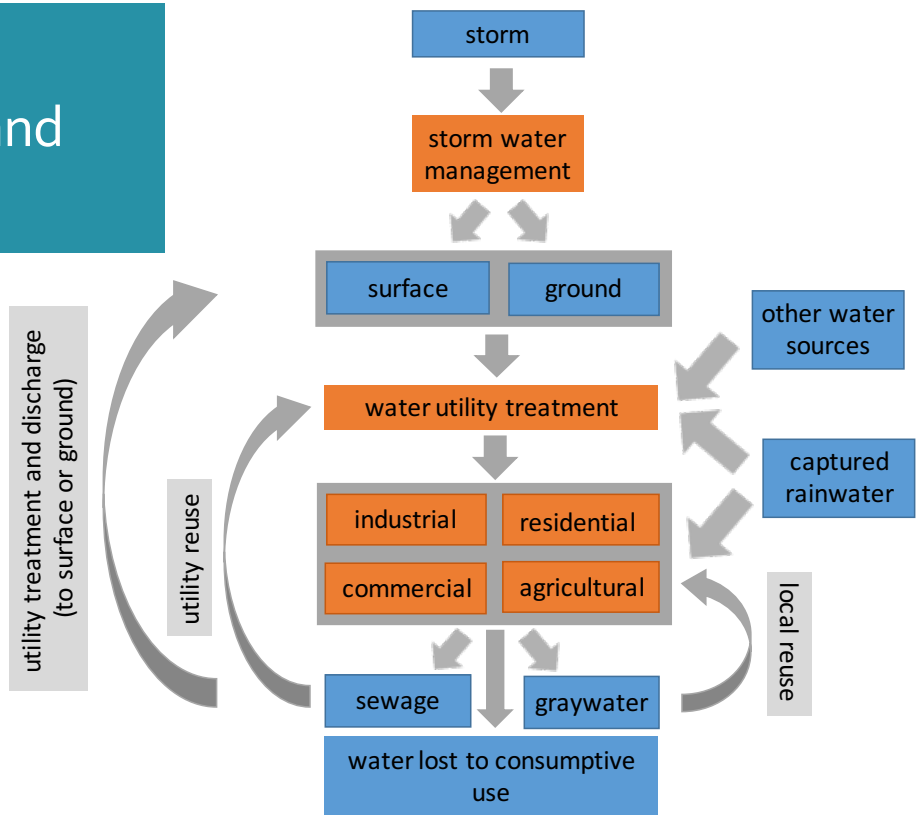
One Water: Supply & demand considerations



- What new sources, treatment and reuse opportunities are most viable in each location?
- What different utility management practices are necessary?
- What are the revenue opportunities and risks?
- What are the best financing mechanisms?
- What are the operational and financial implications of maintenance?

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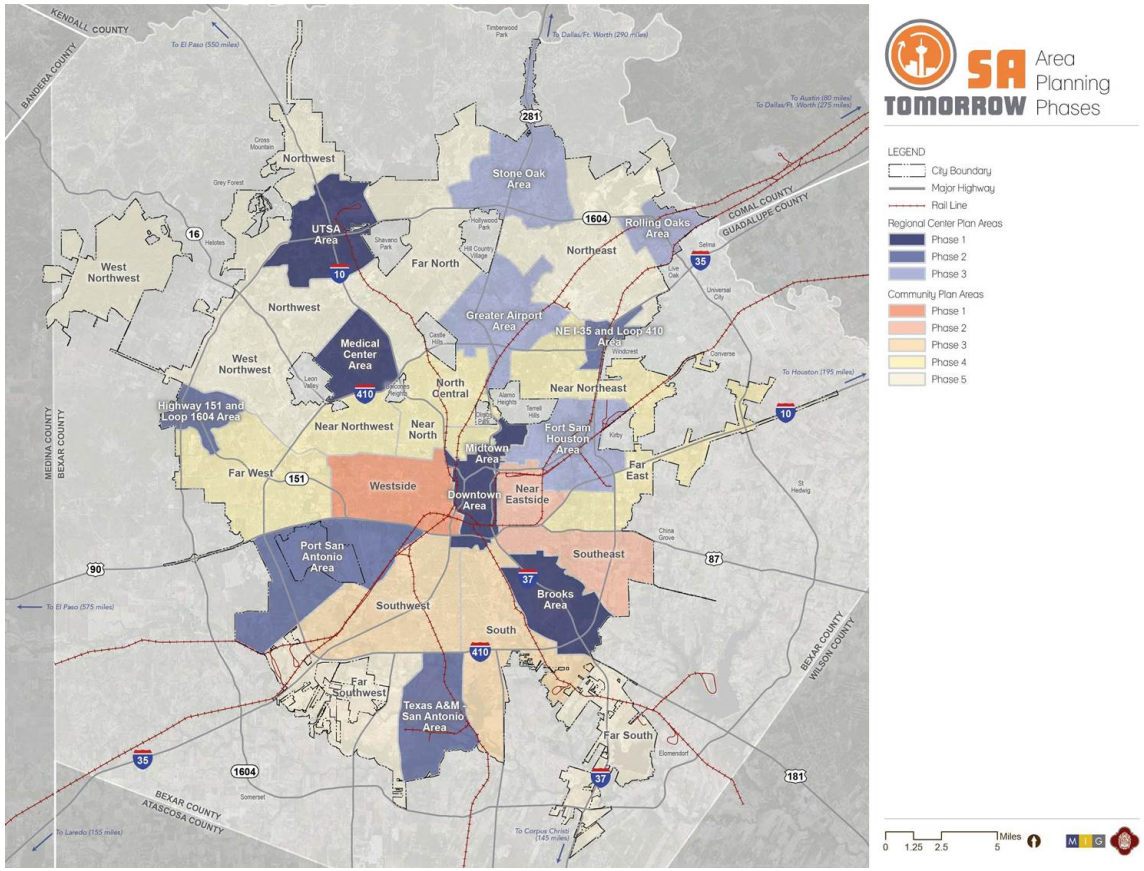
San Antonio Tomorrow Plan

- San Antonio anticipates an additional 1.1 million new residents with 500,000 new jobs and 500,000 new residences by 2040.
- How will the city grow? It is considering energy, water, transportation, and livability on the neighborhood scale.



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Water demand & urban growth

San Antonio Water System

THE CYNTHIA & GEORGE MITCHELL FOUNDATION

- The BU ISE team is collaborating with SAWS and the City of San Antonio to develop a model that forecasts residential water demand under different growth scenarios
- The model is intended to inform decision-making based on the water demand implications of different land use and policy choices
  - Derived from an end use analysis, aggregating water use across different fixtures
  - Accounts for variation in building stock (single family homes, multi-family residences), reflecting different land use choices
  - Accounts for variation in building age, reflecting efficiency of fixtures
  - Incorporates water use for outdoor irrigation, and how climate change may affect this use
- ISE's Excel-based model has been constructed to be generalizable to other cities

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