

Redefining US Drinking Water Security in Three Acts

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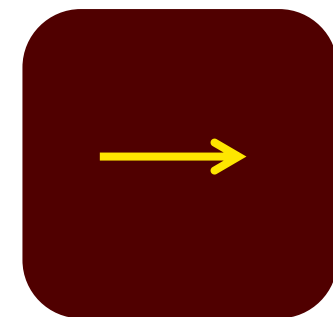
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Network (HWISE RCN NSF 1759972, <https://hwise-rcn.org/>)

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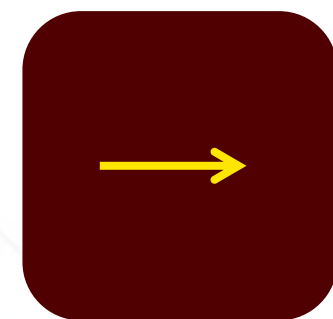


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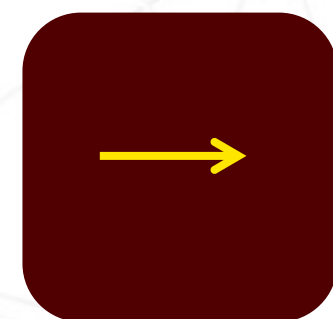
The US drinking water paradigm is broken.

The utilitarian, community water system and regulatory paradigm is failing millions of people in the US.



Public distrust is part of our current paradigm.

Increased *public distrust* of tap water and water services is now *internal* to the current drinking water system itself



We need redefine our model of secure drinking water.

A new drinking water security paradigm, with people and community at the center, may address increasing problems with drinking water

ACT 1: The US drinking water paradigm is broken



The US drinking water paradigm is broken.

*The **utilitarian** US drinking water paradigm and promise*

- Centralized, **utility and community water systems** run by water professionals and monitored by clear regulatory framework delivers clean, safe and improved water for public health for all.
- Following best business practices lead to the most efficient outcomes in terms of pricing, investment, and management.
- Risk, as determined by experts, is minimized to promote efficient and best outcomes
- Predicated on the Public-private divide (regulation; access to capital; support programs)

The US drinking water paradigm is broken.

What is the evidence that it is broken?

Unsafe
Water

High-profile cases: Washington DC, Flint, Milwaukee, *colonias*

Unreliable
and Not
Accessible

National Panel data → Violations

- Reported violations increased over past 25 + years
- Highly uneven burden (hot spots; regional variability)
- Communities respond to water quality violations by taking averting action, through the purchase of bottled water

Not
Affordable

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Census data → Plumbing Poverty

- Plumbing poverty -- A total of 471,000 households ($\pm 5,600$) or 1.1 million people lacked piped water access between 2013 and 2017
- Majority (73%) of households located in metropolitan areas and nearly half (47%) in the 50 largest urban areas (excludes homeless)

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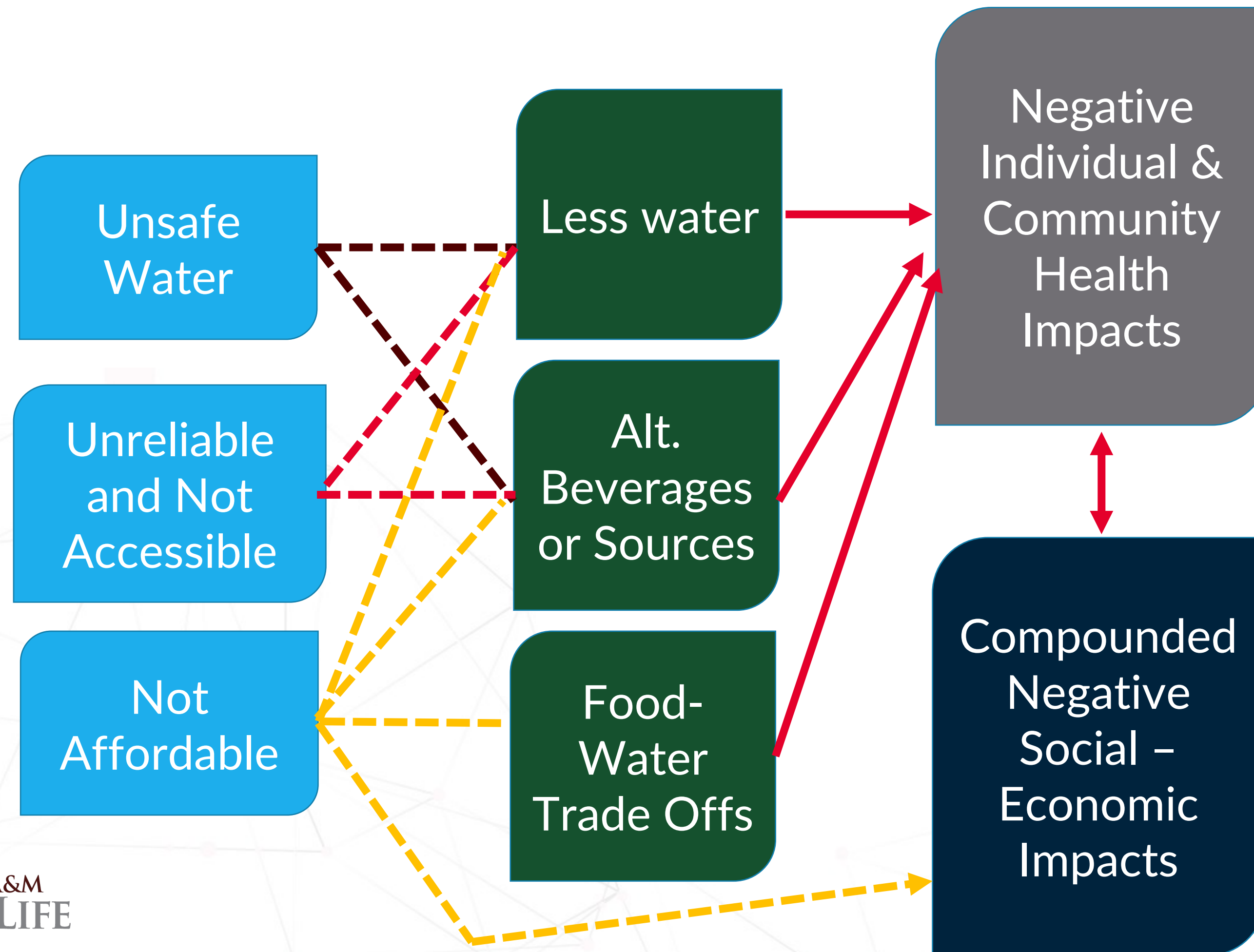
Not
Affordable

US water affordability conditions have worsened since 2017

- low-income households must spend an average of 12.4% of their disposable and/or work 10.1 h at minimum wage (up from 9.9 h) to pay for basic monthly water and sewer services.
- rising prices (due to new investments in high-cost water sources like desalination) combine with underlying economic trends exacerbate affordability.

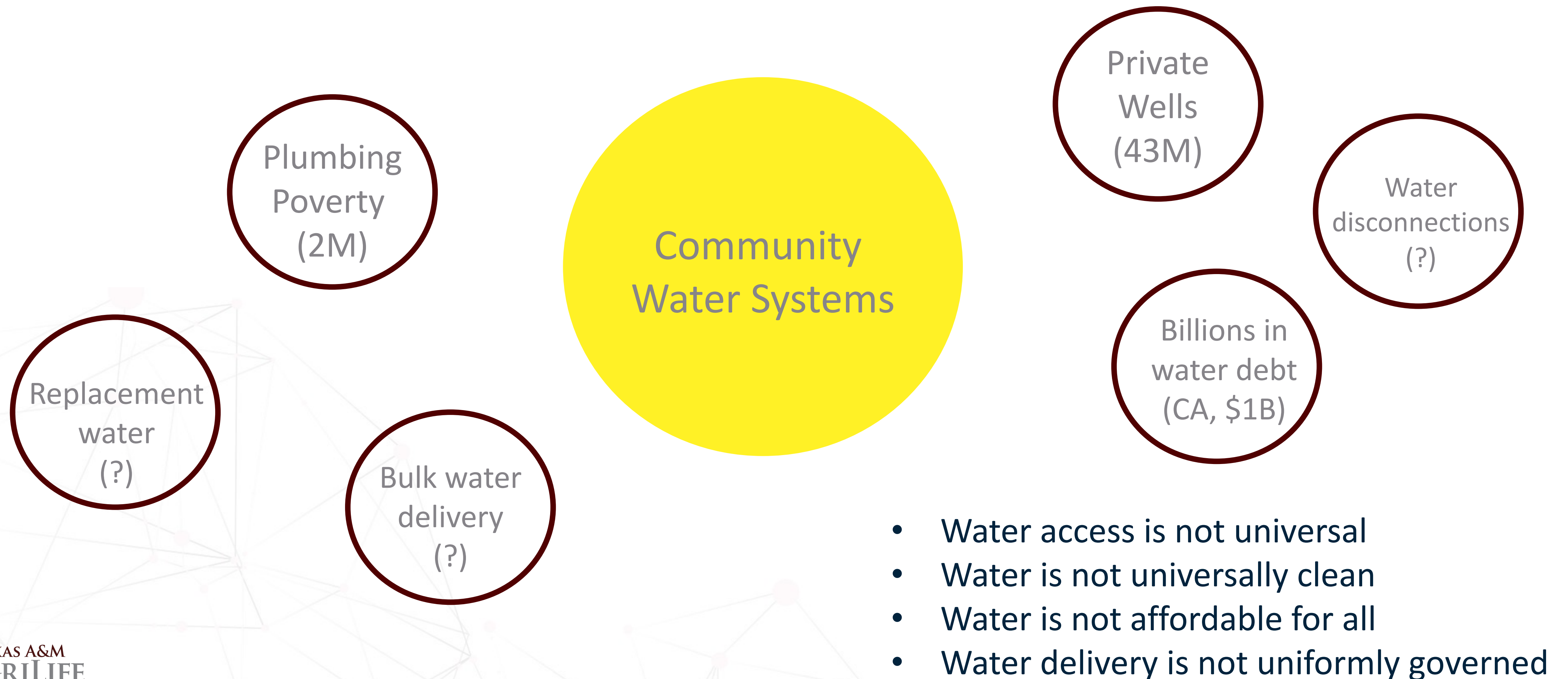
The US drinking water paradigm is broken.

What is the evidence that it is broken?



- Poor hydration
- Dental health
- Mental health
- Differential health impacts during life course
- Impact on nutrition
- Social stigma
- Increased reliance on replacement water
- Lost employment opportunities
- Family disruption
- Debt/arrears (maybe eviction)
- Shutoffs
- Negative impact on credit

The US drinking water paradigm is broken.



ACT 2: Public distrust is internal to drinking water regime



We must disrupt distrust.

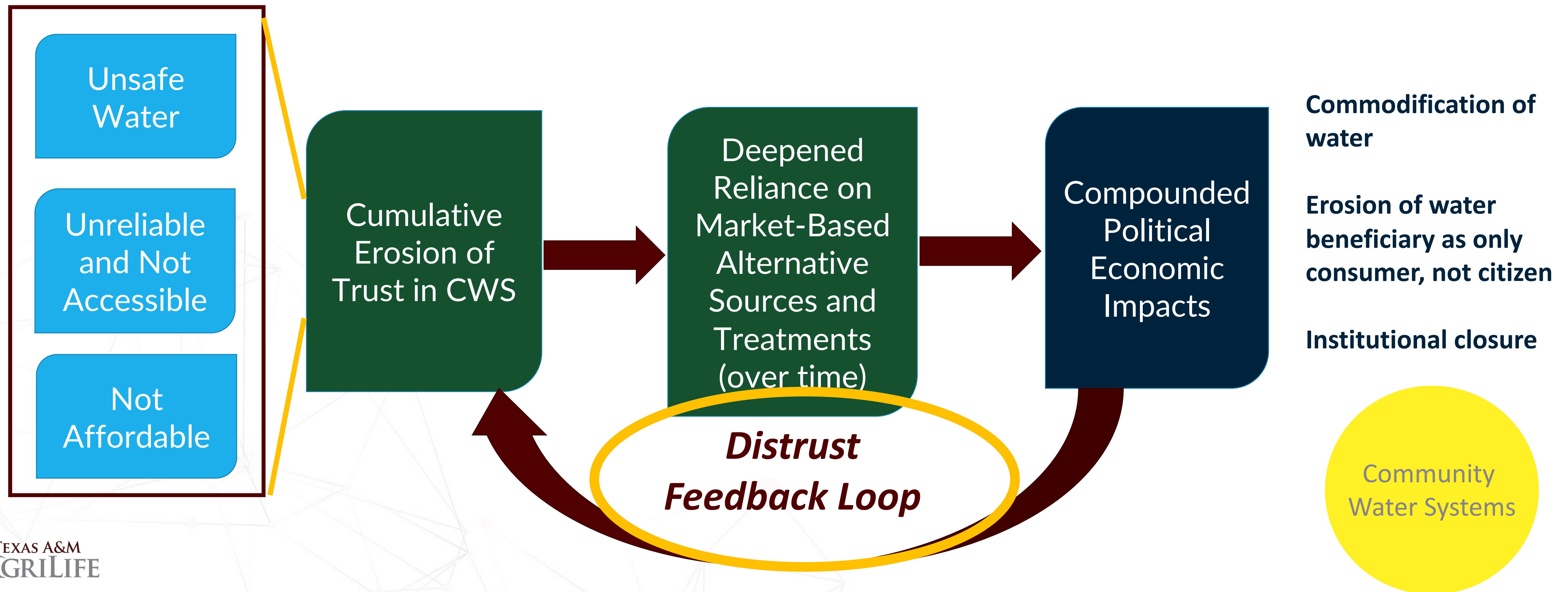
Public distrust in tap water is increasing.

- **Tap water avoidance** increased, especially among Hispanic and non-Hispanic black populations, and households in lower socio-economic classes (Rosinger & Young, 2020; AWWA 2021).
- Water violations which pose an immediate health risk are associated with a **14% increase in bottled water sales** (Allaire et al 2020)
- AWWA's survey (April 2021) reports that of those who already drink bottled water, 52% believed it was more desirable than tap water because of taste, quality, safety, and/or odor; 24% said they never drink their tap water.



We must disrupt distrust.

*Public distrust is **internal** to the existing utilitarian drinking water regime*



We must disrupt distrust.

*Public distrust is **internal** to the existing utilitarian drinking water regime*



ACT 3: We need to replumb our drinking water models



We need to replumb our drinking water models

- Begin with the principle of the human right to water to inform policy and practice
- Adopt a drinking water security paradigm that pivots on outcomes
- Invest in new models of accountability and affordability (not just grey infrastructure)
- Provide inclusive and community-based processes for water quality standards
- Reporting transparency, accessibility
- Expand the umbrella of regulation and investment to support more a broader universe of beneficiaries: well owners/off-network communities, renters, homeless, and communities of care (schools, prisons, etc.)

“CWS plus model” → financing, investment, subsidies and support to new modalities of public benefit

Thank You. Questions?