



Conflict and Change in LA Water:

*Deciphering meaning
and clarifying goals*

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This presentation has two primary levels:

- ▶ Identifies conflicts and change in the urban water infrsystem
- ▶ Distinguishes nuance in meaning and goals guiding change



Agenda

- ▶ Overview of LA Water
- ▶ Define perceptions of sustainability
 - ▶ Frame analysis – “self reliance”
 - ▶ Problematize sustainability goal
- ▶ Problematize decentralization
 - ▶ Distributed systems
- ▶ Conclusion and recommendations



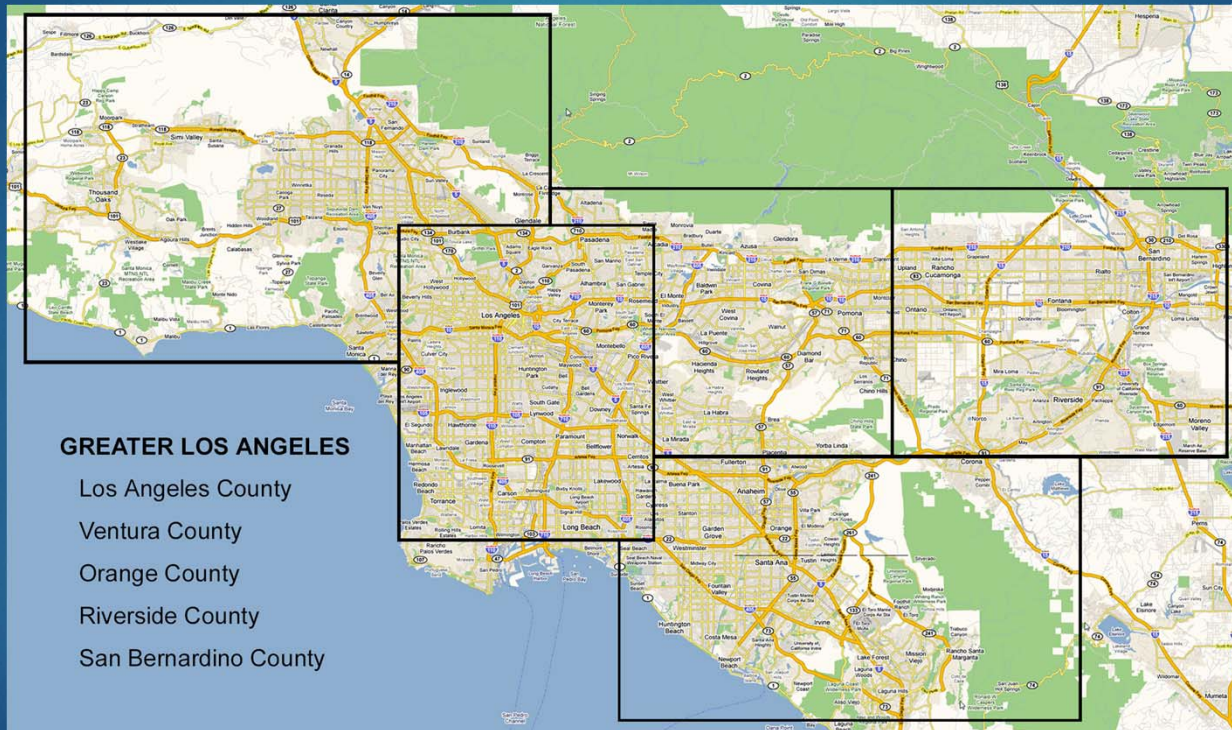
Power of Cities for Regional Sustainability

- ▶ House a lot of people
- ▶ Economic engines
- ▶ Quality and quantity of resources
 - ▶ Availability to downstream users (and upstream in the case of LA)
 - ▶ Widespread ecological impacts of pollution



City of Los Angeles 4 million

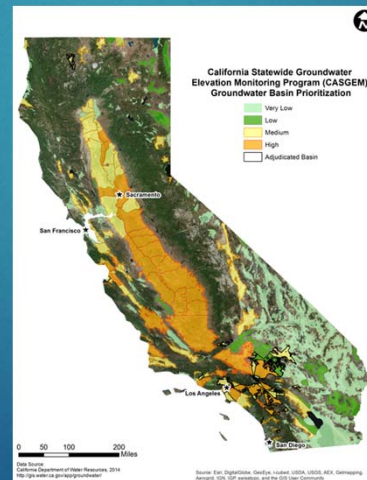
Greater Los Angeles 19 million



Water is the Lifeblood

Four Sources:

- ▶ Falls on
- ▶ Flows through
- ▶ Groundwater underneath
- ▶ Import in



Mediterranean Climate

Average annual precipitation:

- ▶ Los Angeles - 15 inches



*<https://rainfall.weatherdb.com/l/40/Los-Angeles-California>

LA is the "Aqueduct Empire" – Steve Erie



Drought



Folsom Lake - July 20, 2011



Folsom Lake - January 16, 2014

"The 3-year period from 2012 to 2014 was the worst unbroken drought interval in the past millennium." - Julia Fahrenkamp-Uppenbrink

<http://science.sciencemag.org/content/347/6222/624.1>

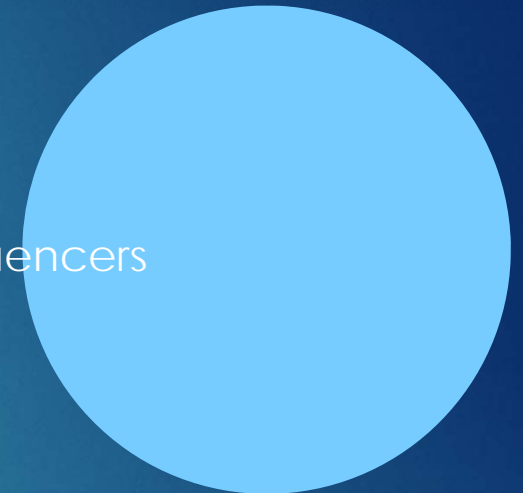
Legislation w/ "Self-Reliance"



- ▶ City of Santa Monica, Sustainable Water Master Plan and Sustainable City Plan – 2011
- ▶ Sustainable Groundwater Management Act – September 16, 2014
- ▶ Governor's State of Emergency - 17, January, 2014
- ▶ Mayor's Executive Directive – October 14, 2014
- ▶ Governor's Executive Order – April 1, 2015
- ▶ City of Los Angeles, Sustainable City Plan – April 8, 2015

“Self-Reliance” Research Methodology

- ▶ 20 Interviews
- ▶ Semi-structured: 1.5 - 2.5 hours
- ▶ Primary Water Actors: Decision-makers and Decision-influencers
 - ▶ Nonprofits
 - ▶ Water managers
 - ▶ Elected officials
 - ▶ Experts (legal, scientists, etc.)



Definitions of Self-Reliance

- ▶ Reliability – stable amounts
 - ▶ Old model: cities/nations/empires
- ▶ Environmental sustainability – environmental impacts
 - ▶ 20th century model
- ▶ Local water
 - ▶ 21st century model?



What is sustainability in this system?



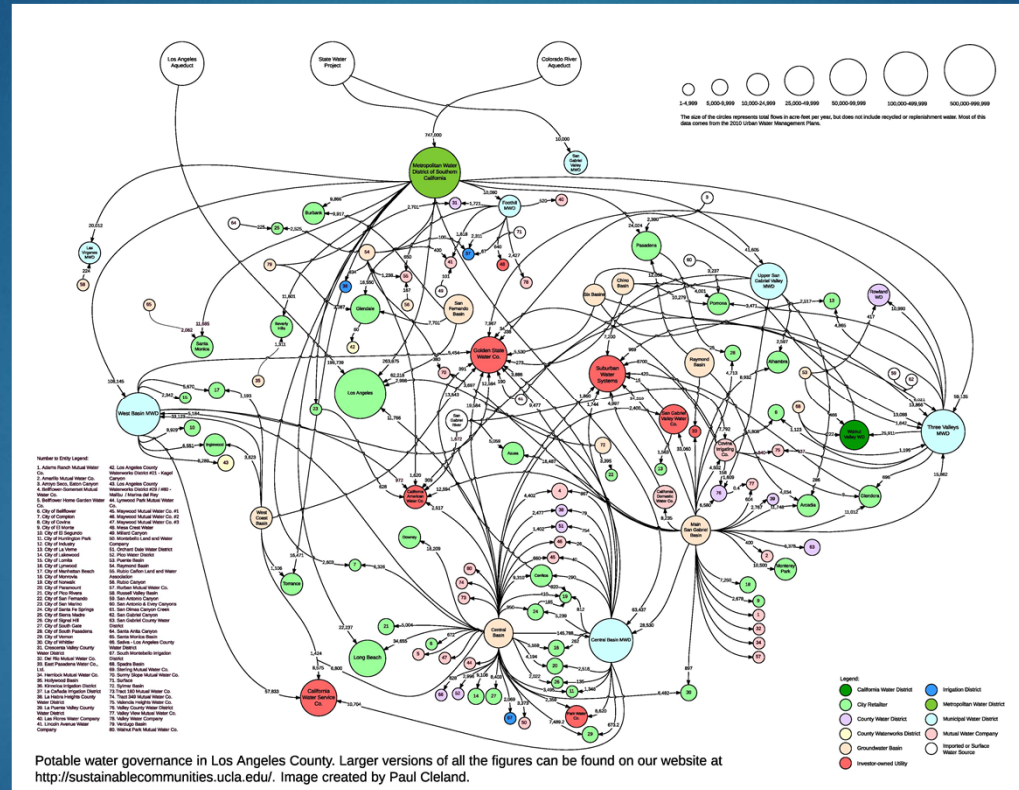
- ▶ Scale of sustainability: global/region; nation/region; state/region; local/region
- ▶ Literature points to decentralization as future goal
 - ▶ International development
 - ▶ Political science
 - ▶ Economics
 - ▶ Resource management

Goals of decentralization

- ▶ Ability to respond to uncertainty and disaster
- ▶ Ability to deal with complexity
- ▶ Accountability
- ▶ Transparency
- ▶ Participation
- ▶ Buy-in



LA Region Water System:



**More than 100 official entities involved in management of potable water alone*

Challenges for LA Water: Empirical Data

- ▶ Water as public commodity and/or private investment (DW)
- ▶ Regulatory environment – lack of clear rules for private investment
- ▶ Uneven pricing
- ▶ Public's expectations for water management entities – not seen or heard (JS)
- ▶ Water resources control board LA over prescriptive (JS) – no consistency across boards
- ▶ Lack of agency responsibility for what happens inside of the home and slow to adopt new technology due to fears around careers (JS)
- ▶ No credit for infiltration
- ▶ No mechanisms for water transfers (San Gabriel)
- ▶ Relationship between agencies and historic roles/expectations
- ▶ Missions of various entities incompatible
- ▶ Lack of oversight of managing entities
- ▶ Need for watershed level management (DW) – issues w IRWMPs
- ▶ Waste water/recycling/OC captures from Santa Ana but what if recycling happened upstream? Need for One Water within the watershed (DW)
- ▶ Federal-State-County-City regulations (MG)
- ▶ Large simple structures have more opportunities than complex structure of small providers (MG)
 - ▶ Don't have much flexibility
 - ▶ Lack efficiency
 - ▶ Governance constraints
 - ▶ Lack funding
 - ▶ Lack technical expertise
 - ▶ Lack adequate rights (align with basin adjudication conversation)

Fragmented Water Systems



- ▶ Swiss water sector: 1000 wastewater and 3000 water supply companies – 7 million people *
- ▶ Germany: 6000 water utilities – 12x the Swiss population *
- ▶ England and Wales: 28 water companies (app 56 million in 2011 - wiki) *
- ▶ Italy and France – re-centralization

*(Lienert, Monstadt, & Truffer, 2006)

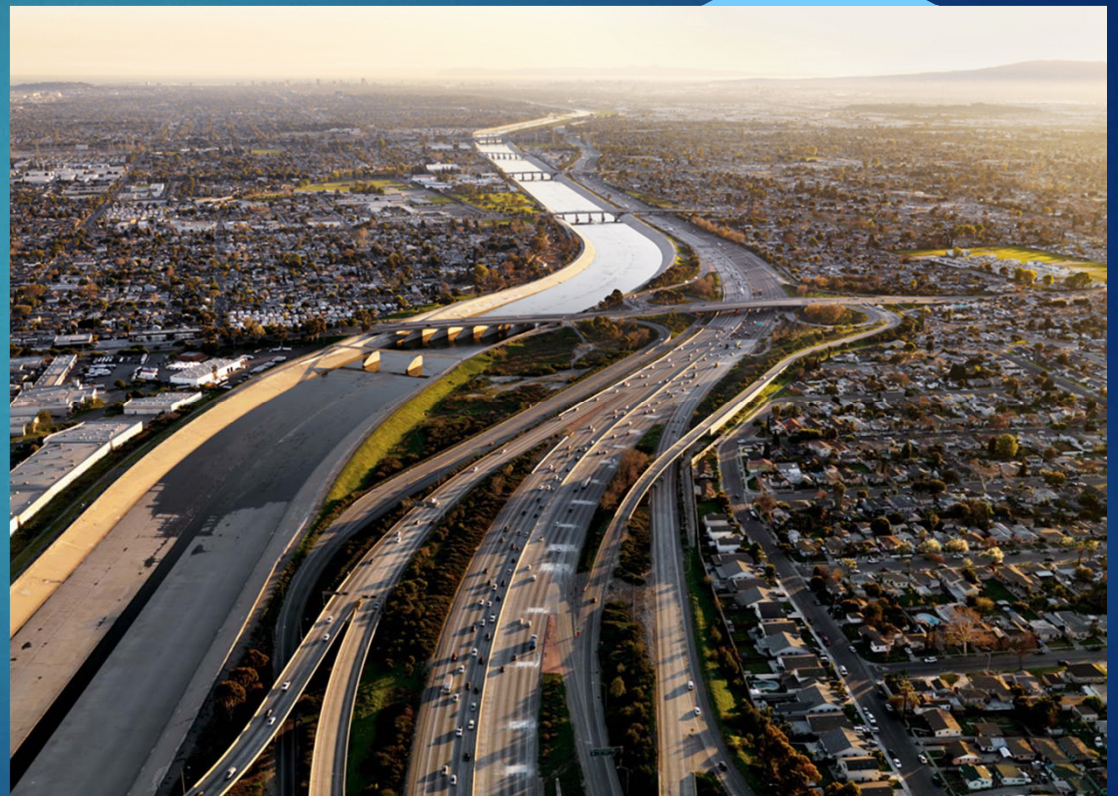
Alexis de Tocqueville

Democracy in America (1835–1840)

- ▶ Administrative decentralization
- ▶ Engaged citizens attached to their own participatory rights and to issues of common concern, which grows from personal experiences of local political and associational life (82–93, 225–231)
- ▶ The average township of his day “numbers two to three thousand inhabitants, [and] is therefore not so extensive that all its inhabitants do not have nearly the same interests” (58)

When does decentralization fragment?

- ▶ Origins of decentralization
- ▶ Does it serve its intended functions?
- ▶ Does it still make sense?
- ▶ At what scale?
- ▶ Cycle of centralization?
- ▶ Social/environmental justice concerns
 - ▶ Flint, MI; Louisiana, Mississippi
 - ▶ Lead – education – crime



Distributed System Goals

- ▶ *Water reclamation and reuse*
- ▶ *Resource recovery*
- ▶ *Enhanced resilience*
- ▶ *Flexibility to meet new demand*
- ▶ *Keeping water local*
- ▶ *Corporate sustainability*
- ▶ *Healthier ecosystems*

* *(Johnson Foundation Report, 2014)*



Lessons for distributed water



- ▶ Decentralization, especially in the west, part of American identity
- ▶ But there is great need for coordination, especially as urban areas expand and densify
- ▶ Need is more than state and local policies and incentives, but institutional consistency
- ▶ Even w tech and green tech, need for centralized data, oversight and monitoring
- ▶ Funding issues

Conclusions

- ▶ Urban water infrasystems are being pressured to change
- ▶ The language people use has different meaning
- ▶ Distinguishing these differences could improve decision-making outcomes
- ▶ Concepts and goals like decentralization carry changing connotations
- ▶ Deciphering current and future context is imperative for sustainable change



Thank you



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