Whither Urban Water Policy in California: Regional Implications

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California escaped a four year drought with floods – how should urban areas respond?

- More people and a changing rainfall regime
  - Likely drier dry years and wetter wet seasons
- Urban regions are impermeable
- Most regions use 50% or more of their water on outdoor landscapes
- Our urban water systems are leaky, rely on imported water and expending used waters to sea
- **EO B-37-16** (2015) states a need to change state water use patterns and establish new norms
  - “Conservation as a way of life”

Promoting Efficient Landscapes

- Water Efficient Landscape Ordinance (MWELO)[1]
  - Landscape conservation legislation dates back as far as 1990
  - Established Maximum Applied Water Allowance for new construction

- 2015 Updates
  - Increased conservation and integration with retailer residential water budgets
  - Conservation and water efficiency to better create new beneficial landscapes
  - More consistency across across jurisdictions

- Broader approach
  - Maintain life in the soil
  - Minimize energy use by reducing irrigation, petroleum based fertilizers and pesticides and maintaining Tree Canopy Cover
  - Capture and reuse rainwater and graywater

[1]DWR Title 23 Chapter 2.7 Model Water Efficient Landscape Ordinance

MWELO: Gritty Details

- Applies to new construction projects with an aggregate landscape area equal to or greater than 500 sq ft. . .
- Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sq ft
    - And more details
- Requires automatic irrigation controller using either evapotranspiration or soil moisture data
- Use a certified irrigation designer and irrigator
- Establishes a maximum applied water allowance based on a formula taking into account mulch, different land use types, types of irrigation systems, plant factors, uses, recycled water and more.

Point of MWELO

- Over half of urban water is used for landscape irrigation.
- MWELO is to improve water savings in this sector
- Phased transition to climate appropriate landscapes

- Potential obstacles
  - Poor plant selection in nurseries
  - Poor skills in irrigation technologies
  - Poor skills in landscape maintenance of different types of plants
  - Cost of conversion

Zero Net Water –Another Strategy

- Zero Net Water, or neutrality of water demands, is another strategy
- Cities and utilities have existing ZNW ordinances
  - Cambria
  - City of Big Bear Lake
  - Lompoc
  - Morro Bay
  - Napa
  - Oxnard
  - City of St. Helena
  - San Luis Obispo
  - And East Bay Municipal Water District
- Cities can grow and maintain or reduce overall water consumption

Requirements and Benefits

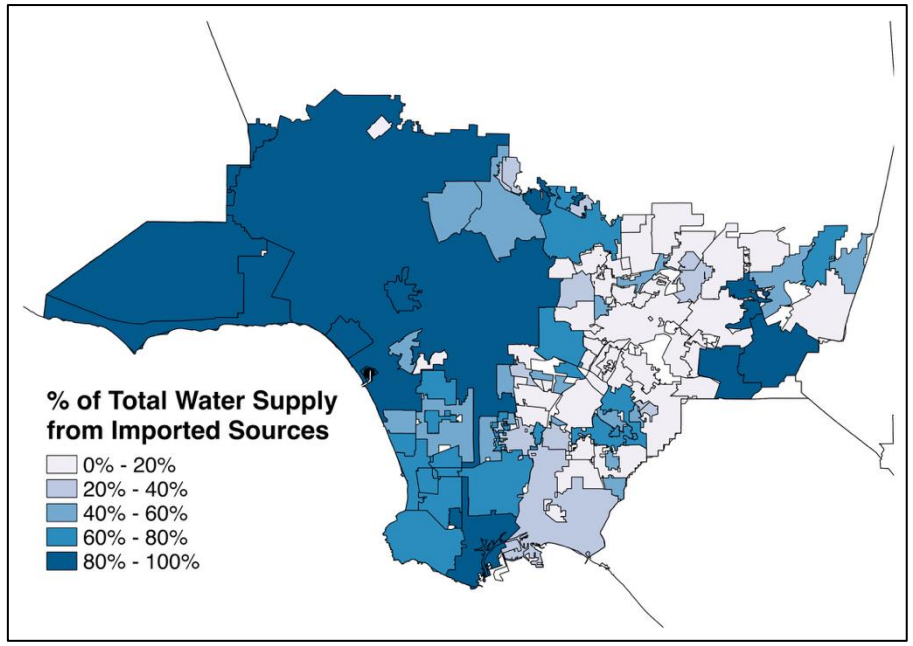
- Often 2:1 match requirement for new development
- Offset fees (with clear nexus to new developments' needs)
  - Banked for funding efficiency programs in same territory on a water use per bedroom rate
    - Retrofitting landscaping and irrigation of city public spaces
    - Low cost housing subsidy to replace leaky plumbing
    - Expanding purple pipe infrastructure
- Water Credits
  - Fund stormwater capture or wastewater reuse
- Implementation of on-site water recycling and reuse

Effects

- Adds extra cost to development
- May bring conservation to low income residents
- Provides funding for new conservation technology and techniques and incentivizes quantitative approaches to demand management
- May delay impacts of additional water demands
- Requires implementation and monitoring for compliance

Other Considerations

- Los Angeles County
  - 88 cities, over 100 different water delivering entities
    - Public
    - Private nonprofit
  - Very different fiscal capacities for
    - Turf replacement or MWELO incentives
    - Finding and repairing leaky infrastructure
    - Implementing new tiered rates
    - Implementing conservation programs that will lead to reduced revenues without tier rate changes



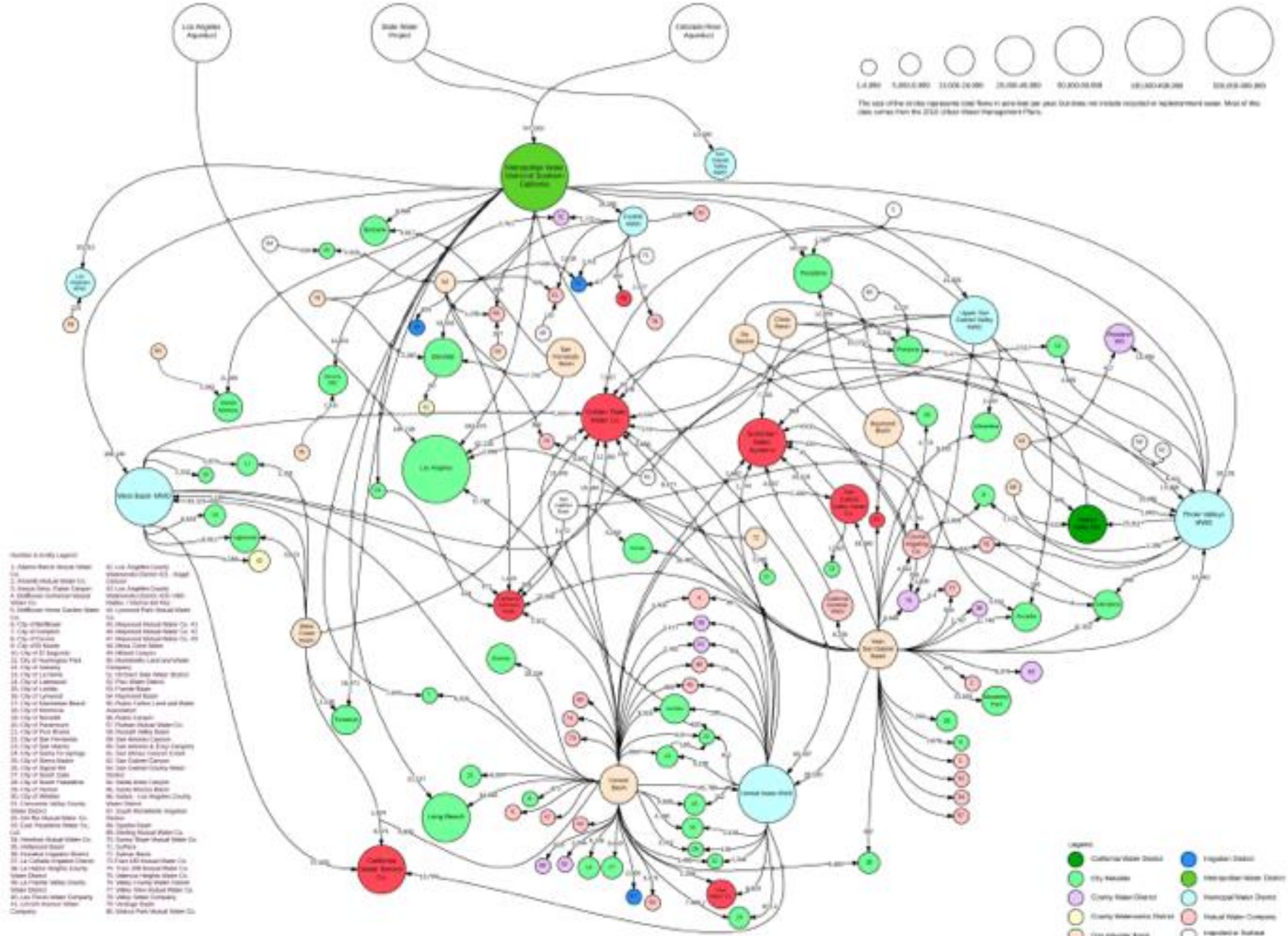
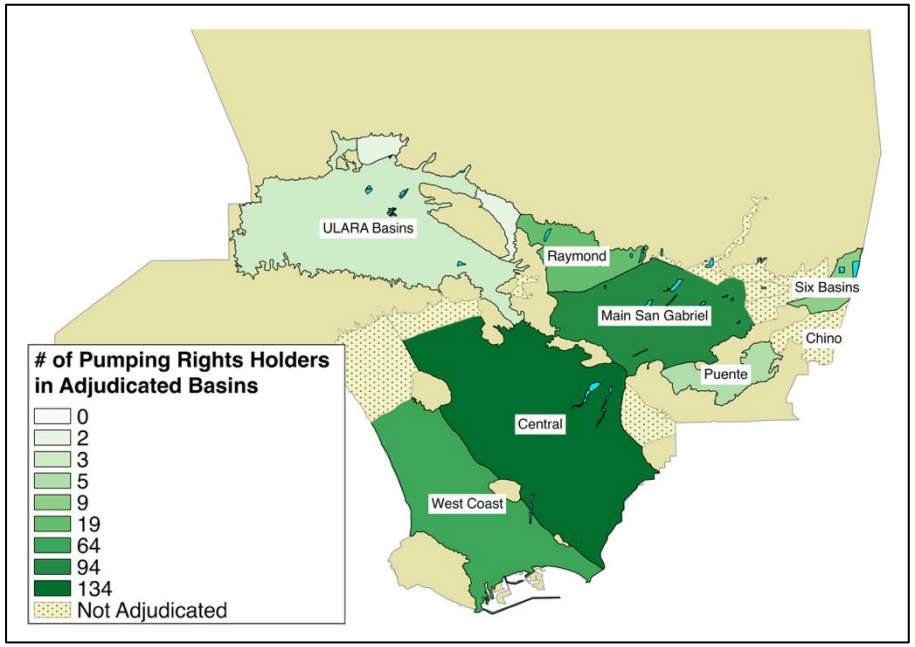


Figure 1. Potable water governance in Los Angeles County. Larger versions of all the figures can be found on our website at http://sustainablecommunities.ucla.edu/. Image created by Paul Cleland.

Groundwater adjudications

- Groundwater rights are legally inscribed as a property right
- Groundwater storage amounts are fixed in the adjudications
- Numbers of cities have no groundwater access
- Adjudications preclude using groundwater resources conjunctively as a regional resource



Water is sliced and diced, regulated and managed in a segmented manner

- Water supply
- Stormwater
- Wastewater
- Return water
- Groundwater
- Recycled water
- Purple pipe water. . . .
- And managed by different agencies

Conclusions

- There are many ways yet to conserve water
- We need resources to do so at all scales
- Water management needs to move towards One Regional Water