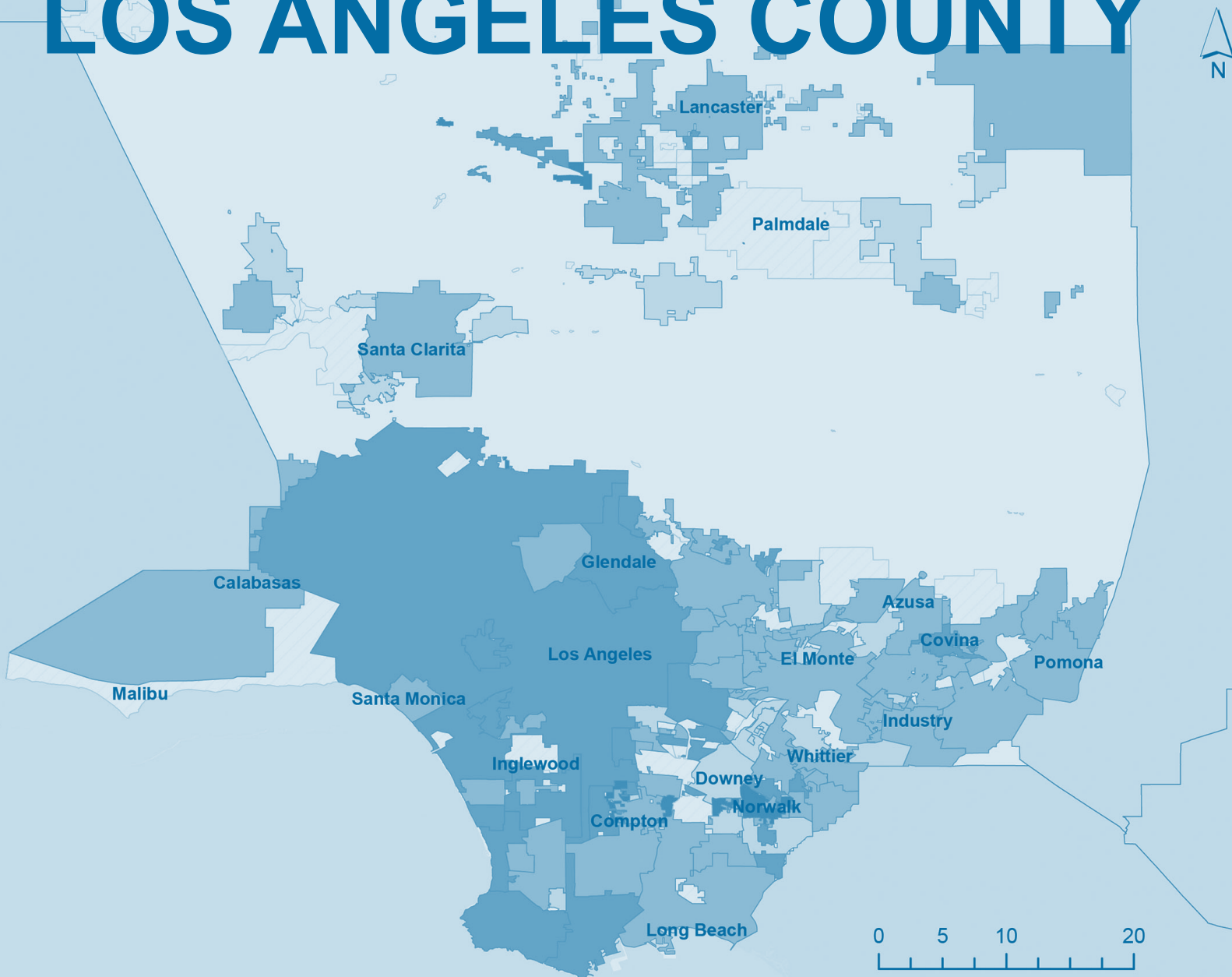


DISPARITIES IN DRINKING WATER COST WITHIN LOS ANGELES COUNTY



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Disparities in Drinking Water Cost Within Los Angeles County

Numerous studies have analyzed differences in drinking water cost *between* regions, such as Los Angeles and the Bay Area. A report recently released by the UCLA Luskin Center, however, demonstrates that there are substantial disparities in the cost of water to customers *within* Los Angeles County. We collected cost data from 115 community water systems,¹ more than half of all in the county, during 2014-2015 to perform this analysis.²

Our findings show that the average annual cost of drinking water to the typical single-family residential customer was \$814. This average, however, masks enormous variation in the cost incurred for the same amount of water across different systems. As Table 1 shows, average customer costs varied from \$145 charged by the Maywood Mutual Water Company #1 to \$2,244 charged by the California Water Service Company in Lake Hughes for 1,800 cubic feet (18 CCF) of water. In this policy brief, we outline potential explanations for these differences and feasible policy responses to reduce cost inequalities in Los Angeles.

Table 1. Most expensive and least expensive drinking water systems in LA County

System Name (Population served)	Annualized Cost for 18 CCF
Five Most Expensive Systems	
1. CA Water Service Co.- Lake Hughes (711)	\$2,244
2. CA Water Service Co.- Leona Valley (1296)	\$1,834
3. LA County Waterworks Dist. #21- Kagel Canyon (991)	\$1,658
4. Park Water Company- Bellflower/Norwalk (67,200)	\$1,539
5. Park Water Company- Lynnwood/Compton (45,400)	\$1,502
Five Least Expensive Systems	
1. Maywood Mutual Water Co. #1 (5,500)	\$145
2. Pico Rivera Municipal Water (39,000)	\$192
3. Lomita Municipal Water (20,256)	\$235
4. City of Industry Waterworks System (7,000)	\$278
5. LA County Waterworks Dist. #40- Antelope Valley (9,822)	\$282

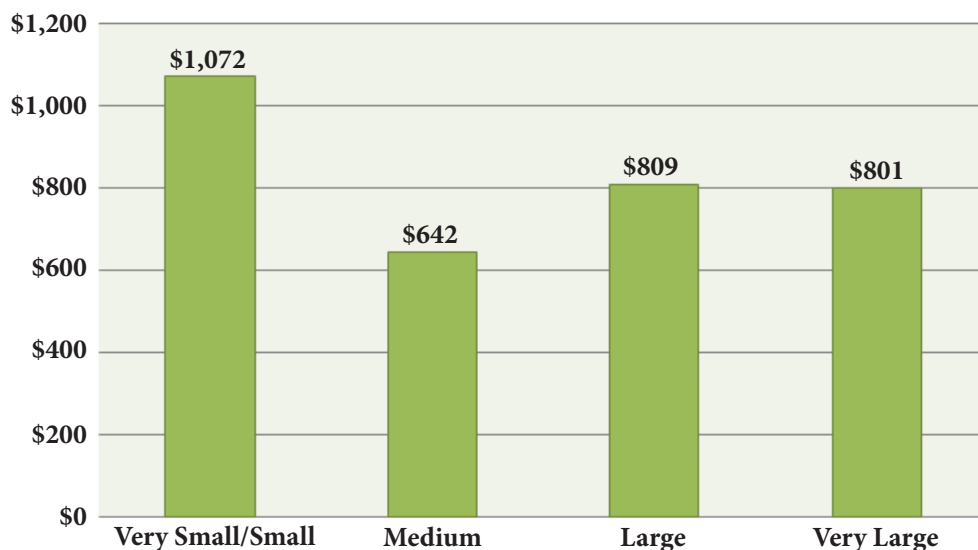
1 Community water systems are drinking water systems regulated by public agencies. These systems provide water for human consumption through pipes or other constructed conveyances to at least 15 service connections used by year-round residents or regularly serving at least 25 year-round residents, as opposed to private systems which serve fewer than 15 connections or 25 residents.

2 As more fully detailed in the methodology section of our full report, we calculate the average cost of water service for customers in each water system for which we have data in Los Angeles County by using an average consumption estimate (18 CCF) for single-family residences and applying the different price structures employed by each system. We make two necessary and important assumptions: 1) Customers are connected to the system by the smallest available connection size (5/8" connection, or 3/4" if 5/8" was not offered); 2) The assumption of 18 CCF per month as typical household is based on dissertation research by Caroline Mini, who calculated average single family residential water use in the City of Los Angeles between 2000 and 2010.

Contributors to Cost Disparities within Los Angeles County

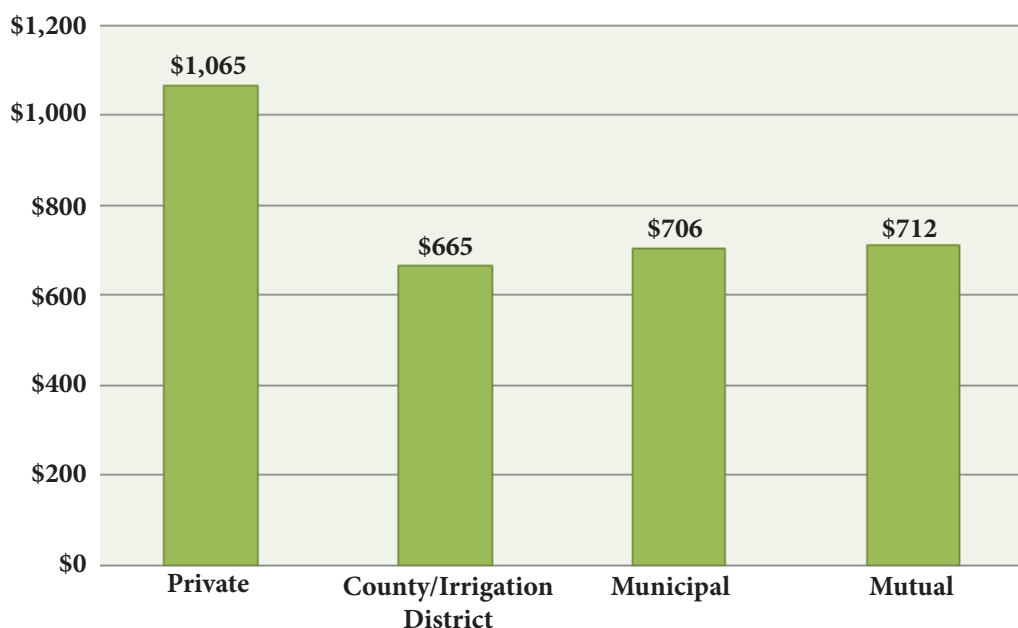
There are several factors which might contribute to disparities in cost within the county: system size, system governance structure, system source reliance and the socioeconomic profile of a system's customer base. We analyze cost differences for each of these potential explanations.

Figure 1. Average Water Cost by System Size



The size of a community water system is defined by the number of customers it serves. As Figure 1 shows, very small (25-500 customers) and small (501-3,300 customers) water systems exhibit much higher average costs compared to other system types. While we only have cost data on 18 of these (very) small systems, the cost difference between these and all other systems is statistically significant and suggests that system size itself contributes to inequalities in water cost across the county.

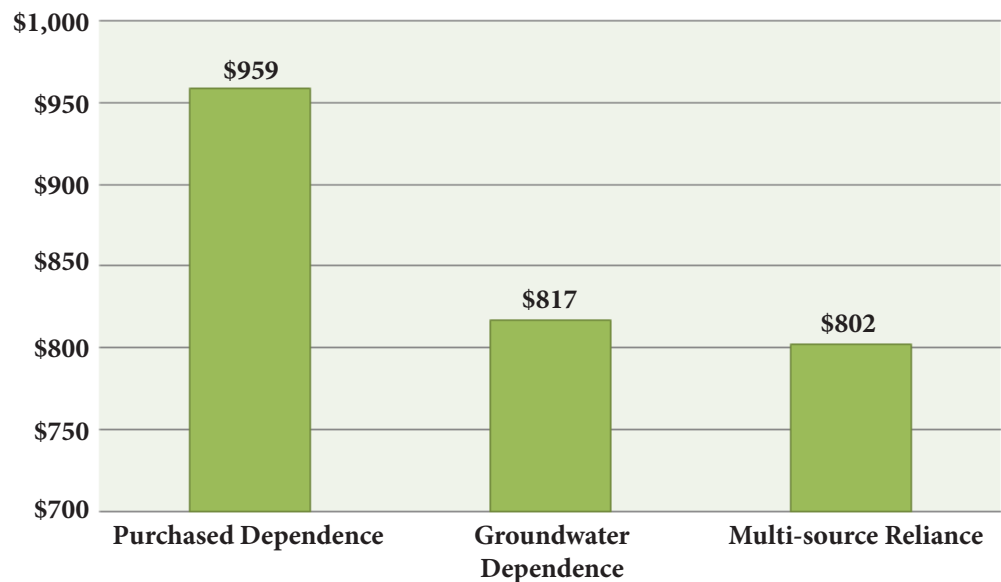
Figure 2. Average Water Cost by System Governance Structure



Each type of community water system is regulated by a different body of state law. As Figure 2 shows, we observe much higher water costs among private systems than county or irrigation districts, municipal or mutually-governed systems. The cost difference between privately-managed community water systems and all others is most notable.

Community water systems entirely dependent either a) on groundwater within their boundaries or, b) on purchased, imported water will be more vulnerable to shocks in water quantity, quality and cost than systems which rely on multiple sources of supply. Figure 3 shows that there is a major cost difference between the few systems wholly reliant on purchased water³ and all other systems, whereas the cost difference between the large number of groundwater-dependent systems and multi-source systems is not large. However, we note that ground-water dependent systems are likely to see their costs rise in the near future due to the cumulative effects of over-drafting, deteriorating groundwater quality, and climate change.

Figure 3. Average Water Cost by System Source Reliance



High water cost may constrain even essential water uses in low-income households, and thus water cost barriers to these households are of the utmost concern. In Los Angeles County, however, water service costs are slightly lower among systems which have a high proportion of low-income and/or disadvantaged customers, and there thus appears little concern of an affordability burden perpetuated at the system scale. While system-wise income disparities may not be apparent, 90% of low-income households in the county reside in non-disadvantaged systems. Disadvantaged households served by non-disadvantaged systems still need household-level assistance.

Policy Responses to Cost Disparities: Affordability, Consolidation and Trading Programs

Having outlined the magnitude and causes of cost inequalities, we briefly outline feasible policy responses to address this problem. We identify three potential policies, two at the system scale and one at the household scale.

At the system scale, the most direct policy mechanism to bring about cost equity is to encourage the consolidation of small systems with larger systems. The state has gained substantial authority to encourage or mandate the consolidation of underperforming small systems via State Bill 88. In order to bring about substantial

³ In our sample, we were only able to obtain cost data for seven systems wholly dependent on purchased water, so these results must be interpreted with caution.

economies of scale, counties such as Los Angeles must use their planning and development authorities to incentivize consolidation on a case by case basis, rather than enabling new system creation.

Another important system-level policy to reduce cost inequality is the creation of an urban water market in Los Angeles County. A market can reduce cost inequities by addressing the underlying problem of single-source reliance by many systems, which in turn has been created by an inequitable allocation of water rights to systems. In short, a market would allow systems with undiversified, high cost supply to obtain additional sources of water at lower cost than is currently possible. A diverse range of water stakeholders in the county will need to coordinate to make this cost-equalizing opportunity possible, but such an effort is underway.

Finally, addressing system-level cost inequities will never entirely address the issue of household water affordability. If well designed and implemented, a household-level subsidy program could improve both the targeting and the level of water cost assistance to better address inequalities. As of October 2015, California authorized the design of a state-wide Low-Income Rate Assistance (LIRA) program via Assembly Bill 401. As part of the state-wide program, the county may be asked or obligated to take a more active role in subsidy implementation and financing, which would represent a marked improvement from its current allowance of individual systems to determine eligibility and assistance levels without respect to final household cost.

Full Report

Deshazo, J.R., Gregory Pierce and Henry McCann. 2015. “Los Angeles County Community Water Systems Atlas and Policy Guide: Supply Vulnerabilities, At-Risk Populations, Conservation Opportunities, Pricing Policies, and Customer Assistance Programs.” UCLA: Luskin Center for Innovation.

Full report and data available here: <http://bit.ly/1oy8T4W>

Contact information

Gregory Pierce, Senior Researcher
gpierce@luskin.ucla.edu

J.R. Deshazo, Director
deshazo@ucla.edu

UCLA Luskin School of Public Affairs

**Luskin
Center**
FOR INNOVATION

Luskin Center for Innovation
University of California, Los Angeles
3323 Public Affairs Building, Box 951656
Los Angeles, CA 90095-1656
Office: 310-267-5435
Fax: 310-267-5443