A Primer for California Water Policy Impacting Business

Lindsey Perry (M.Sc.'17) & Tiffany Wu (B.S.'17)

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Introduction

In 2015, Governor Jerry Brown executed historic emergency mandatory urban water conservation regulations for the first time in the state's history, turning California's drought into international news. The drought was no longer a problem for just farmers or the doomsday predictions of environmentalists. All Californians were called to the front lines of water conservation and it worked. As of April 2017, the emergency drought has been lifted as a result of a combination of increased rain and a 22% reduction of water usage in California communities over two years.[1] These reductions can be attributed to several calls to action from the Governor's Executive Orders that led to changes in water usage by the wide variety of water suppliers and users in California. Despite this short-term success, the uphill battle to improved water conservation is far from over, and permanent policy changes to water use will continue to affect businesses that operate in commercial spaces in Los Angeles (L.A.).

In trying to understand the politics of Los Angeles's water, one of the first questions that comes up is where does the water come from? With L.A. County's population rising above 10 million

in recent years and a booming economy, the Los Angeles River clearly isn't supplying the county's water.[2] There are a few primary sources of water for L.A. county, shown in Figure 1 below. First, since 1913, the City of L.A. used the Los Angeles Aqueduct to transport water from the Owens Valley. Second, since 1928, the Metropolitan Water District of Southern California (MWD) has delivered Colorado River water to L.A. agencies. Third, since its inception in 1959, the California Department of Water Resources (DWR) transports water from northern California snowpack and mountain runoff to southern California through the State Water Project, utilizing dams, rivers, aqueducts, and the San Francisco Bay Delta.[3,4] Lastly, while not a majority source, the City of L.A. also obtains about 11% of its water from local groundwater.[5] This is a much lower percentage compared to other southern California areas, such as the San Gabriel, Central and West Basins.

Figure 1. Imported water sources for Los Angeles County[6]

As previously mentioned, there are an innumerable number of agencies, organizations, and businesses involved with water and water policy, resulting in an equally large amount of acronyms. Some of the more commonly used acronyms and their descriptions are listed in Table 1 below.

Table 1. Glossary of commonly used acronyms relating to water policy and their accompanying descriptions

Term	Acronym	Description
California Energy Commission	CEC	California's energy policy and planning agency; responsibilities include achieving energy efficiency, advancing state energy policies, certifying thermal power plants, investing in energy innovation, developing renewable energy, transforming transportation, administering water appliance product standards for the State Water Board, and preparing for energy emeries
California Public Utilities Commission	CPUC	Oversees private electric and water utilities (such as investor-owned utilities), including rate increases, infrastructure investments, and safety requirements
Los Angeles Department of Water and Power	DWP	Municipal utility agency that provides water and power from MWD to residents in Los Angeles and surrounding communities[7]
California Department of Water Resources	DWR	Manages the state water project and collects Urban Water Management Plan (UWMP) data"[8]
Metropolitan Water District of Southern California	MWD	A water wholesaler that delivers water to 14 cities, 11 municipal water districts, and 1 county water authority (reaching approximately 19 million people)[9]
State Water Resources Control Board	SWRCB	Regulates water quality and discharges; oversees public drinking water systems; implements statewide water use restrictions[10]
Urban Water Management Plans	UWMPs	Required by DWR for "urban water agencies that supply over 3000 acre-feet a year or more than 3000 urban connections…" in order to "support their long-term resource planning and ensure that adequate water is available for current and future use"[11]

Navigating Water Policy in Southern California

The complicated web of water governance in L.A. County is a result of the unorganized bursts of infrastructure development in California dating back to the 1848 Gold Rush. As of today, there are nine major categories of types of water suppliers in L.A. County alone, serving areas ranging in size from 0.1 to 476 square miles. The California Center for Sustainable Communities (CCSC)

in the Institute of the Environment and Sustainability (IoES) at UCLA has done substantial research on the history and current state complex framework of water management in Southern California.[12] Through extensive data collecting and modeling, the CCSC has made a map of water suppliers available online.[13] Interestingly, because of the lack of centralized database of the jurisdictions of contractors, wholesalers, and water retailer boundaries, it is difficult, if not impossible, for the average citizen to create a clear map of their jurisdictions. In their research, there were some areas with overlap from multiple agencies as well as areas that seemingly no agency oversees over due to incomplete geospatial information provided by the retailers.[14]

Before water even reaches the consumers, there are several entities who dictate and manage how water arrives at its final destination. First, there are contractors, "which receive annual allocations of imported water from the State Water Project and Colorado River authorities" (like MWD listed in the table above).[15,16] Next, wholesalers, such as municipal water districts (like DWP listed in the table above), "purchase and resell water from the contractors or other wholesalers."[17] Finally, there are water retailers, the type of entity which most companies in L.A. will interact directly with for concerns about their water. Water retailers "sell water directly to residential, commercial, industrial, and agricultural customers."[18] While imported water in California is typically transferred from contractors to wholesalers to retailers, retailers purchase water directly from contractors in some areas, such as cities buying water directly from MWD. While this information may not be directly pertinent to most companies, it illustrates that there is no set route or protocol for water arriving at a business's building.

Another aspect of this complicated web is that in addition to a *variety* of water providers in L.A. County, there is also a huge *quantity* of providers. A building's water retailer is completely dependent upon the business location and cannot be changed. Unlike most goods that are purchased, businesses and citizens cannot shop around for the water retailer with the best rates. The CCSC found startling differences in water costs in different residential areas.[19] Assuming an average amount of use (20 centum cubic feet per month), families in L.A. County could pay as much as $131 a month or as low as $20 a month. In general, Los Angeles's water pricing is set very low, which makes it difficult to motivate people to conserve. This study, however, addressed specifically residential use; further research is required to see if there are similar disparities in rates for businesses.

There is an unfortunate dichotomy when it comes to water efficiency and pricing. As residents improve their water efficiency, they typically use less water volumetrically, which is how most retailers charge. As a result, retailers bring in less revenue, hurting their ability to make their own infrastructure repairs to improve water efficiency, such as repairing leaks and upgrading appliances. Proposition 218 restricts retailers from raising rates; there must be a direct nexus with the cost of service rising before fees can be raised. Elected officials are especially wary of rate increases, for fear of hurting their reelection chances.[20] As a result retailers are place in a vulnerable position sometimes—they want to encourage conservation but that also hurts their economic viability.

Businesses in California have little authority to improve the fragmented institutions of water management in the state. But by understanding these institutions, California business can more efficiently navigate within this complex framework to reap the most benefit from the statewide goals of increased water conservation. They will be informed about which agencies offer rebates in their area to help improve water efficiency. They can also more effectively advocate for policy change and lead technical improvements in water usage efficiency.

Current Laws and Regulations

Historically, water conservation has been a choice by businesses—some have a low footprint while others do not. Organizations such as the L.A. Better Buildings Challenge (LABBC) emerged to praise the sustainable corporations and other institutions in Los Angeles who have demonstrated significant reductions in water and energy usage. In doing so, they hope to increase their numbers and give positive publicity to these entities. LABBC has recognized and rewarded companies and organizations who have reduced their commercial water use, with most winners achieving about 15% in reductions.[21,22] However, what was previously celebrated as going above and beyond the call of duty to conserve resources, will become the norm in L.A. in the near future. Measures, such as the City of Los Angeles Ordinance 184674 and Governor Brown's Proclamations and Executive Orders (EOs), have declared water conservation as a way of life in California, proving that this lifestyle change is eminently permanent.

California Legislation

On January 17, 2014, California Governor Jerry Brown declared a State of Emergency[23]

throughout California due to severe drought conditions.[24] He later proclaimed[25] on April 25, 2014 a Continued State of Emergency due to ongoing drought.[26] These declarations served as the catalysts for several EOs that followed, becoming the beginnings of statewide legislation governing modern water use. While some of these EOs will no longer be in effect by the end of 2017, they have set the landscape for future water policy in California and indicate what businesses may be required to do permanently in the near future. A list of relevant EOs is provided in Table 2, along with a brief description.

Table 2. A list of California Executive Orders that have regulated urban water use

Executive Order #	Date Issued	Still in Effect?*	Description
B-40-17[27]	April 7, 2017	Yes	Ended the drought emergency in most CA counties; emphasizes need for permanent change in water usage due to continued scarcity caused by climate change.
B-37-16[28]	May 18, 2016	Yes	Also called "Making Water Conservation a California Way of Life;" while the SWRCB emergency conservation regulations will expire on November 25, 2017, this EO prioritizes making water conservation a way of life through: setting new urban water use targets; requiring permanent monthly urban water reporting on water usage, amount of conservation achieved, and any enforcement efforts; establishing permanent prohibitions on wasteful water practices; and minimizing water losses, among other implementation strategies.[29]
B-36-15[30]	Nov. 13, 2015	No	SWRCB and California Public Utilities Commission continue restrictions to achieve a statewide reduction in urban potable water usage, and potentially non-potable water.
B-29-15[31]	April 1, 2015	No	By far the most extensive and specific about how to achieve water use reductions. It declares that the SWRCB shall impose restrictions to achieve a statewide 25% reduction in potable urban water through programs such as turf and appliance replacement and by managing landscape irrigation. Also, better collection of water usage data and more efficient irrigation systems, greywater usage, onsite stormwater capture will be pursued. CEC with DWR and SWRCB shall implement a Water Energy Technology program to deploy innovative water management technologies for businesses, such as integrated onsite reuse systems and water-use monitoring software.
B-28-14[32]	Dec. 22, 2014	No	Extended previous Proclamations of Drought to May 31, 2016.

*As of June 2017

Los Angeles Legislation

In addition to statewide legislation, there are policies specific to the L.A. area. Los Angeles has the reputation as a city with progressive policy and many water-related regulations will go into effect in the upcoming years. Passed on December 13, 2016, City of Los Angeles Ordinance 184674[33] will require existing buildings greater than 20,000 sq. ft. to undergo annual energy and water benchmarking utilizing ENERGY STAR Portfolio Manager®, starting in 2017 with results being made public sometime in 2019. Once a benchmark is established, these buildings must achieve 15% energy savings and 20% water savings over a five-year period or complete a comprehensive energy and water audit (and retrocommissioning) every five years, starting in 2019. A task force comprised of various stakeholders and water industry experts will begin meeting in June 2017 to discuss how to implement this Ordinance. Bill McDonnell, a MWD Water Efficiency Manager and member of the task force, emphasizes that many water retailers in L.A., especially the small ones, do not currently have the infrastructure or software in place to facilitate the data collection that this Ordinance requires, which will be one of the first problems that must be tackled. This Ordinance is also aimed at existing buildings, which will likely require some retrofitting; new buildings are now built with sustainable water use in mind.

L.A. has certain standards and regulations when dealing with stormwater. The city recently adopted low impact development (LID) standards and practices for future developments and any redevelopments. Low impact development is a stormwater management strategy to reduce the impacts of stormwater pollution.[34] Any development that requires building permits within the City of Los Angeles is required to follow the LID ordinance.[35] All information on the LID ordinance from rain tanks to permeable paving to stormwater infiltration guidelines can be found here[36]. A more in-depth description of technologies available to help a business meet these LID standards can be found in the 2017 Corporate Partner Program Green Paper, "Technologies for Improving Water Resilience in Office Buildings."

Permits are also required for graywater systems and are issued by the City of Los Angeles Department of Building Safety with possible approval from the Los Angeles County Department of Public Health.[37] There are several types of permits needed prior to constructing a graywater system, but businesses will primarily be looking at "Simple and Complex Graywater Systems" (a name designated by LADWP).[38] All steps and regulations can be found on the LADWP

website[39].

Opportunities for Rebates and Incentives

In most cases, having so many entities governing water in Los Angeles County is a negative, confusing situation due to the resulting complex "architecture of water management."[40] However, there is one tangible benefit: there are more organizations offering rebates and incentive programs to ease the financial burden of improving water efficiency.[41] For companies with offices in particularly progressive cities in the county, the city government may offer rebates. For example, Santa Monica has a comprehensive Sustainable City Plan[42] that includes achieving high reductions in water usage by 2020. Their website[43] includes a page with rebates for many water saving measures, such as changes to landscaping and buying high-efficiency clothes washers and toilets. There are also regional and statewide organizations offering rebates, such as MWD[44] and DWR[45]. MWD offers a wide variety of rebates, including high-efficiency toilets, irrigation, and food equipment, as well as turf replacements for commercial and industrial buildings with landscaping. DWR's rebates are more limited, focused only on turf removal and toilet replacement. LADWP[46] also offers rebates to increase water use efficiency; however, these are only for residential customers.[47]

The 2017 Corporate Partners Program Green Paper, "The Economics of Water: Financing Strategies for Greater Water Resiliency" provides additional resources that are accessible to business to help reduce the cost of water technology installation.

Future Laws and Regulations

There is a large paradigm shift occurring with water policy and water conservation. What was previously considered going above and beyond is now expected of all businesses with commercial space in L.A. Anticipating these changes will allow businesses to make investments in sustainable water use now, to begin conserving resources and avoid rushing to meet changes in the future to avoid potential fines.

Permanent Statewide Conservation Strategies

Despite the increased precipitation in the winter of 2017, there is still a strong emphasis from

Governor Jerry Brown and various state agencies on continuing to develop sustainable strategies for urban water use as water scarcity becomes the norm due to climate change.

A 2010 Pacific Institute publication, as part of its CEO Water Mandate[48] program, predicted this change in policy landscape:

> "Even companies that do not foresee water challenges may be at risk because of stricter regulations or through new challenges imposed by climate change. As these challenges and demands escalate, governments will be forced to tighten controls on water use and wastewater discharge to prevent depletion and degradation of resources."[49]

It is therefore in business's best interests to "foresee" these challenges and begin implementing water conservation measures today.

A business's facility agreement may affect the difficulty of certain conservation efforts. Some business own or rent commercial office space in larger complexes, which may pose some limitations on changing water use. In this case, some office-level improvements can include installing higher water efficiency appliances and faucets. Businesses in corporate parks may leverage their status as a stakeholder of the property and campaign for larger-scale projects to improve water efficiency, such as changes to parking lots. If a majority of stakeholders voice support for or are willing to contribute financially to these projects, it is more likely that the building association would implement these changes. Tenants can include these types of improvements in their new leases or renewals in commercial spaces. Companies can also partner with sustainability focused organizations, such as Ceres[50] or the Pacific Institute[51]. These organizations have the background and resources to research and recommend the best courses of action to begin improving a company's water use efficiency. In addition, their programs offer the opportunity to collaborate and form coalitions with like-minded businesses, such as Ceres' Connect the Drops[52] campaign and Pacific Institute's CEO Water Mandate[53].

Many agencies are emphasizing that "big data" is necessary to overhaul and improve water use in L.A., as evidence by the recent passing of Ordinance 184674. Bill McDonnell, MWD's Water Use Efficiency Manager, predicts that submetering will need to be prioritized before large amounts of data about water use can be efficiently collected and effectively used. Currently, large office buildings do not have individual meters for every room or office. Instead, there is

one meter for the entire building, which does not provide details of water use by the individual building's tenants. It is therefore impossible to determine what a business's exact water use is. Smart metering will allow real time information about water usage so leaks are detected earlier and less water is lost. A more detailed description of metering is found in the 2017 Corporate Partner Program Green Paper, "Technologies for Improving Water Resilience in Office Buildings."

Pending California Legislation

Despite being a leader in confronting the reality of climate change and its effects on water scarcity, California still has a lot of opportunity to adjust its water policies. Table 3 contains some of the pending 2017 assembly and senate bills in the state legislature that could change the governance of water use.

Table 3. Pending California bills that affect water policy and water use, along with descriptions
Full text of pending bills can be found at: https://leginfo.legislature.ca.gov/faces/billSearchClient.xhtml

Legislation*	Description
AB 968	AB 968 would require the DWR's Urban Stakeholder Committee, by January 1, 2020, and every 5 years thereafter, to develop a report to provide information and recommendations to the DWR and the Legislature about new water demand management measures, technologies, and approaches. By 2025, the Committee would need to recommend potential adjustments to water efficiency targets and commercial, industrial, and institutional performance measures. DWR and SWRCB would need to assemble a task force by July 1, 2018, to recommend appropriate water efficiency measures for various segments of the commercial, industrial, and institutional water use sector to the Legislature by December 31, 2019. Also, the bill would authorize urban retail water suppliers to adjust and update their water efficiency targets, as appropriate, when the supplier reports its compliance in achieving the water efficiency targets and its implementation of the identified performance measures in its 2025 UWMP required to be submitted by July 1, 2026.
AB 1000	AB 1000 will require the State Energy Resources Conservation and Development Commission to create energy and water conservation standards to increase efficiency in energy and water for both new residential and nonresidential buildings
AB 1667	AB 1667 "would require the installation of dedicated landscape meters on existing commercial, industrial, and institutional properties over a specified threshold by January 1, 2020" in order to ensure that Californians have secure and sustainable water supplies now and in the future.[54]

AB 1668	AB 1668 will strengthen local efforts to combat periods of drought by improving how we manage our water resources and plan for periods of water shortage. This bill will direct the DWR, in consultation with the SWRCB, to update and set standardized requirements for urban water management plans (UWMPs).
AB 1669	Keeping in line with California's aggressive water conservation goals, AB 1669 requires the SWRCB, in consultation with the DWR and other state agencies, to adopt a process to increase urban water use efficiency through incremental urban water use efficiency standards to be achieved by the state by January 1, 2025, and update the standards every five years.
SB 252	SB 252 deals with groundwater and states that reducing unreasonable waste is of highest priority. SWRCB is also in charge of adopting a model water well and maintaining well drilling and construction. Any applicants for a new well permit in an area with a critically overdrafted basin must adhere to certain requirements as outlined further in the bill and make certain information publically available. In addition, under the Sustainable Groundwater Management Act, any groundwater basin that is designated as high- or medium-priority basins and critical conditions of overdraft must be managed by a groundwater sustainability plan by January 31, 2020. All other high- or medium-priority basins must be managed under groundwater sustainability plans by January 31, 2022.
SB 231	SB 231 deals with stormwater and funding. It states that local governments are in charge of managing stormwater and drainage runoff. Management is essential, especially during times of drought, to reduce pollution and to ensure adequate water supplies.
SB 740	SB 740 "directs the SWRCB to offer local governments a framework for regulating the treatment of alternate water sources, such as greywater and stormwater, to be consistent with public health standards."[55]

*AB=Assembly Bill, SB=Senate Bill

Conclusion

Water policy is a difficult topic to understand, and Los Angeles has an antiquated way of regulating and distributing water. From understanding where the water comes from to which agencies provide water to what areas, there is a long way to go before L.A.'s water agencies create a uniform system. However, one thing is certain: water conservation is an integral component of L.A.'s water policy scene. While water restrictions have been lifted, this does not mean that water conservation is no longer important. Adopting water efficiency is essential for a healthier Los Angeles in the face of climate change. Conservation will become part of Los Angeles's lifestyle, and as businesses in this region, it is important to understand these potential changes and to implement them early to be innovative in this competitive market.

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