
State Water Resources Control Board

NOTICE OF PROPOSED REGULATORY ACTION

TITLE 23. WATERS DIVISION 3. STATE WATER RESOURCES CONTROL BOARD AND REGIONAL WATER QUALITY CONTROL BOARDS CHAPTER 3.5 Conservation and the Prevention of Waste and Unreasonable Use

NOTICE OF PROPOSED RULEMAKING

The State Water Resources Control Board (State Water Board or Board) proposes to adopt the proposed regulation described below after considering all comments, objections, and recommendations regarding the proposed action.

PROPOSED REGULATORY ACTION

The State Water Board proposes to establish California Code of Regulations, title 23, division 3, chapter 3.5 on Conservation and the Prevention of Waste and Unreasonable Use and within this chapter will be a new article, article 2, on Water Conservation. This article is proposed to provide for permanent prohibitions against wasteful water uses. Currently certain water uses are prohibited under an emergency regulation that is set to expire November 25, 2017. The prohibitions that are proposed would be consistent with existing requirements in California Code of Regulations, title 23, division 3, chapter 2, article 22.5, specifically sections 865 and 866 that are expiring November 25, 2017 by operation of law.

AUTHORITY AND REFERENCE

The State Water Board is implementing, interpreting and making specific:

Authority: Section 1058, Water Code.

References: Article X, Section 2, California Constitution; Sections 4080, 4100, 4110, 4150, 4185, and 4735, Civil Code; Sections 102, 104, 105, 275, 350, and 10617, Water Code; Light v. State Water Resources Control Board (2014) 226 Cal.App.4th 1463.

PUBLIC WORKSHOP

A public workshop has been scheduled for this proposed action. State Water Board staff will hold a public workshop to provide the public an opportunity to discuss the permanent prohibition of certain wasteful water use practices. Any written or oral comments will be received, added to the record, and considered by the Board. A quorum of Board members may be present; however, no Board action will be taken. The public workshop will follow the Board meeting on:

Tuesday, November 21, 2017
Joe Serna Jr. – CalEPA Headquarters Bldg.
Coastal Hearing Room
1001 I Street, Second Floor
Sacramento, CA 95814

FELICIA MARCUS, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

Please consult the agenda for the meeting, which will be available at least 10 days before **November 21, 2017**, to determine the exact day and time this item will be considered. A public hearing has not been scheduled. Any interested person can submit a written request for a hearing to be held. The written request for a hearing must be submitted at least 15 days prior to the close of the written public comment period.

WRITTEN COMMENT PERIOD

Any interested person, or his or her authorized representative, may submit written comments relevant to the proposed regulatory action to the State Water Board. Written comments must be received no later than **12:00 noon on Tuesday, December 26, 2017**. The State Water Board will only consider comments received by that time.

Please send comment letters to Ms. Jeanine Townsend, Clerk to the Board, by email at commentletters@waterboards.ca.gov, (916) 341-5620 (fax), or by mail or hand delivery addressed to:

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
P.O. Box 100, Sacramento, CA 95812-2000 (by mail)
1001 I Street, 24th Floor, Sacramento, CA 95814 (by hand delivery)

Please also indicate in the subject line, “**Comment Letter – Prohibiting Wasteful Water Use Practices.**” Hand and special deliveries should also be addressed to Ms. Townsend at the address above. Couriers delivering comments must check in with lobby security and have them contact Ms. Townsend. Due to the limitations of the email system, emails larger than 15 megabytes are rejected and cannot be delivered or received by the State Water Board. We request that comments larger than 15 megabytes be submitted under separate emails.

To be added to the mailing list for this rulemaking and to receive notification of updates of this rulemaking, you may subscribe to the listserv for “**Water Conservation Regulations**” by going to http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml (look under “General Interests”, select “Water Conservation Regulations”).

WEBCAST INFORMATION

Video and audio broadcasts of the public workshop will be available via the internet and can be accessed at: <https://video.calepa.ca.gov/>.

PARKING AND ACCESSIBILITY

For directions to the Joe Serna, Jr. (CalEPA) Building and public parking information, please refer to the map on the State Water Board website: <http://www.calepa.ca.gov/headquarters-sacramento/location/>.

SPECIAL ACCOMMODATION REQUEST

Consistent with California Government Code section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

The CalEPA Building is accessible to persons with disabilities. To request these special accommodations or language needs, please contact 916 341-5254 as soon as possible, but no later than 10 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia
- Documentos disponibles en un formato alterno u otro idioma
- Una acomodación razonable relacionados con una incapacidad

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a 916 341-5254 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

FUTURE NOTICE

The State Water Board public workshop will be at the times and places noted above. Any change in the date, time, and place of the public workshop will be noticed on the webpage: http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/index.shtml

CALIFORNIA ENVIRONMENTAL QUALITY ACT

This is to advise that the State Water Board is proposing to adopt the **Wasteful Water Use Regulation**. Pursuant to CEQA Guidelines section 15063, the State Water Board prepared an Initial Study to provide a preliminary analysis of the proposed action to determine whether a Negative Declaration or Environmental Impact Report should be prepared. The proposed regulation will have a less than significant impact on the environment. Because there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, the Board prepared a Negative Declaration. The draft Initial Study/Negative Declaration is available for review at the CalEPA library, located at 1001 I Street, Sacramento, CA 95814, and on the Water Board's website (www.waterboards.ca.gov/water_issues/programs/conservation_portal/regulation.shtml).

INFORMATIVE DIGEST/ POLICY STATEMENT OVERVIEW

a) Summary of existing laws and regulations

The proposed regulation would establish in California Code of Regulations, title 23, division 3, a new chapter, chapter 3.5, on Conservation and the Prevention of Waste and Unreasonable Use, and within this chapter a new article, article 2, on Water Conservation. This article is proposed to permanently prohibit certain wasteful water uses. Currently, those wasteful water uses are prohibited under an emergency regulation that is set to expire November 25, 2017.

References: Article X, Section 2, California Constitution; Sections 4080, 4100, 4110, 4150, 4185, and 4735, Civil Code; Section 8627.7, Government Code; Sections 102, 104, 105, 275, 350, and 10617, Water Code; *Light v. State Water Resources Control Board* (2014) 226 Cal.App.4th 1463.

Specifically, the proposed regulation would prohibit all Californians from engaging in certain wasteful water use practices, would penalize particular entities that violate existing laws, and would require specific actions of hotels and motels.

The Prohibitions (i.e., Californians shall not...)

- Apply water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.
- Use a hose that dispenses water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.
- Apply potable water directly to driveways and sidewalks.
- Use potable water in an ornamental fountain or other decorative water feature, except where the water is part of a recirculating system.
- Apply water to irrigate turf and ornamental landscapes during and within 48 hours after measurable rainfall of at least one-tenth of one inch of rain.
- Serve drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased.
- Irrigate turf on public street medians or publicly owned or maintained landscaped areas between the street and sidewalk, except where the turf serves a community or neighborhood function.

Penalties for Particular Entities:

- Any homeowners' association, community service organization, or any similar entity violating section 4735 of the Civil Code is an infraction punishable by a fine up to \$500/day for each day the violation occurs.
- Any city, county, or city and county violating section 8627.7 of the Government Code is an infraction punishable by a fine up to \$500/day for each day the violation occurs.

The Requirement for Hotels and Motels:

- Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guestroom using clear and easily understood language.

b) Comparable Federal Laws and Regulation

The State Water Board has determined that there are no comparable federal laws or regulations related to the proposed regulation on prohibiting certain wasteful water use practices.

c) Policy Overview, Objectives and Benefits of the Proposed Regulatory Action

Article 10 of the California Constitution, section 2, states:

that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

The State Water Board has determined that the proposed regulation will safeguard urban water supplies, minimize the potential for waste and unreasonable use of water, and realize the directives of Executive Orders B-37-16 and B-40-17. Each of the specific prohibitions on water uses and other end user requirements are necessary to promote water conservation to maintain adequate supplies, which cannot be done if water is being used in a wasteful or unreasonable manner. Between June 2014 and April 2017, the emergency regulations catalyzed water use reductions conserving over 3.5 million acre-feet. Should the proposed regulation be adopted, continued water savings would be achieved.

In general, water conservation has many benefits, including conserving water for source-watershed stream flows; conserving energy, as nearly 20 percent of California's electricity use is embedded in moving and consuming water; generating additional economic activity, such as investments in drought-tolerant landscaping; increased water quality in receiving waters due to lower runoff volume; increased awareness and a shared sense of responsibility among urban water users; reduced potential for severe economic disruption due to future water shortages; and more equitable management of water supplies.

Though the potential overall water saving from the proposed regulation are likely to be relatively minor, the water savings associated with the proposed regulation would nonetheless realize or promote a number of the aforementioned benefits. Each of these benefits is discussed below. The proposed regulation would not by itself necessarily achieve a significant level or amount of these benefits, relative to a comprehensive suite of conservation actions like water pricing changes or mandatory supply reductions; but, by prohibiting some of the more wasteful and discretionary water use practices, it can reasonably be expected to have a positive impact on each of the areas described below.

Protecting watersheds

Water efficiency can help stretch water supplies and contribute to the protection of aquatic environments. Water efficiency can preserve stream flows by preventing or delaying the need to build additional infrastructure and conserve (and even restore) flows in already-exploited watersheds. In *Water Efficiency for In-stream Flow: Making the Link in Practice*, the Alliance for Water Efficiency (AWE) describes how municipal water efficiency programs contribute to a more natural flow regime in California's Russian River. To create better habitat conditions for Coho salmon and steelhead in the summer and Chinook salmon in the fall, local water agencies invested in a number of water conservation strategies, including public education campaigns, cash-for-grass incentives, and rainwater catchment and greywater system rebates (AWE 2011).

Other documented examples of how urban water conservation has helped protect in-stream flows include, in California, the work of the Sacramento Water Forum to conserve American River flows (SWF 2017), and, outside of CA, the work of metropolitan Seattle agencies to conserve Cedar and Deschutes River flows (AWE 2011). These examples demonstrate that water conservation can directly protect watersheds by reducing consumption and dedicating those savings to in-streams flows.

Conserving energy

The proposed regulation would reduce GHG emissions by reducing the amount of energy needed to make water available for urban uses. A considerable amount of energy is embedded in California's water infrastructure. Over 19% of California's energy is used to supply, treat, and consume water and then to collect and treat wastewater (CEC 2006). Of that, about 40% is consumed by the water sector itself—primarily for supply and conveyance but also for water distribution, water treatment, and wastewater collection and treatment; the remaining 60 percent is attributable to the electricity used by customers as water is consumed—primarily for heating and pumping (Park and Croyle 2012). The energy intensity of a particular quantity of water depends on a number of factors, most importantly how (e.g., indoors or outdoors) and where (e.g., San Francisco or Los Angeles) it's consumed.

The corollary is that the energy savings associated with conserving any given quantity of water will similarly depend on where and how it's used. Water conservation in Southern California will generally yield more energy savings from pumping and treating water than conservation efforts in Northern California, where water requires less energy to travel. It is also true that indoor water use generally offers the greatest energy savings because indoor uses require wastewater collection, treatment, and discharge. Furthermore, indoor use of hot water is particularly energy intensive due to the energy required for hot water heaters. Energy savings associated with conserving water outdoors would only be associated with reduced supply, conveyance, treatment and distribution (Elkind 2011). The proposed regulation would primarily result in reduced outdoor use, and any related energy savings and reductions in GHG emissions would come from the prohibition of some of the more wasteful outdoor water use practices.

Approximately 7.2% of the state's overall electricity use is embedded in the supply, conveyance, treatment and distribution of water (Park and Croyle 2012). When water is conserved outdoors, the energy inputs embedded in those processes are avoided — and those avoided energy inputs vary considerably depending on where the water comes from and where it goes.

To better understand the geographically variable energy intensities of water in California, the California Public Utilities Commission (CPUC) developed the Water-Energy calculator; it computes average outdoor energy intensities for each of California's hydrologic regions (CPUC 2017). Using those outdoor water use intensity values, the UC Davis Center for Water-Energy efficiency calculated the energy savings associated with the volume of water conserved during a few months of the declared drought emergency. The electricity savings from statewide water conservation totaled 460 GWh, the equivalent of taking about 50,000 cars off the road for a year (UC Davis 2017).

Generating additional economic activity

Several of the wasteful water uses prohibited by the proposed regulation (e.g., the prohibitions affecting runoff) may result in the more efficient irrigation of urban landscapes. Reducing outdoor water waste could generate additional economic activity, such as investments in water efficient landscaping. Substantial expenditures to use water more efficiently outdoors may benefit the landscaping sector, perhaps by helping to catalyze a new, drought oriented sub-sector of the landscaping services sector, as well as, over time, likely reducing prices for this type of amenity. Furthermore, reducing the amount of water used for landscaping may direct those savings to other economically beneficial uses (Moss et al. 2015). It is not expected that the proposed regulation will have a significant impact on shifting landscapes to more drought tolerant plantings, but landscape companies may see increased calls for irrigation system upgrades, or changed landscape topographies, to avoid runoff as prohibited by the proposed regulation.

Improved water quality

Dry-weather discharges contain pollutants that compromise aquatic ecosystems. Dry-weather urban runoff can be a source of pesticides, nutrients, bacteria and metals. For arid and semi-arid streams dominated by urban runoff and effluent, pollutants conveyed during the dry-season can represent a substantial portion of total annual loading. Recent studies have shown that dry-weather loading of nutrients, pesticides, and other constituents can be a significant contributor of pollutants to receiving waters (Pitton et al. 2016, Stein and Ackerman 2007, Stein and Tiefenthaler 2005, McPherson et al. 2002, 2005). For example, dry-weather flows contribute more than 50 percent of the annual pollutant loads of some metals in Los Angeles basin watersheds (Stein and Ackerman 2007). A five-year study of eight California sites found that the majority (76 percent) of annual microbial loading occurred during the dry season (Reano et al. 2015).

Few studies have examined how reduced outdoor water use affects the water quality of runoff. However, an Orange County residential runoff reduction study found that increased outdoor water efficiency reduced the amount of runoff (by 50 percent at one site) while the concentration of pollutants such as nutrients, organophosphate pesticides, trace elements and bacteria remained the same (IRWD 2004). In essence, the IRWD study suggests that, with the reduction of dry weather runoff, pollutant loading may decrease. The proposed regulation may benefit water quality by reducing the amount of runoff and, by extension, total pollutant loading in the dry-season.

Increased conservation awareness

The proposed regulation would define ten water use practices as wasteful and unreasonable per Article X, section 2 of the California constitution, potentially compelling those urban water agencies that have not already prohibited the aforementioned practices to now do so. Depending on the degree of local education and enforcement, urban water users may place an even greater value on this vital resource and adjust their behavior accordingly. Numerous studies have shown that defining injunctive norms (i.e., norms that govern how a person should behave) can catalyze even greater conservation rates (Steg et al. 2014). By defining the addressed water use practices as wasteful and unreasonable, the proposed regulation assigns judgment. Coupled with the descriptive normative messaging typically employed in water conservation campaigns (e.g., notices comparing one household's use to other homes in the neighborhood), a strong injunctive message (e.g., watering driveways is wasteful) may instill an even greater conservation ethic.

Reduced potential for severe economic disruption

Wasteful and unreasonable uses of water threaten the California economy, now more than ever. Looking ahead, the co-occurring warm and dry conditions that gave rise to the recent drought are not “exceptional” but rather very probable (Diffenbaugh et al. 2015). Eliminating waste and unreasonable use of water safeguards California’s economy, ensuring our most vulnerable sectors are more resilient to projected climate change impacts. Permanently prohibiting some of the most wasteful and discretionary water use practices, and increasing the visibility of water conservation and efficiency can reduce the potential for economic disruption in multiple sectors, particularly the agricultural and electricity sectors.

Agriculture: The 2012-2016 drought reduced the amount of surface water available to farmers, like all other sectors. Despite offsetting much of the surface water reductions with increased groundwater pumping, the drought impacted California’s agricultural sector. Table 1 summarizes the results of the 2014-2016 economic impact reports the UC Davis Center for Watershed Sciences generated for the California Department of Food and Agriculture.

As shown in Table 1, groundwater pumping largely offset the impacts to California’s agricultural sector. However, the shortages nonetheless resulted in substantial costs (due to idled land, lost revenue, increased pumping, etc.), peaking in 2015 with an estimated loss of \$2.7 billion and 21,000 jobs (Howitt et al., 2015). Unaccounted for in the UC Davis assessment is the cost of massive and unsustainable groundwater pumping.

	2014	2015	2016
Surface water reduction	6.6 MAF*	8.7 MAF	2.6 MAF
Groundwater pumping	5.1 MAF	6.0 MAF	1.9 MAF
Net shortage	1.5 MAF	2.7 MAF	0.7 MAF
Total economic cost	\$2.2 billion	\$2.7 billion	\$603 million
Total job losses	17,000	21,000	4,700

Table 1: Summary of agricultural impacts of the California drought (2014-2016)

While continued groundwater overdraft temporarily benefits farmers, in the long run it too is costly, requiring farmers and surrounding communities to dig deeper wells, find alternative sources of water and repair infrastructure damaged by subsidence (Cooley et al. 2015).

Electricity: The Pacific Institute examined the effects of drought on California’s hydroelectricity generation. In an average year, hydropower provides 18 percent of the state’s electricity needs; during the drought, it averaged 10.5 percent. Through September 2016, hydroelectricity production dropped by 66,000 GWh. The replacement sources of energy were both more expensive and more polluting, costing ratepayers \$2.45 billion and increasing power plant emissions by 10 percent (Gleick 2017).

Economic disruption summary: Using water reasonably and efficiently safeguards California’s economy by protecting our most vulnerable sectors, particularly the agricultural and electricity sectors. Impacts to these sectors could ripple throughout the economy, as was the case in Australia during the millennium drought. At its peak, the “Big Dry” was estimated to have reduced Australia’s GDP by 1.6 percent. A 1.6 percent hit to California GDP would reduce state output by more than \$30 billion (Moss et al. 2015). Making conservation a California way of life reduces the potential for such severe economic disruption.

More Equitable Management of Water Supplies

A 2017 Pacific Institute report analyzed the impact of the 2012-2016 on California's most vulnerable communities. The report found that disadvantaged communities were gravely affected. Supply shortages and rising costs affected people's access to safe, affordable water in their homes. Additionally, declines in salmon populations, exacerbated by the drought, prevented some California Native American tribes from obtaining fish that are an essential part of their diet and an integral part of their spiritual and cultural traditions. Inequitable access to water in California existed before the drought began in 2012, but lack of water made the outcome of these inequities more severe (Feinstein et al., 2017). Making conservation a California way of life reduces the potential that future droughts will as severely impact disadvantaged communities.

d) An Evaluation of Inconsistency or Incompatibility with Existing State Regulations

The State Water Board evaluated whether the proposed regulation is inconsistent or incompatible with existing regulations. The proposed regulation is not inconsistent or incompatible with existing state regulations.

Absent the proposed regulation, there is no permanent statewide prohibition on specific water uses to promote conservation and no general regulatory identification of urban water uses that are considered a waste or unreasonable use. (Compare Cal. Code Regs., tit. 23, § 862.) The State Water Board's May 2015 emergency regulation constituted the first statewide directive to urban water users to undertake specific actions to respond to the drought emergency. The State Water Board extended and amended the regulation since May 2015 to respond to updated conditions as appropriate. Consequently, the proposed regulation is consistent and compatible with existing emergency regulations on this subject.

The 2014-2015 drought related actions and response activities culminated in Executive Orders (EO) B-37-16 in May 2016 and B-40-17 in April 2017. The EOs built on the temporary emergency conservation regulations and tasked State agencies with establishing a long-term framework for water conservation and drought planning. The actions directed in the EOs are organized around four primary objectives: (1) using water more wisely, (2) eliminating water waste, (3) strengthening local drought resilience, and (4) improving agricultural water use efficiency and drought planning.

To eliminate water waste, the State Water Board has been tasked with permanently prohibiting practices that waste water, such as: Hosing off sidewalks, driveways and other hardscapes; Washing automobiles with hoses not equipped with a shut-off nozzle; Using non-recirculated water in a fountain or other decorative water feature; Watering lawns in a manner that causes runoff, or within 48 hours after measureable precipitation; and Irrigating ornamental turf on public street medians.

While the severity of the drought has lessened in California after winter rains and snow, significant impacts remain. For the fifth consecutive year, dry conditions persist in areas of the state, with limited drinking water supplies in some communities, diminished water for agricultural production and environmental habitat, and severely depleted groundwater basins. Furthermore, California droughts will be more frequent and persistent, as warmer winter temperatures driven by climate change reduce water held in the Sierra Nevada snowpack and result in drier soil conditions.

Recognizing these new conditions, permanent regulations are needed to use water more wisely and efficiently, and prepare for more frequent, persistent periods of limited supply in all communities and for all water uses, including fish, wildlife, and their habitat needs. The proposed regulation is consistent and compatible with Executive Orders B-37-16 in May 2016 and B-40-17 in April 2017.

Additionally, homeowners' associations for common interest developments currently are statutorily barred from prohibiting low-water use landscaping or artificial turf and from fining residents who reduce their outdoor irrigation during drought emergencies, as are cities, counties, or cities and counties. (Civ. Code, § 4735; see also *id.*, §§ 4080, 4100, 4110, 4150, and 4185; Gov. Code, § 8627.7.) The Governor's April 25, 2014 Executive Order similarly declared "any provision of the governing document, architectural or landscaping guidelines, or policies of a common interest development ... void and unenforceable to the extent it has the effect of prohibiting compliance with the water-saving measures contained in this directive, or any conservation measure adopted by a public agency or private water company...." (Proclamation of a Continued State of Emergency, April 25, 2014, Ordering ¶ 4.) The proposed regulation neither differs from nor conflicts with an existing comparable federal statute or regulation.

MANDATED BY FEDERAL LAW OR REGULATIONS (Gov. Code, §§ 11346.2, subd.

(c)) The proposed regulatory action is not identical to previously adopted or amended federal regulations.

LOCAL MANDATE

This proposal does not impose a mandate on local agencies or school districts, or a mandate which requires reimbursement pursuant to part 7 (commencing with section 17500) of division 4 of the Government Code.

NON-MAJOR REGULATION: RESULTS OF THE ECONOMIC IMPACT ANALYSIS

The Impacts

By prohibiting wasteful water use practices, the proposed regulation will conserve water. Water conservation has many benefits (see, Benefits section *I.c. supra*), but it also has consequences. Declining water sales translate to declining utility revenues, complicating efforts to continue conservation programs while covering the costs of water treatment and delivery as well as infrastructure repair and replacement (AWE 2014). To recuperate the revenue lost as customers conserve, utilities must adjust rates. The State Water Board estimates that the proposed regulation would result in annual statewide savings of 12,489 AF. Assuming these savings would be distributed in proportion to the population served by urban water suppliers, individual urban water suppliers would incur minor utility net revenue losses.

There are two primary reasons why the proposed regulation is unlikely to lead to major statewide costs. First, through existing permits and policies, many of the state's urban areas already address the most wasteful of the to-be-prohibited practices (*i.e.*, those practices pertaining to outdoor use). Secondly, the proposed regulation is unlikely to catalyze substantial water savings, as only prohibiting wasteful uses has been shown to conserve relatively little compared to other conservation strategies.

Type-of-use-restrictions (*i.e.*, prohibitions), without accompanying changes in pricing, achieve modest reductions (Dixon and Moore 1996, Olmstead and Stavins 2009, Mini 2015, Manago and Hogue 2017). For example, when the Los Angeles Department of Water and Power (LADWP) instituted mandatory outdoor water restrictions in 2008, the rate of outdoor water use

declined 6 percent compared to an averaged 2001-2007 baseline; when LADWP additionally raised rates, the rate of outdoor use declined by an average of 35 percent between 2009 and 2014 (Manago and Hogue 2017).

Water demand tends to decrease as prices increase. Rates can be strategically used to influence demand, particularly outdoor residential demand, which is more elastic (i.e., more responsive to changes in price) than residential indoor demand (Epsey and Shaw 1997, Dalhusien 2003, Olmstead 2007, Baerenklau et al 2013). The proposed regulation would only prohibit certain wasteful water use practices. Because it would not also require water agencies to change rates in a manner to incentivize the mandated conservation practices, the analysis assumes the prohibitions themselves will not lead to significant savings.

The State Water Board assumes that the proposed regulation would result in savings commensurate with the savings attributable to the prohibitions under the emergency conservation regulations. We estimate that 1 percent of the June 2014 to April 2017 savings (12,498 acre-feet per year (AF/yr) are due to the prohibitions. See Table 2.

<i>Hydrologic Region</i>	<i>AF Saved from June 2014 to April 2017</i>	<i>AF Saved due to prohibitions</i>	<i>Annual AF Savings due to prohibitions</i>
	A	B	C
Central Coast	131,150	1,312	463
Colorado River	115,850	1,158	409
North Coast	27,905	279	98
North Lahontan	8,504	85	30
Sacramento River	509,086	5,091	1,795
San Francisco Bay	582,310	5,823	2,054
San Joaquin River	238,309	2,383	840
South Coast	1,538,675	15,387	5,426
South Lahontan	84,976	850	300
Tulare Lake	304,592	3,046	1,074
Total	3,541,357	35,414	12,489

Table 2: Statewide Water Conservation by hydrologic region (June 2014-April 2017)

To estimate the water savings, the Board used its Urban Water Supplier Reporting database. In July 2014, the State Water Board first adopted drought emergency conservation regulations. Among other actions, the emergency regulations required urban water suppliers to submit to the Board monthly reports including information about current and 2013 (baseline) monthly production volumes. Comparing current production data to the baseline enables the Board to track water savings over time.

The State Water Board has calculated cumulative water savings and monthly water savings every month since this type of water use reporting became required. The Board's monthly calculation indicates how much water suppliers have conserved since the emergency regulations were first adopted in June 2014. Column A of Table 2 shows how much water Californians saved in each hydrologic region between June 2014 and April 2017 (a 2.8-year period). For reasons described in subsequent paragraphs, the State Water Board attributes

1% of those savings to prohibitions against wasteful water uses.¹ Column B shows the cumulative savings due to the prohibitions (A*1%); column C, the annually averaged savings over the 2.8-year period.

The total reported savings from 2014-2017 (i.e., the 3.5 million AF) reflect not only the prohibitions (required by the emergency conservation regulations) but also the 2014 drought proclamation and the 2015 mandate. The 2014 proclamation called on Californians to voluntarily conserve water, with a goal of reducing statewide urban water use by 20 percent. Between April 2014 and April 2015, statewide conservation efforts reached 9 percent, based on water use data reported to the Board. With drought conditions worsening in 2015, on April 2, 2015, Governor Brown issued Executive Order B-29-15, mandating, among other things, that the State Water Board adopt regulations that would lead to Californians reducing statewide potable urban water use by 25 percent. When the Governor's mandate went into effect, Californians responded immediately, reducing water use by 23.9 percent between June 2015 and June 2016. The State Water Board assumes the voluntary goal and the mandatory reductions resulted in most of the total water savings, and that the prohibitions alone resulted in a much smaller portion.

The total reported savings additionally reflect the impact of pre-existing policies. California became the first state to adopt a water use efficiency target with the passage of SB X7-7 in 2009. SB X7-7 mandated the state achieve a 20 percent reduction in urban per capita use by 2020. The reduction goal is also known as "20x2020." SB X7-7 directed water suppliers to develop individual targets for water use based on a historic per capita baseline. The savings observed between June 2014 and April 2017 additionally reflect the past and on-going work of water agencies to reduce urban water use 20 percent against that baseline by 2020.

The State Water Board also considered the role of Urban Water Management Plans (UWMPs, or Plans) in spurring water savings. The Urban Water Management Planning Act requires urban water suppliers to prepare and adopt a Plan, and to update it at least once every five years. The Plans provide a framework for long term water planning and must contain information about: water deliveries and uses; water supply sources; demand management measures; and water shortage contingency planning. The contingency analysis must include information about "mandatory prohibitions against specific water use practices..." (DWR 2016).

Within the UWMPs, mandatory prohibitions vary depending on what stage of water shortage has been declared. Typically, suppliers will include between three and five stages in a water shortage contingency analysis, with each subsequent stage reflecting decreasing water supplies (DWR 2016). Stages are defined at the urban supplier's discretion: they can be defined quantitatively (e.g., Stage 1 represents a 10% supply reduction) or qualitatively (e.g., a stage 1 represents a "mild water shortage"). The higher the stage, the more stringent the prohibitions will be. See Table 3 for a hypothetical example.

During the recent and unprecedented California drought, urban water suppliers invoked water shortage contingency plan stages (WSCP) requiring significant conservation measures (as reported in the Urban Water Supplier Reporting database). For many utilities, later-stage prohibitions are considerably more restrictive than those required by the proposed regulation,

¹ Along with the reporting requirements, the June 2014 emergency conservation regulations also prohibited certain wasteful and unreasonable uses of water (the same uses that would be prohibited by the proposed regulation).

suggesting that any savings due to the prohibitions required via the emergency conservation regulations would be small relative to those required via later-stage WSCPs.

Stage		Example Prohibitions
0	Normal	Application of potable water to outdoor landscapes that causes runoff.
1	Moderate	Hosing of hardscape surfaces, except for health and safety needs.
2	Significant	Outdoor watering more than 3 days per week.
3	Severe	Outdoor watering more than 2 days per week.
4	Critical	Outdoor irrigation.

Table 3: Hypothetical example of the various stages of water shortage contingency plans.

Finally, the State Water Board based its assumption that 1 percent of the total reported savings can be attributed to the prohibitions on an examination of changes to outdoor winter water use. The Board examined outdoor winter water use because, according to the results of an analysis the Board completed (see Sample of UWMPs sub-section in the 399 supplement), only 16 of the 40 randomly sampled UWMPs included the prohibition restricting irrigation during and within 48 hours after measurable rainfall (the fifth prohibition in Table 4). Looking at the relatively uncommon no-irrigating-when-it's-raining prohibition provided an opportunity to distinguish the influence of the state-mandated prohibitions from those attributable to locally-driven drought responses and policy choices.

	The application of water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property,....	The use of a hose that dispenses water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle.	The application of potable water to hardscapes.	The use of potable water in an ornamental fountain unless with a recirculating system	The application of water to irrigate turf and ornamental landscapes during and within 48 hours after measurable rainfall...	The serving of drinking water other than upon request in eating or drinking establishments	The irrigation of turf on public street medians...	Hotels and motels must provide guests with the option of having towels and linens laundered, and prominently display this option.
Prohibition #	1	2	3	4	5	6	7*	8
% of suppliers w/ equivalent prohibitions	95%	98%	98%	88%	40%	80%	18%	65%

Table 4: Percentage of sampled suppliers with Plans including equivalent prohibitions.

*Even fewer suppliers included prohibition 7 (irrigation of turf on public medians...) in Plans.

Analyzing its impact would also provide an opportunity to distinguish the influence of the state-mandated prohibitions from those attributable to locally-driven drought responses and policy choices. However, the State Water Board determined estimating its impact would be impossible given data constraints.

To analyze the impact of the fifth prohibition, the State Water Board compared pre-drought winter water use (2013) to winter water use during the drought (2014, 2015, and 2016). The Board first estimated what percentage of the reported winter savings occurred outdoors. The State Water Board based the estimate of what percentage of the water savings occurred outdoors in part on a 2003 Pacific Institute document, Waste Not, Want Not: The Potential for Urban Water Conservation in California.

According to the Pacific Institute estimates, an average of 4 percent of California winter residential water use occurs outdoors. The State Water Board assumed proportionate winter water savings, i.e. that 4 percent of the water conserved during the winter months is due to outdoor water conservation measures. The Board then compared the gallons saved outdoors (Column D in Table 5.) to the 2013 pre-drought winter baseline (Column A), which indicated that winter water savings represented, respectively, 0.36 percent, 0.72 percent, and 0.88 percent of the 2013 winter baselines (Column E).

Winter ¹ year	2013 winter baseline ² (AF)	Winter production (AF)	AF saved	AF saved outdoors	% of 2013 baseline
	A	B	C (A-B)	D (C*4%)	E $\left\{\frac{D}{A}\right\}$ *100)
14/15	1.6 million	1.46 million	144 thousand	5.8 thousand	0.36%
15/16	1.58 million	1.29 million	288 thousand	11.5 thousand	0.72%
16/17	1.57 million	1.23 million	347 thousand	13.8 thousand	0.88%

¹Winter is December through March. ² Since reporting began in June 2014, urban water suppliers have refined their 2013 baseline estimates. Hence, the 2013 baseline varies. Table 5: Winter Water Savings due to the no-irrigating-when-it’s-raining prohibition To distinguish the influence of the state-mandated prohibitions, the State Water Board assumed 1) that prohibitions 1-4, 6 and 8 will result in de minimis new savings, since most urban water suppliers already have equivalent prohibitions in place (See Table 5); 2) the percent of the total estimated savings due to the no-irrigating-when-it’s raining prohibition is equal to the percent of outdoor winter savings relative to the 2013 winter baseline; and 3) that, because no-irrigating-when-its raining is a relatively rare prohibition, its impact is a reasonable proxy for estimating the percent estimated savings due to the prohibitions en masse. To account for additional savings potentially attributable to the other prohibitions, the State Water Board conservatively rounded the 0.65% average (i.e., (0.36% + 0.72% + 0.88%)/3) up to an even 1%.

To summarize, the State Water Board assumes that comparing the 2013 winter water use baseline to outdoor winter water savings during the drought is the best approximation of the effects of the prohibitions en masse for the following reasons:

- The no-irrigating-when-it’s raining prohibition will save the most water during the months of December-March, and is a relatively uncommon local prohibition (See Table 4).
- Californians embraced other wintertime outdoor conservation measures, especially during the historic drought. Measures included not irrigating at all during the winter months. Inasmuch, attributing winter-time savings to the no-irrigating-when-it’s raining prohibition is likely a conservative over-estimate of the prohibition’s impact. Likewise,

our estimate of the total volume save overestimates the impact of the prohibitions in general.

- The impact of the prohibitions is relatively small given the influence of preexisting policies in place during the analyzed period, such as UWMPs, SBX7-7, the 2014 proclamation calling on Californians to voluntarily reduce water use by 20 percent, and the 2015 mandatory water use reductions.

The State Water Board, based on the best available data and studies, conservatively estimated that 1 percent of the cumulative statewide water savings, averaged over a 2.8 year period during the drought, (totaling 12, 489 AF/yr) may be attributable to all of the prohibitions mandated by the drought emergency conservation regulations. The Board assumes that the proposed regulation would result in commensurate annual savings.

The Economic Costs

Having estimated the annual average savings due the prohibitions, the Board analyzed the economic impact of the proposed regulation. The following paragraphs summarize the economic costs. The State Water Board estimates the proposed regulation, over its lifetime, will have statewide economic (not fiscal) direct costs totaling \$15,966,396. Looking at costs over the proposed regulation's "lifetime" requires defining the lifetime. The State Water Board assumed a 20-year lifetime and assigned a yearly discount rate of 0.5 percent. To calculate the present value of the 20-year stream, the State Water Board summed the annual present values, assumed to decline by 0.5 percent per year. Table 6 shows the first five years of the 20-year horizon. The State Water Board estimates that annual costs will become and remain \$0 starting in Year 3.

Costs over a 20-Year Lifetime for BUSINESSES AND INDIVIDUALS					
Real Interest Rate, 20-year, i	0.50%				
First Year of Time Horizon, January 1	2018				
Last Year of Time Horizon, January 1	2038				
Year, Position in the Time Horizon	Year 1	Year 2	Year 3	Year 4	Year 5
Year, Calendar, t	2018	2019	2020	2021	2022
Discount Factor = $1 / (1 + i)^{(t - 2018)}$	1.000	0.995	0.990	0.985	0.980
Economic Direct Cost of Private Suppliers and Customers					
Year, Position in the Time Horizon	Year 1	Year 2	Year 3	Year 4	Year 5
Costs, Economic (not Fiscal) 2015 \$	2,313,022	13,721,641	0	0	0
Present Value, each year	2,313,022	13,652,374	0	0	0
Sum of Present Values (for Direct Economic Costs)	15,966,396				

Table 6: Lifetime economic costs of the proposed regulation

The costs change in the first two years; thereafter, the State Water Board assumes they remain constant, in real terms. The pink highlighted cells in Table 7 show the direct economic costs for Year 1, Year 2 and Year 3. In the first year (Year 1), the Board assumes the following:

- Californians conserve water due to the proposed regulation and these water savings cause water suppliers to lose revenue. Gross revenue loss to **private** suppliers= total supplier revenue losses * 15%, as the Water Board assumes 15% of all urban water suppliers are private.

- The suppliers absorb this loss in the first year; in other words, they do not pass on lost revenue costs to customers in the first year.
- Customers and private suppliers purchase nozzles.
- Urban suppliers pass on nozzle costs to customers as a one-time surcharge.

In the second year (Year 2), the Board assumes the following:

- As a one-time surcharge to customers, the urban suppliers pass on the revenue loss costs they incurred in Year 1.
- By Year 2, urban suppliers will have permanently adjusted fixed service charges so that they do not lose revenue as customers continue to conserve. Using less water, customers would not pay more.

The Economic Benefits

The most significant economic benefit of the proposed regulation is its contribution to California's future water security. Robustly estimating the statewide value of this contribution would be wholly speculative based on existing data and studies. This proposed regulation defines specific water uses as wasteful and unreasonable, increasing conservation, which, in turn, increases drought resilience; it also imposes penalties on HOAs and cities when they do not comply with existing law.

In general, the State Water Board perceives several categories of potential benefits, including increased streams flows, decreased energy use, increased activities in drought-based industries, increased water quality, increased awareness about water waste, reduced probability of severe economic disruptions in drought, and more equitable management of water. In addition, the Board expects potential benefits to small businesses such as restaurants (saving water and energy by washing fewer glasses), landscapers (increased demand for irrigation design, installation, and management), and small and large hotels & motels (saving water and energy by washing less linen). These benefits are unlikely to significantly impact the state's economy.

To complete the economic impact analysis, the State Water Board considered two categories of probable benefits, where the Board could base its estimates on available data. Those categories are (1) Variable Cost Savings; and (2) Offset Demand Savings. The Board based these estimates on the water savings due to the prohibitions, i.e. 12,489 AF/yr.

The State Water Board estimates the proposed regulation, over its lifetime, will have statewide economic (not fiscal) benefits totaling \$167,748,630. Looking at benefits over the proposed regulation's "lifetime" requires defining the lifetime. The State Water Board assumed a 20-year lifetime and assigned a yearly discount rate of 0.5 percent. To calculate the present value of the 20-year stream, the Board summed the annual present values, assumed to decline by 0.5 percent per year (e.g., \$8,790,771 in the first year; \$8,747,036 in the second year, etc.). Table 7 shows the first five years of the annual present values, and, in the last and highlighted row, their sum: \$167,748,630. For comparison, Table 7 also shows the first five years of total direct benefits for the 20-year horizon. The Board estimates that annual benefits of \$8,790,771 will be constant in future 2015 dollars starting in Year 1.

To estimate the benefits, the State Water Board assumed the following:

- Private suppliers realize variable cost savings.
Private Supplier variable cost savings= total supplier variable cost savings * 15%.
- Private suppliers realize offset demand savings.
Private Supplier offset demand savings= total supplier offset demand savings * 15%.
- All urban suppliers pass on variable cost and offset demand savings to customers.

See Standard Form 399 and the associated supplement for more detailed information about the sources, assumptions and calculations informing the Board's economic impact assessment.

Direct Benefits over a 20 Year Lifetime for BUSINESSES AND INDIVIDUALS					
Real Interest Rate, 20-year	0.50%				
First Year of Time Horizon, January 1	2018				
Last Year of Time Horizon, December 31	2038				
Year, Position in the Time Horizon	Year 1	Year 2	Year 3	Year 4	Year 5
Year, Calendar, t	2018	2019	2020	2021	2022
Discount Factor = $1 / (1 + i)^{(t - 2018)}$	1.000	0.995	0.990	0.985	0.980
Economic Direct Benefit to Private Suppliers and Customers					
Year, Position in the Time Horizon	Year 1	Year 2	Year 3	Year 4	Year 5
Variable Cost Savings to Private Suppliers	\$431,755	\$431,755	\$431,755	\$431,755	\$431,755
Offset Demand to Private Suppliers	\$709,175	\$709,175	\$709,175	\$709,175	\$709,175
Variable Cost Savings to all Customers (benefits from Private + Public Suppliers)	\$2,894,884	\$2,894,884	\$2,894,884	\$2,894,884	\$2,894,884
Offset Demand Savings to all Customers (benefits from Private + Public Suppliers)	\$4,754,957	\$4,754,957	\$4,754,957	\$4,754,957	\$4,754,957
Total Direct Benefits, Economic (future \$)	\$8,790,771	\$8,790,771	\$8,790,771	\$8,790,771	\$8,790,771
Present Value, each year	\$8,790,771	\$8,747,036	\$8,703,519	\$8,660,217	\$8,617,132
Sum of Present Values for Direct Economic Benefits: \$167,748,630					

Table 7: Lifetime direct, economic benefit of the proposed regulation.

Summary/Results of the Economic Impact Analysis

As a result of the proposed regulation, the State Water Board initially determines no jobs or businesses would be created or eliminated, and that landscaping businesses may expand. The regulation would have no direct benefits on the health and welfare of California residents or worker safety; it would benefit the environment, as described in Section C.

COST OR SAVINGS IMPOSED ON LOCAL AGENCIES OR SCHOOL DISTRICTS

The State Water Board has determined that there is no cost or savings imposed on local agencies or school districts as a result of the proposed regulations, or other nondiscretionary costs or savings imposed on local agencies or school districts, with the exception of urban water agencies. The Board assumes urban water agencies would use reserve funds to temporarily cover the cost of reduced water sales within the first year of the regulation's implementation. Urban water utilities would recover those lost revenue costs the following year. The one-time costs associated with purchasing automatic shutoff nozzles would also be recovered from customers the year incurred. Similarly, any savings urban water agencies realize would eventually be passed onto customers.

BUSINESS REPORTING REQUIREMENT

The proposed regulation would not require any reporting requirements of businesses.

BUSINESS IMPACT/ SMALL BUSINESS

The State Water Board has determined that the proposed regulation does not have a significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states. Nor will the proposed regulatory action adversely affect small businesses in California. Government Code section 11342.610 excludes water utilities from the definition of small business.

COST IMPACTS ON REPRESENTATIVE PRIVATE PERSONS OR BUSINESSES

The State Water Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed regulations, with the exception of a small fraction of California households that would purchase a nozzle with an automatic shutoff component and those urban water suppliers that are defined as businesses, i.e., investor-owned or privately-owned mutual water companies. Over a twenty-year time horizon, the highest one-time annual cost to a household would be \$1.12. Over the same time period, the highest one-time annual cost to a private water supplier would be \$33,756. These costs likely overestimate the economic impact of the regulation for reasons described in the 399 supplement.

EFFECT ON HOUSING COSTS

The State Water Board has determined that the proposed regulatory action will have no effect on housing costs.

COST OR SAVINGS TO STATE AGENCIES

The State Water Board has determined that there is no savings to state agencies as a result of the proposed regulation. Implementation of the proposed updated emergency regulation will result in no additional workload for the State Water Board. It is anticipated that any additional costs will be absorbed within the State Water Board's existing request that has been fulfilled to hire programmatic and enforcement staff that will perform any additional tasks within their job descriptions.

COST OR SAVINGS IN FEDERAL FUNDING TO THE STATE

The State Water Board has determined that there is no cost or savings in federal funding to the state as a result of the proposed regulations.

ALTERNATIVES

The State Water Board must determine that no reasonable alternative it considered or that has otherwise been identified and brought to its attention would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law. Interested persons may present statements or arguments with respect to alternatives to the proposed regulation during the written comment period or at a hearing, if a hearing is requested, on this matter.

AVAILABILITY OF INITIAL STATEMENT OF REASONS, TEXT OF PROPOSED REGULATION, AND THE RULEMAKING FILE

The State Water Board has prepared an Initial Statement of Reasons for the proposed action. The statement includes the specific purpose for the regulation proposed for adoption and the rationale for the State Water Board's determination that adoption is reasonably necessary to carry out the purpose for which the regulation is proposed. All the information upon which the proposed regulation is based is contained in the rulemaking file. The Initial Statement of Reasons, the express terms of the proposed regulation, and the rulemaking file are available from the contact person listed below or at the website listed below. Those documents contain the all references cited herein.

AVAILABILITY OF CHANGED OR MODIFIED TEXT

After considering all timely and relevant comments received, the State Water Board may adopt the proposed regulation substantially as described in this notice. If the State Water Board makes modifications that are sufficiently related to the originally proposed text, it will make the modified text (with the changes clearly indicated) available to the public for at least fifteen (15) days before the State Water Board adopts the regulations as modified. A copy of any modified regulations may be obtained by contacting Ms. Charlotte Ely, the primary contact person identified below. The State Water Board will accept written comments on the modified regulations, if any, for fifteen (15) days after the date on which they are made available.

AVAILABILITY OF FINAL STATEMENT OF REASONS

Upon its completion, a copy of the Final Statement of Reasons (FSOR) may be obtained by contacting either of the persons listed below. A copy may also be accessed on the State Water Board website identified below.

CONTACT PERSONS

Requests of copies of the text of the proposed regulation, the statement of reasons, or other information upon which the rulemaking is based, or other inquiries should be addressed to the following:

Name:	Charlotte Ely
Address:	State Water Resources Control Board Office of Research, Planning and Performance 1001 "I" Street Sacramento, CA 95814 Telephone No.: (916) 319-8564
E-mail address:	Charlotte.Ely@waterboards.ca.gov

The backup contact person is:


Name: Kathy Frevert
Address: State Water Resources Control Board
Office of Research, Planning and Performance
1001 "I" Street
Sacramento, CA 95814
Telephone No.: (916) 322-5273
E-mail address: Kathy.Frevert@waterboards.ca.gov

The documents relating to this proposed action may also be found on the State Water Board's website at the following address:

www.waterboards.ca.gov/water_issues/programs/conservation_portal/index.shtml

November 2, 2017

Date



Jeanine Townsend,
Clerk to the Board