



May 28, 2015

Chair Marybel Batjer  
Building Standards Commission  
2525 Natomas Park Drive, Suite 130  
Sacramento, California 95833

**Subject: CALGreen Landscape Irrigation Efficiency Emergency Regulations**

Dear Ms. Batjer,

The Natural Resources Defense Council (NRDC) supports the efforts of the Building Standards Commission (BSC) to revise CALGreen on May 29, 2015 and to reduce the allowable water budget in the Department of Water Resources (DWR) Model Water Efficient Landscaping Ordinance (MWELo) for residential, nonresidential, and other building types.

Although Directive 7 of the Executive Order specifically calls for the prohibition of irrigation outside new buildings with other than drip or microspray, the proposals from the Building Standards Commission (BSC), Housing and Community Development (HCD), and The Division of the State Architect have taken a different approach by instead proposing to require water budgets for new landscapes. The effect of this change will result in the installation of very high efficiency irrigation methods, such as drip, or low water demand landscaping choices; therefore, NRDC supports the recommendation from BSC and HCD to set the evapotranspiration adjustment factor (ETAF) in the Model Water Efficient Landscape Ordinance (MWELo) to 0.55. We note that the proposal from The Division of the State Architect recommends an ETAF of 0.65 that we do not think is adequate to meet the requirements of the Executive Order.

While the proposals put forth in this emergency rulemaking are a positive step, we believe that they do not fully respond to the Executive Order because the new requirements for water budgeting only apply to landscapes larger than 2,500 square feet – the current cutoff for the Model Ordinance – and much of the new development today has landscaped areas that fall below this threshold. We recommend that this be threshold be reduced to 500 square feet (sqft) for nonresidential applications and 200 sqft for residential applications.

Furthermore, we have included some recommended revisions and additions to the proposed standards submitted to BSC through the Emergency Rulemaking Process that would more effectively respond to Governor Brown's January 2014 declaration of a drought State of Emergency;<sup>1</sup> the April 1, 2015 Executive Order (EO) mandating improved efficiency for new landscape irrigation systems;<sup>2</sup> and statewide water and energy efficiency goals.<sup>3</sup> Suggested language and rationale for these changes are included as Attachment A.

### **Irrigation Equipment Efficiency Standards**

The CALGreen proposed water budget directly regulates plant selection but not necessarily irrigation efficiency because the MWELo uses a default irrigation equipment efficiency value (71%) and does not contain a method for determining actual efficiency. Therefore, we recommend requiring that all irrigation technologies meet the nationally recognized American National Standards Institute ASABE/ICC 802-2014 (ANSI 802-2014), as proposed by the Irrigation Association, to improve irrigation equipment efficiency.<sup>4</sup>

Irrigation emitters such as spray and rotor devices that are manufactured to comply with ANSI 802-2014 contain pressure regulation devices to avoid water wasted due to water system supply pressures that typically exceed the 30 pounds per square inch (psi) rating of irrigation emission devices. These losses typically exceed 20% due to excess irrigation rates and misting that migrates off-site. ANSI 802-2014 also contains a quality requirement for a range of irrigation emitter devices for leak reduction.

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<sup>1</sup> California Declaration of Drought State of Emergency. January 17, 2014.

<sup>2</sup> <http://gov.ca.gov/news-ghp?id=18379>  
California Executive Order Number B-29-15. April 1, 2015.  
[http://gov.ca.gov/docs/4.1.15\\_Executive\\_Order.pdf](http://gov.ca.gov/docs/4.1.15_Executive_Order.pdf). We understand from the May 7, 2015 CALGreen workshop that the intent of EO item 7 is to prohibit inefficient irrigation methods.

<sup>3</sup> For instance, California's Global Warming Action Plan calls for more stringent water efficiency standards because twenty percent of the electricity and thirty percent of the natural gas used in California is attributed to water supply, conveyance, treatment, and distribution and use. California Energy Commission. 2015. "CA Existing Buildings Energy Efficiency Action Plan- Draft" Available at: <http://www.energy.ca.gov/ab758/>. Last accessed April 19, 2015.

<sup>4</sup>See May 4, 2015 comment letter to the State Water Resources Control Board:  
[http://www.swrcb.ca.gov/waterrights/water\\_issues/programs/drought/comments050415/docs2/john\\_farner.pdf](http://www.swrcb.ca.gov/waterrights/water_issues/programs/drought/comments050415/docs2/john_farner.pdf)

ASABE/ICC 802-2014 establishes design and testing requirements for landscape irrigation equipment.

## **Metering New Landscapes**

CALGreen currently contains 1) a mandatory requirement for separately metering or sub-metering new or upgraded water service for nonresidential landscapes between 1,000 and 5,000 square feet (2013 CALGreen section 5.304.2) and 2) a voluntary requirement for separate metering of new water service connections at residential properties with irrigated areas greater than 2,500 feet (2013 CALGreen section A4.304.6). We recommend the following:

- Reduce the minimum threshold for nonresidential separate metering or sub-metering to 500 sqft.
- Move the voluntary residential requirement to the mandatory section of the code and reduce the minimum threshold to 200 square feet, and
- Require metering for new residential and nonresidential landscapes or landscape additions independent of whether or not the water service changes.

These changes would provide homeowners with landscape irrigation water usage information over time and also help them more readily identify leakage. This change will also help business owners track water usage, especially when monitoring water usage by landscape maintenance contractors who do not pay the water bill.

We appreciate the opportunity to participate in this process and encourage BSC to adopt the proposed emergency rulemaking with the noted above and included in Attachment A.

Best regards,

A handwritten signature in black ink, appearing to read "Tracy Quinn". The signature is fluid and cursive, with a large initial "T" and "Q".

Tracy Quinn, P.E.  
Policy Analyst  
Natural Resources Defense Council

## Attachment A: Proposed CALGreen Express Terms and Rationale

The changes to the existing (2013) CALGreen code proposed by NRDC are marked with double underline and ~~double strikethrough~~.

### CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

4.304.4 . Water Efficient Irrigation Equipment. All irrigation emission devices, as defined by ANSI ASABE-ICC 802-2014, that are installed on or after November 29, 2015 shall comply with ANSI ASABE-ICC 802-2014 and shall be marked as compliant with that standard.

Exception: unmarked products certified by manufacturers as meeting ANSI ASABE-ICC 802-2014 shall be permissible until May 29, 2016.

Rationale: Water supply pressures are often significantly higher than is needed, which can lead to excess irrigation of more than 20% as well as water wasted from misting that blows off-site. The ANSI 802-2014 standard requires pressure regulators for rotor and spray sprinklers and quality requirements for leak detection for bubblers, drip emitters, and micro sprays. Adopting these standards will lead to major improvements in irrigation system efficiency consistent with Governor Jerry Brown's April 1, 2015 Executive Order.

~~A4.304.6~~ 4.304.5 Irrigation metering device. ~~For n~~New water service connections, landscaped irrigated areas with more than 200 square feet and additions with more than ~~2,500~~ 200 square feet shall be provided with separate submeters or metering devices for outdoor portable water use.

**Rationale:** The proposed change will move the current voluntary requirement for submetering or metering to the mandatory section of the residential code. Metering is a key tool for allowing home owners to monitor the water efficiency of landscapes, track efficiency over time, and detect leaks in landscape irrigation systems. Additionally, the proposal as originally submitted does not fully respond to the Executive Order because the new requirements for water budgeting do not appear to apply to landscapes below 200 square feet – the current cutoff for the Model Ordinance – and much of the new residential development today has landscaped areas that falls below this threshold. We recommend a minimum threshold of 200 square feet.

## CHAPTER 5

### NON-RESIDENTIAL MANDATORY MEASURES

**5.304.2 Outdoor potable water use metering.** For new water service or for addition or alternation ~~requiring upgraded water service for landscaped areas of at least 4,000~~ 500 square feet but not more than 5,000 square feet (the level at which Water Code section 535 applies), separate submeters or metering devices shall be installed for outdoor potable water use.

**Rationale:** The proposed change will clarify that water metering is required for alterations that add at least 500 square feet of irrigated area. The current language could be interpreted to exclude additions that do not result in an upgraded water service. The proposed revision will require submetering or metering of all alternations that exceed this threshold.

**5.304.5 Irrigation System Efficiency Verification.** Project applicants for landscapes requiring a building or landscape permit, plan check or design review shall comply with 5.304.5.1 and 5.304.5.2 if they are newly-constructed or rehabilitated non-residential projects where the landscaped area is equal to or greater than 500 square feet.

**5.304.5.1** The project applicant shall submit an irrigation audit report along with the Certificate of Completion form to the local agency implementing the Model Water Efficient Landscape Ordinance (MWELo) or a locally adopted WELo. This report shall include but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting of overspray or run off that causes overland flow, and preparation of an irrigation schedule for the irrigation controller.

*[Note: Local jurisdictions are required to adopt and implement the MWELo or a locally adopted WELo that is at least as effective in conserving water as the MWELo. The MWELo requires that auditors hold a certification to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and the Irrigation Association's Certified Landscape Irrigation Auditor program.*

**5.304.5.1.** The project applicant shall specify the type and location of pressure regulation devices on the landscape irrigation plan.

**Rationale:** Inspectors often lack a mechanism to ensure that the current CALGreen section 5.304.3.1 requiring irrigation controllers with weather or soil-moisture based controllers is properly implemented. The US EPA has found that improper programming of these controllers can in some cases increase water use (WaterSense Specification for Weather Based Irrigation Controllers Supporting Statement, 2011).

In addition, MWELo is inconsistently enforced because many inspectors do not have the training to perform a landscape irrigation efficiency audit. The proposed audit requirement will provide inspectors with a report to compare against actual installation and help inspectors verify compliance. The proposal will also help local jurisdictions meet mandatory water conservation goals set by Governor Brown's April 1, 2015 Executive Order.

Furthermore, reducing the minimum threshold of applicable projects to 500 square feet would more effectively respond to the Executive Order as much of the new development today has landscaped areas that fall below this threshold.

**5.304.6 Water Efficient Irrigation Equipment.** All irrigation emission devices, as defined by ANSI ASABE-ICC 802-2014, that are installed on or after January 1, 2016 shall comply with ANSI ASABE-ICC 802-2014 and shall be marked as compliant with that standard.

Exception: unmarked products certified by manufacturers as meeting ANSI ASABE-ICC 802-2014 shall be permissible until May 29, 2016.

**Rationale:** Water supply pressures are often significantly higher than is needed, which can lead to excess irrigation of more than 20% as well as water wasted from misting that blows off-site. The ANSI 802-2014 standard requires pressure regulators for rotor and spray sprinklers and quality requirements for leak detection for bubblers, drip emitters, and micro sprays. Adopting these standards will lead to major improvements in irrigation system efficiency consistent with Governor Jerry Brown's April 1, 2015 Executive Order.