

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF CODES AND STANDARDS**

2020 W. El Camino Avenue, Suite 200, Sacramento, CA 95833
P.O. Box 1407, Sacramento, CA 95812-1407
(916) 445-9471 / FAX (916) 263-5348
From TDD Phones 1-800-735-2929
www.hcd.ca.gov



June 25, 2015

VIA email transmission: Julie-saare-edmonds@water.ca.gov
Julie Saare-Edmonds
Senior Environmental Scientist
Landscape and Green Building Program
ITP Project Manager
Water Use and Efficiency
California Department of Water Resources

Re: Model Water Efficiency Landscape Ordinance
June 12, 2015, Public Draft
**California Department of Housing and
Community Development Comments**

The State Housing Law was enacted by the Legislature to encourage uniformity in building standards; protect the health, safety and general welfare of the public and occupants of residential buildings statewide. The State Housing Law Program, administered through Department of Housing and Community Development (HCD), develops and adopts building standards upon approval of the California Building Standards Commission. Through HCD oversight, those residential building standards are enforced by local government.

In response to the Governor's Executive Order B-29-15, HCD and other state agencies proposed emergency building standards to help mitigate and reduce the amount of potable water used for outdoor irrigation purposes. HCD emergency building standards were approved by the California Building Standards Commission on May 29, 2015, filed with the Secretary of State, becoming effective in the 2013 California Green Building Standards Code (CALGreen) June 1, 2015. The Emergency regulations focused on reducing water allowances through a more restrictive Maximum Allowable Water Use formula in the Department of Water Resources' (DWR) Model Water Efficient Landscape Ordinance (MWELo).

HCD staff has reviewed the June 12, 2015, MWELo Public Draft and has the following comments. Please note that HCD does not have technical expertise in landscape architecture, horticulture, or soil science. Therefore, our comments focus on areas of the draft MWELo which are unclear. Specifically, as the MWELo may effect implementation by local enforcement under State Housing Law purview, the issuance of building permits, required construction documents, building inspection processes and the potential for increased housing costs that may be contrary to the State Housing Law programs mission.

General Comments

Strikeout/Underscore Format

The strikeout and underscore format in the draft regulations is difficult to follow. The typical convention is to strikeout the unwanted existing regulatory text and follow it with the new proposed underscored text. If the change is complex, it is easier to strikeout larger sections and show the preferred change underscored. This is especially effective when changing portions of larger numbers.

For example, the Table on Page 12, show proposed changes as “17,000” rather than “~~7~~1,000”.

Gray Water

The term “graywater” as used and referred to the California Plumbing Code is two separate words: *gray water*. Gray water should be given the same consideration as recycled water as related to Special Landscape Area water allowances. Otherwise, there is no documented potable water savings for use of gray water. Ref: 490(c)(3); 491(u); 492.6(b)(12); 492.15; 492.17(b)(1); Additional specific comments on gray water are listed below.

Availability of Plants

DWR newly proposed ET Adjustment Factors and Irrigation Efficiency factors will result in less water allowable and calculated for a specific landscape area and planting. It is not clear whether these types of plants will be available for the mass market and various climate zones.

Plant Selection and Soils

Low water use plants and native plants may require specific soil conditions such as fast-draining soils, gravelly soils, or soils that are not nutrient-rich. It is not clear whether the proposed soil amendments will be appropriate for low water use plants or native plants and whether a significant soil amendment at the six-inch depth will create a soil interface which may interfere with soil drainage. It is also not clear how this metric would be enforced or inspected.

Regulatory Impacts

The draft regulatory text was not accompanied by a supporting document showing costs and benefits of the mandated measures. Although not required at this draft stage, it makes some of the evaluation of measures difficult without knowledge of the costs that may result from implementation of the proposed regulations.

Appendix A and Reference Evapotranspiration (ETo) Tables.

The draft regulations do not propose any changes to Appendix A, however, the tables may need adjustment at some point in time if the drought continues and average rainfall for regions change. Otherwise, the proposed reductions in allowed water use would

have additional impact since the ETo rates would have been calculated based on higher rainfall for regions.

Section-Specific Comments

Purpose. Section 490(b)(1)

- Although this subsection is part of legislative intent, the phrase “integrate and transcend” is not clear and not typical regulatory text. Text similar to “integrate and encourage...” may be more appropriate.

490(b)(2) Purpose:

- This subsection references “whole watershed approach” and “landscapes of any size.” The term “whole watershed approach” may need further definition since the MWELO applies, in large part, to urbanized areas and far from streams, tributaries or rivers. Also, since the MWELO includes size thresholds for applicability, the reference to “of any size” may be misleading.

490(c) and 490(c)(3) Purpose:

- The term “regenerative” is not defined. It could mean self-sustaining, self-propagating, invasive, depending on interpretation.
- Subsection (3) refers to “supplemental” water. This should be clarified to mean supplemental water after establishment.

490.1(a) and 490.1(a)(1) and (2) Applicability:

- The regulations include a proposed effective date of November 1, 2015. This date does not coincide with the triennial (January 2017) or intervening (July 2018) building standards code adoption cycles. It also does not coincide with “typical” effective dates of legislation. How was this date determined?
- Subsections (1) and (2) include references to applicability of MWELO based on square footage of landscaped area. These subsections should clarify whether the application is based on a per building lot basis or aggregate project basis.

Definitions. Sections 491(j), 491(q), 491(bb), 491(hh), 491(pp), 491(tt), 491(kkk), 491(uuu)

- The definition for “drip irrigation” references “non-spray low volume irrigation system.” If a standard is used, the definition should include a flow rate for the emission devices with an associated pressure rate to provide guidance on what “low volume” means.
- The definition for “ET adjustment factor” includes proposed numerical changes which will change the amount of Maximum Water Use Allowance (MAWA). The impacts of these changes combined with the proposed changes in Irrigation Efficiency are not clear and may be infeasible for general landscapes. Supporting documentation such as a small typical landscape using the existing MAWA formula and Estimated Total Water Use (ETWU) compared to a compliant landscape of the same size and any Special Landscape Area would be helpful.

- The definition for “irrigation efficiency” includes proposed numerical changes which will change the ETWU and require a minimum level of irrigation equipment efficiency and proper irrigation management. Is an irrigation efficiency of 0.85 for residential and 0.92 for non-residential areas feasible on a statewide basis with California’s variable topography and climate? Are irrigation systems and equipment currently available and affordable to reach this level of irrigation efficiency?
- The definition for “landscape designer” refers to the Business and Professions Code (BPC). The BPC refers to landscape architects, but does not recognize landscape “Designers”.
- The definition for “master valve” specifies that the valve is an electric valve. Does a valve with this function have to be electric? Can it operate wirelessly or by mechanical means? HCD proposed a new section (Leak detection) in the 2016 CALGreen, which would require an automatic valve to shut-off the water when the leak is detected. However, HCD withdrew this proposal due to some perceived safety concerns related to fire sprinkler activation. DWR should consider this as a possible impact if the device is intended to be installed at the main supply line.
- The proposed definition for “microspray” includes a maximum flow rate of 30 gallons per hour. This seems to be a relatively high flow rate and there are overhead sprinklers available that have a lesser flow rate. In addition, is it necessary to have a definition for “microspray” if it is not used somewhere within the MWELO regulations?
- The definition for “reference evapotranspiration” includes a reference to Appendix A. See general comment on Appendix A and ETo on Page 1.
- The definition for “turf” includes a list of cool season grasses and warm season grasses. The benefits of choosing warm season grasses vs. cool season should be indicated somewhere in the MWELO.

Elements of the Landscape Documentation Package. Section 492.3(a)(1)(F) and 492.3(3) – (6)

The “water supply types” should also reference alternate water sources such as collected rainwater, or gray water which may be used for irrigation purposes. The level of detail and crossover of disciplines for a complete Landscape Documentation Package may involve more than the services of a landscape architect. Other professionals to be involved may include structural or civil engineers for grading plan designs and a design professional for designing the building. Although it is existing regulation, the change in MWELO application will subject projects on smaller lots/landscaped areas to these requirements. An estimated cost for a 500 square-foot landscaped area for one lot would be helpful information to assess impacts of these sections at the new application levels.

Water Efficient Landscape Worksheet. Section 492.4, 492.4((b)(1)

This section should reference availability of an online interactive calculator, when the calculator becomes available. Or, the calculator reference could be included in Appendix B. The required plant factors includes a reference to other resources which must be approved by DWR. Is this a process developed in separate DWR administrative regulations or will a database be developed for users for verifying that the plant factors sources are approved by DWR?

Soil Management Report. Section 492.5

- Due to the changes proposed in application of MWELo, the soil sample test requirements will apply to smaller landscaped areas and larger numbers of single-family homes. Although as part of the MWELo, it is assumed that the soil sampling would be for purposes of optimizing plant needs. However, the components of the soil analysis are not required items due to the “may include” phrase. Is a test for amount of organic matter a requirement for purposes of Section 492.6(a)(3)(C) or is the percent of soil organic matter determined by a different method? Are the soil test recommendations a requirement for determining what components, e.g., pH, salinity, infiltration rate, need for amendment, or are suitable for a certain assemblage of landscape plants? Also, since the test results would be submitted as part of the Certificate of Completion, it seems that additional tests would be required for grading purposes, e.g., potential for erosion, load bearing capacity, etc. Lastly, would the costs for these tests be beneficial for a 500 square-foot landscaped area?

Landscape Design Plan. Section 492.6(a)(1)(C)(3), 492.6(a)(1)(F), 492.6(a)(3)(A), 492.6(a)(3)(G)

- This portion of the MWELo discusses solar orientation of plants to maximize summer shade and winter solar gain. A note should be included referencing the Energy Code requirement (Section 110.10) for solar zones on roofs of newly constructed buildings for purposes of creating an area for future installation of photovoltaic systems. Plants that would shade these designated solar zones should be avoided especially if future installation of rooftop photovoltaic systems are planned.
- Subsection (F) proposes that any turf in parkways be irrigated by sub-surface irrigation or by “other technology.” Use of the phrase “other means” that “prevents overspray or runoff” may be more appropriate.
- Subsection (A) requires compacted soils to be transformed to a friable condition. This section should clarify reference to compacted soils in “planned landscape areas” since other soils may be compacted for load bearing purposes.
- Subsection (G) provides a somewhat confusing and verbose discussion of mulch requirements. It is unclear what the term “ecologically possible” means. The type of mulch should be suitable for the use of the area, type of plants and area characteristics (slope).

Irrigation Design Plan. Section 492.7(a), 492.7(a)(1)(A), 492.7(a)(1) and (2), 492.7(a)(1)(G)

- The defined term is “landscape area” so it should be used consistently within the MWEL0.
- Subsection (A) should be clarified to apply to either an aggregate area or to each building (water service). Clarification should also be provided on the text “5,000 sq. ft. or greater” since it could be interpreted that water meters are not needed for areas greater than 5,000 square feet. Perhaps the application should reference “all non-residential areas 1,000 square feet or greater.”
- Subsections (1) and (2) provide options for types of water meters. Although fiscal impacts are not required for this stage of draft regulations, some information on the cost of these meters, including connection costs, will be helpful. In addition, are there any standards for private water meter installation, reading, or maintenance?
- Subsection (G) requires flow sensors for detecting high flow conditions created by system damage or malfunctions. At what point in the supply system are the sensors required – at the service or somewhere else in the supply line?

Grading Design Plan. Section 492.8(a)(2)(A)

- Subsection (A) recommends that project applicants grade areas so irrigation and rainfall remain within property lines and does not drain onto non-permeable hardscapes. This has potential conflict with building standards in the California Building Code (Section 1804.3 and Appendix J) and the California Residential Code Section R401.3. These sections address grading of building sites and requirements for sloping of surfaces, including impervious surfaces, away from building foundations.

Irrigation Scheduling. Section 492.10

- This section addresses irrigation scheduling largely regulated by automatic irrigation controllers using current reference evapotranspiration data or soil moisture sensor data. In light of current watering restrictions in many jurisdictions, an exception should be considered to accommodate watering on designated schedules as permitted by the local enforcing agency.

Irrigation Efficiency. Section 492.13

- See comments related to definition of “Irrigation Efficiency” in Section 491.

Graywater Systems. Section 492.15

- See comments related to gray water on Page 2.

Stormwater Management and Rainwater Retention. Section 492.16(e)

- Although not a requirement, the text in this section is highly technical. Would the appropriate water holding capacity or infiltration rate come from the soil analysis report after soil amendment has taken place and for the areas of water retention?

SHL thanks the Department of Water Resources for the opportunity to comment on the proposed changes to the MWELo. Because of regulatory nature of the MWELo, many of SHL's comments focus on areas that are unclear for purposes of implementation or enforcement. If you have any questions on our comments, please feel free to contact the SHL Program:

Kyle Krause, Codes & Standards Administrator I (916) 263-4719
Emily Withers, Codes & Standards Administrator II (916) 263-2998

Sincerely,



Kyle Krause
Codes and Standards Administrator I
State Housing Law Program
Department of Housing and Community Development