

# Comments on Model Landscape Ordinance

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## 1. Page 4: Section 491 (I)

After "(Eppt) means the portion", I'd add "(25%)" to greater clarify what portion of total precipitation is considered.

~~(I)(H)~~ "effective precipitation" or "usable rainfall" (*Eppt*) means the portion (25%) of total precipitation that is used by the plants. ~~Precipitation is not a reliable source of water, but can contribute to some degree toward the water needs of the landscape.~~

## 2. Page 5: Please see comments from Doug Johnson at Cal-IPC relating to Section 491(x)

TreePeople supports the comments from Doug Johnson, Executive Director of Cal-IPC, whose words are:

*"I am writing to comment on the modified text of the Model Water Efficient Landscape Ordinance. Specifically, our organization is interested in strengthening language defining invasive plants and discouraging their use. Section 491(x) defines "invasive plant species" as "species of plants that have a tendency to colonize open spaces, riparian corridors and other sensitive habitats." This should more accurately read "species of plants not historically found in California that spread outside cultivation and that damage environmental or economic resources." The section should reference (1) the California Invasive Plant Inventory (maintained by our organization as a list of the non-native plant species that have been shown to have significant ecological impacts in the state—see [www.cal-ipc.org/ip/inventory/index.php](http://www.cal-ipc.org/ip/inventory/index.php)), and (2) state and federal noxious weed lists. Because a later section references "noxious plant species" it would be useful to amend the sentence here that reads "Invasive species may be regulated by county agricultural agencies" by adding "as 'noxious' species." (For future reference, note also that the state's newly created Invasive Species Council, chaired by the CA Department of Food & Agriculture, intends to develop comprehensive lists of invasive species in California.)*

*Section 492.6(a)(1)(F) recommends "The use of invasive and/or noxious plant species is discouraged." We suggest adding "strongly" before "discouraged." We work with a diverse range of partners, including industry, on preventing additional introduction of invasive plants through horticulture, and the model ordinance should provide clear and solid support for this effort.*

*Sincerely,  
Doug Johnson"*

## 3. Page 5: Section 491(z) – Irrigation Efficiency

This section talks about the minimum average of irrigation efficiency being 0.71. Which is fine, but there is great variability. I propose adding these average irrigation efficiency ratings to be used in the formula for Estimated Total Water Use (ETWU):

**The following table of average irrigation efficiency ratings may be used:**

<b>Irrigation Type</b>	<b>Efficiency</b>
Drip, standard	.8
Drip, pressure-compensated	.95
Fixed spray	.75
Micro spray	.8
Rotator	.8

## 4. Pages 13 & 14: Section 492.4 – Maximum Applied Water Allowance

**And elsewhere the formula and Landscape area are used - Section 493.1 and 494**

The way the formula is written is unclear. I propose adding some parenthesis for clarification. Also by changing LA (Landscape Area) to TLA (Total Landscape Area) further defines that SLA (Special Landscape Areas) are a part of the TLA.

TLA = Total Landscape Area (square feet), includes SLA

MAWA =  $ET_o \times 0.62 \times [(0.7 \times TLA) + (0.3 \times SLA)]$

### 5. Page 15 & 16 Estimated Water Use (ETWU)

The various Irrigation Efficiencies (IE) are not currently considered in the ETWU formula, only the low end of the scale (.71). Although this will limit the amount of water that anyone can use, it doesn't take into consideration (for instance) how much more efficient a compensated drip system is compared to a spray head!

Since each Plant Factor (PF) will need to be divided by the irrigation efficiency (IE) of its Hydrozone Area (HA), I believe the formula should be thus:

$ETWU = \text{Sum} [(HA\#1 \times ET_o \times (PF/IE) \times 0.62) + (HA\#2 \times ET_o \times (PF/IE) \times 0.62) \dots + (SLA \text{ square feet} \times ET_o \times 1.0 \times 0.62) + (\text{waterfeature square feet} \times ET_o \times 1.0 \times 0.62)]$

### 6. Pages 31: Section 494

*Effective Precipitation (Eppt).*

Eppt can further be defined as:

**$Eppt = TLA \times \text{annual precipitation} \times 0.25 \times 0.62$**

The MAWA formula adjusted for Eppt should be labeled as such; "MAWA adjusted for Eppt".

$MAWA \text{ adjusted for Eppt} = [(ET_o \times 0.62 \times 0.7 \times TLA) + (ET_o \times 0.62 \times 0.3 \times SLA)] - [TLA \times \text{annual precipitation} \times 0.25 \times 0.62] = MAWA - Eppt$

### 6. Page 35:

#### SECTION B. WATER BUDGET CALCULATIONS

##### Section B1. Maximum Applied Water Allowance (MAWA)

Use this formula for MAWA

$MAWA = [(ET_o \times 0.62 \times 0.7 \times TLA) + (ET_o \times 0.62 \times 0.3 \times SLA)]$

Change LA to TLA (Landscape Area to Total Landscape Area) and say that it includes waterfeatures!

*Effective Precipitation (Eppt) =  $TLA \times \text{annual rainfall} \times .25 \times 0.62$*

Use the following equation to calculate the adjusted Maximum Applied Water Allowance:

$MAWA \text{ adjusted for Eppt} = MAWA - EPPT \times (ET_o - Eppt) \times (0.62) \times [0.7 \times LA + 0.3 \times SLA]$

**Eppt adjusted Maximum Applied Water Allowance = \_\_\_\_\_ gallons**

Show calculations.

### 7. Page 36: To further define and clarify the ETWU....

#### Section B2. Estimated Total Water Use (ETWU)

The project's Estimated Total Water Use is calculated using the following formula:

$$ETWU = \text{Sum: } [(HA \#1 \text{ Sq.Ft.} \times ETo \times (PF \div IE) \times .62) + (HA\#2 \text{ Sq. ft.} \times ETo \times (PF \div IE) \times .62) \dots + (SLA \text{ Sq.Ft.} \times ETo \times 1 \times .62) + (\text{Waterfeature Sq. Ft.} \times ETo \times 1 \times .62)]$$

where:

ETWU = Estimated total water use per year (gallons)

ETo = Reference Evapotranspiration (inches)

PF = Plant Factor from WUCOLS (see Section 491)

HA = Hydrozone Area ~~[high, medium, and low water use areas]~~ (square feet)

SLA = Special Landscape Area (square feet)

0.62 = Conversion Factor

IE = Irrigation Efficiency ~~(minimum 0.71)~~

**Hydrozone Table for Calculating ETWU**

**Please complete the hydrozone table(s). Use as many tables as necessary.**

<u>Hydrozone #</u>	<u>Area (square feet)</u>	<u>ETo</u>	<u>Plant Factor (PF)</u>	<u><del>Plant Water Use</del> Types Irrigation Efficiency (IE)</u>	<u><del>0.62</del> (convert to gallons)</u>	<u>Sq Ft. x ETo x (PF ÷ IE) x 0.62</u>
					<u>0.62</u>	
					<u>0.62</u>	
					<u>0.62</u>	
					<u>0.62</u>	
					<u>0.62</u>	
<u>SLA</u>			<u>1</u>	<u>---</u>	<u>0.62</u>	
<u>Waterfeature</u>			<u>---</u>	<u>---</u>	<u>0.62</u>	
<b><u>ETWU = Sum of Hydrozones + SLA + Waterfeature</u></b>						