

MWEO

From: Yee Lee-Wolfe [YeeLW@wallacegroup.us]
Sent: Monday, December 22, 2008 5:01 PM
To: MWEO
Cc: Robert Desmond; Ann Sever; John Wallace
Subject: Review Comments to the Modified Text of Title 23, Sections 490-495
Attachments: T23_S490-495_comments_.pdf

Attention: Mr. Simon Eching:

Attached please find a copy of the Modified Model Water Efficient Landscape Ordinance with my review comments. Please excuse the document being upside down because of the dog-eared corner from the clip, I had to scan it that way. Below are some of my general comments:

- Comment 018.1 1. An “enforceable” efficient landscape ordinance is much needed and commendable. As landscape architects, we are all for it. The only caveat is that we will need to educate our clients on a whole new set of requirements that will cost them extra in compliance because of additional services required from landscape architects/contractors, irrigation designers, irrigation auditors, etc. The trade off is that there is money saved in the future from all the water conservation.
- Comment 018.2 2. As designers the ordinance will make our role more important for many project, but we have a concern with increased liability this ordinance may cause. There are so many factors beyond our control that can affect the outcome of a landscape project even though we may have designed it to meet the strict requirements and regulations. A landscape project is full of non-static conditions even if the design complies with the precise limits of water budget. Water budgets and total water use are at best estimates. Who gets penalized when the future water analyses and water audits fail to meet the design’s original figures?
- Comment 018.3 3. I perceive potential loopholes in the text. For example, under S490.1 Applicability—Projects of the type and size covered by this ordinance in communities that do not specifically “require” a “building or landscape permit, plan check, or design review...” of such a project would not need to comply...?
- Comment 018.4 4. Many local agencies don’t have the staff who can do the “plan check” for compliance. With the fiscal issues of most communities in California, is implementation of the ordinance in jeopardy? One way would be for private professionals to offer this service to the local agencies and they in turn charge an extra fee for outside plan check service.
- Comment 018.5 5. The ordinance’ definition of “landscape area” is really “planting areas” for a project site. This is not consistent with the definition of “landscape area” in site planning by architects, landscape architects, engineers, and planners. Our definition for this term encompasses all the non-building areas that can be developed for landscape planting, hardscape, outdoor structures and spaces, open space, etc. that make up the “landscape” for a project site.
- Comment 018.6 6. The ordinance could benefit a lot from an “Abbreviations” section ahead of the “Definitions” Section 491. It’d be very helpful to get a glimpse of what all the abbreviations stand for and read the definitions under each term in Section 491. Also the definitions in turn need to put the abbreviations in parentheses.
- Comment 018.7 7. Section 492.1 needs clarifications. The Certificate of Completion, the Landscape Documentation Package, and record drawings should be submitted after project completion, not after plan approval by the local agency.
- Comment 018.8 8. Another requirement that makes for difficult compliance by the Landscape Architect during the design phase, is the Soil Management Plan required for the Landscape Documentation Package—this cannot be prepared until the Mass Grading of the project site is complete, but Mass Garding often times takes place after the Landscape Architect needs to submit plans for local agency approval.
- Comment 018.9 9. The Soil Report needs to test for additional soil characteristics, such as boron & other toxic materials, heavy metals, fertility, etc. that are critical for plant health and amendment specifications.
- Comment 018.10 10. Section 493.1 (a) & (a1), recommend rephrasing the clause this way for clarity: For all existing landscapes that are one acre or more and installed before...”

Please refer to the attached document for additional comments. Thank you for this opportunity to provide in-put. Please contact me if you have questions.

Reviewed by yee sen lee-waffe
Wallace Group RLA 1631
yee.lw@wallacegroup.us.
Dec. 22, 2008



(Excludes Appendices)

State of California Department of Water Resources
Office of Water Use Efficiency and Transfers
P.O. Box 942836
Sacramento CA 94236-0001

California Code of Regulations Title 23, Sections 490 - 495 regarding the
Model Water Efficient Landscape Ordinance

NOVEMBER 26, 2008

MODIFIED TEXT OF PROPOSED REGULATION

- Existing text of the regulation is displayed in plain type.
- Text proposed to be added for the 45-day public comment period (Feb/Mar 2008) is displayed in *italic* type.
- Text proposed to be deleted for the 45-day public comment period (Feb/Mar 2008) is displayed in ~~strikeout~~ type.
- Modified text to be added for the extended (34-day) public comment period (Nov/Dec 2008) is displayed in *italicized double underline* text.
- Modified text to be deleted for the extended (34-day) public comment period (Nov/Dec 2008) is displayed in ~~double-strikeout~~ text.

NOTE: For the extended (34-day) public comment period (Nov/Dec 2008), comments are limited only to the Modified Text of Proposed Regulation indicated as *italicized double underline* and ~~double-strikeout~~. If you have comments on the Modified Text of Proposed Regulation, DWR will accept written comments between November 26, 2008 and December 30, 2008. All written comments must be submitted to DWR no later than 5:00 p.m. on December 30, 2008 by email mweo@water.ca.gov or by postal mail:

Department of Water Resources
Office of Water Use Efficiency and Transfers
Attn: Simon Eching
Post Office Box 942836
Sacramento, CA 94236-0001

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It is for reviewing purposes only.

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California Code of Regulations
Title 23. Waters
Division 2. Department of Water Resources
Chapter 2.7. Model Water Efficient Landscape Ordinance

§490. Purpose.

~~±~~ (a) The State Legislature has found:

- ~~(a)~~ (1) that the limited supply of state waters are subject to ever increasing demands; ~~±~~ the waters of the state are of limited supply and are subject to ever increasing demands;
- ~~(b)~~ (2) that the continuation of California's economic prosperity depends on adequate supplies of water being available for future uses; ~~±~~ the continuation of California's economic prosperity is dependent on adequate supplies of water being available for future uses;
- ~~(c)~~ (3) that state policy promotes conservation and efficient use of water and to prevent waste of this valuable resource; ~~±~~ it is the policy of the state to promote the conservation and efficient use of water and to prevent the waste of this valuable resource;
- ~~(d)~~ (4) that landscapes provide recreation areas, clean the air and water, prevent erosion, offer fire protection, and replace ecosystems displaced by development; and ~~±~~ landscapes are essential to the quality of life in California by providing areas for active and passive recreation and an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development;
- ~~(e)~~ (5) that ~~±~~ landscape design, installation, maintenance and management can and should be water efficient; and
- ~~(f)~~ (6) Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use.

~~±~~ (b) Consistent with the legislative findings, the purpose of this model ordinance is to:

- ~~(a)~~ (1) promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
- ~~(b)~~ (2) establish a structure for *planning*, designing, installing, and maintaining, and managing water efficient landscapes in new *construction and rehabilitated* projects; and
- ~~(c)~~ (3) establish provisions for water management practices and water waste prevention for established existing landscapes; (4) use water efficiently without waste by setting a Maximum Applied Water Allowance as an upper limit for water use and reduce water use to the lowest practical amount;
- (5) promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;
- (6) encourage local agencies and water purveyors to use economic incentives that promote the efficient use of water, such as implementing a tiered rate structure; and
- (7) encourage local agencies to designate the necessary authority that implements and enforces the provisions of the Model Water Efficient Landscape Ordinance or its local landscape ordinance.

Note: Authority cited: Sections 65591.5, 65594, Gov. Code. Reference: Sections 65591, 65591.5, 65597, Gov. Code. Note: Authority cited: Section ~~65595~~ 65593, Gov. Code. Reference: Sections 65591, ~~65592~~, 65593, ~~65594~~, ~~65595~~, 65596, Gov. Code.

~~§490.1. Scope.~~

~~(1.) This ordinance applies to all local agencies, cities or counties including charter cities and charter counties. On or before January 1, 2010, a local agency shall adopt one of the following:~~

~~(a) A water efficient landscape ordinance that is at least as effective in conserving water as this ordinance; or~~

~~(b) This updated ordinance.~~

~~(2.) If a local agency has not adopted an ordinance, on or before January 1, 2010, the ordinance adopted by the State of California Department of Water Resources shall apply within the jurisdiction of the local agency as of that date, shall be enforced by the local agency, and shall have the same force and effect as if adopted by the local agency.~~

~~(3.) Nothing in this ordinance shall be construed to require the local agency's water efficient landscape ordinance to duplicate, or conflict with, a water efficiency program or measure implemented by a public water system, as defined in Section 116275 of the Health and Safety Code, within the jurisdiction boundaries of the local agency.~~

~~Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65591, 65592, 65595, Gov. Code.~~

~~§ 490.2. Intent.~~

~~The intent of this ordinance is to guide local agencies to:~~

~~1. use water efficiently without waste by setting a Maximum Applied Water Allowance as an upper limit for water use and reduce water use to the lowest practical amount;~~

~~2. develop mechanisms to implement and enforce the ordinance;~~

~~3. incorporate the criteria and specifications of the ordinance in the bidding and contracting processes of their own landscape projects;~~

~~4. develop a water use efficiency education program that seeks to educate water users in their area;~~

~~5. promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;~~

~~6. coordinate with the local retail water purveyor to implement a tiered rate structure as an economic incentive for water use efficiency; and~~

~~7. encourage licensing and certification programs by professional trade organizations and other educational organizations that promote water use efficiency and best management practices.~~

~~Note: Authority Cited: Sections 65995, Gov. Code. Reference: Sections 65591, 65593, 65595, 65596, Gov. Code.~~

~~§ 490.3. § 490.1. Applicability.~~

~~(a) APPLICABILITY~~

~~(1) Except as provided in Section 492 (a) (3), this section shall apply to: (A) all new and rehabilitated landscaping for public agency projects and private development projects that require a permit; and (B) developer-installed landscaping in single family and multi-family projects.~~

~~¶ (a) After January 1, 2010, this ordinance shall apply to all of the following landscape projects:~~

loop hole!

- (a) (1) new construction and rehabilitated landscapes for public agency projects and private development projects with a total project landscape area equal to and or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;
 - (b) (2) new construction and rehabilitated landscapes which are developer-installed in single-family and multi-family residential projects with a total project landscape area equal to and or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;
 - (c) (3) new construction and rehabilitated landscapes which are homeowner-provided and/or homeowner-hired landscaping in single-family and multi-family residential projects with a total project landscape area equal to and or greater than 2,500 5,000 square feet requiring a building or landscape permit, plan check, or design review;
 - (d) (4) existing landscapes with a landscape area equal to or greater than 2,500 square feet are limited to Section 493.1; and
 - (e) (5) cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Sections 492.6, 492.13, 492.14 and 492.18 492.4, 492.11, and 492.12; and existing cemeteries are limited to Section 493.1.
- (2) Projects subject to this section shall conform to the provisions in Section 492.
- (3) This section shall (b) This ordinance does not apply to:
- (a) homeowner-provided and homeowner-hired landscaping at single-family and multi-family residential projects less than 2,500 square feet;
 - (b) cemeteries;
 - (c) (1) registered local, state or federal historical sites;
 - (d) (2) ecological restoration projects that do not require a permanent irrigation system;
 - (e) (3) mined-land reclamation projects that do not require a permanent irrigation system; or
 - (f) any project with a landscaped area less than 2,500 square feet.
- (4) botanical gardens and arboretums open to the public.

Are there communities that don't regulate & require landscape plans for any project does are? attempt.

what about language to encourage conservation?
ETAF, ETWU, WUCOL, MWA, etc)

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections ~~65591, 65592, 65595, 65596~~, Gov. Code.

§ 491. Definitions.

The words terms used in this ordinance have the meaning set forth below:

- (1) "application rate" means the depth of water applied to a given area, measured in inches per minute, or inches per hour, or gallons per hour.
- (2) (a) "applied water" means the portion of water supplied by the irrigation system to the landscape.
- "Automatic controller" means a mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application.
- (3) (b) "backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- (4) (c) "check valve" or "anti-drain valve" means a valve located under a sprinkler head or other location in the irrigation system to hold water in the system so it to prevent minimizes drainage from the lower elevation sprinkler heads sprinkler heads when the system is off.
- (5) (d) "conversion factor (0.62)" means a the number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year. The conversion factor is calculated as follows: (325,851 gallons/43,560 square feet)/12 inches = (0.62) 325,851

gallons = one acre foot 43,560 square feet = one acre 12 inches = one foot To convert gallons per year to 100 cubic feet per year, another common billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet.)

~~(6.)~~ (e) "Certificate of Completion" means the document required under Section ~~492.2 and 492.11~~ 492.9.

~~(7.)~~ (f) "certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited educational institution or a professional trade organization ~~or other educational organization~~.

~~(8.)~~ (g) "certified irrigation designer" means a person certified to design irrigation systems by an academic institution or a professional trade organization ~~or other educational organization~~.

~~(9.)~~ (h) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1353.8.

~~(10.)~~ (i) "controller" means an automatic timing device used to remotely control valves ~~or heads~~ to set an irrigation schedule. A weather-based controller is a controller that uses evapotranspiration or weather data. A self-adjusting irrigation controller is a controller that uses sensor data (i.e., soil moisture sensor).

~~(11.)~~ (j) "drip irrigation" means any non-spray low volume irrigation system utilizing emission devices with a flow rate equal to or less than two (2) gallons per hour.

~~(12.)~~ (k) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

~~(13.)~~ (l) "effective precipitation" or "usable rainfall" means the portion of total precipitation that is used by the plants. ~~Precipitation is not a reliable source of water in summer, but does contribute towards the water needs of the landscape during the remainder of the year.~~

~~(14.)~~ (m) "emitter" means a drip irrigation fitting emission device that delivers water slowly from the system to the soil, ~~measured as gallons per hour~~.

~~(15.)~~ (n) "established landscape" means the point at which plants in the landscape have developed *significant roots growth* into the site ~~adjacent to the root ball~~. Typically, most plants are established after one or two years of growth.

~~(16.)~~ (o) "establishment period of the plants" means the first year after installing the plant in the landscape ~~or the first two years if irrigation will be terminated after establishment~~.

~~(17.)~~ "Estimated Applied Water Use" means the portion of the Estimated Total Water Use that is derived from applied water, ~~as described in Section 492.6~~. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance. The Estimated Applied Water Use may be the sum of the water recommended through the irrigation schedule, as referenced in Section 492 (e) (3).

~~(18.)~~ (p) "Estimated Total Water Use" ^{per day, per year?} means the annual total amount of water estimated to be needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants, and the efficiency of the irrigation system, as described in Section 492 (e) (4) 492.6 the total water used for the landscape as described in Section 492.4. (ETOU)

~~(19.)~~ (q) "ET adjustment factor" means a factor of ~~0.8~~ 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ET Adjustment Factor, the ~~average~~ irrigation efficiency is ~~0.625~~ 0.71. Therefore, the ET

(ETAF)

(ETAF)

Adjustment Factor ~~(0.8) = (0.50/0.625)~~ (0.7) = (0.5/0.71). ET Adjustment Factor for a Special Landscape Area should not exceed 1.0.

~~(20)~~ (r) "evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

~~(21)~~ (s) "flow rate" means the rate at which water flows through pipes, and valves, ~~or~~ and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

~~(22)~~ (t) "hardscapes" means any durable surface material (pervious and non-pervious).

(u) "homeowner provided landscaping" means landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner.

~~(23)~~ (v) "hydrozone" means a portion of the landscaped area having plants with similar water needs, ~~that are served by a valve or set of valves with the same irrigation schedule.~~ A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone. A hydrozone may also be irrigated or non-irrigated (no irrigation schedule).

~~(24)~~ (w) "infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (~~i.e. e.g.~~, inches per hour).

(x) "irrigation audit" means an in depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity and verification of minimal overspray or run off that causes overland flow; and preparation of an irrigation schedule.

~~(25)~~ (y) "irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this ordinance is ~~0.625~~ 0.71.

(z) "irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

(aa) "irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.

~~(26)~~ (bb) "Landscape Documentation Package" means the documents required under Section ~~492.5~~ 492.3.

~~(27)~~ (cc) "landscape area" (u) "landscaped area" means the entire parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscapes such as decks and patios, and other non-porous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants, such as orchards or vegetable gardens are not included. means all of the irrigated planting areas, and turf areas, and water features, ~~and up to 10% of the square footage of pervious non-irrigated planting areas in a landscape design plan subject to the Maximum Applied Water Allowance (MAWA) calculation. The 10% of non-irrigated planting area shall be added to the low water use hydrozone area, used in the Landscape Documentation Package. The following is not included in the landscape area: The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (i.e. e.g., open spaces and existing native vegetation). Designated recreation areas and areas permanently and solely dedicated to edible plants such~~

Plantscape (softscape) + water features
Excludes Hardscape.
Not necessary consistent w/ Planning Depts' definitions

~~as orchards and vegetable gardens are subject to the MAWA with an ET adjustment factor not to exceed 1.0.~~

~~(28.) (dd)~~ "landscape architect" means a person who holds a license to practice landscape architecture in the State of California under the authority of (Government Code Section 5615) (Landscape Architects Practice Act).

~~(29.) (ee)~~ "landscape contractor" means a person licensed ~~(i.e. with a valid C-27 license)~~ by the State to construct, maintain, repair, install, or subcontract the development of landscape systems and facilities ~~per~~ (Business and Professions Code, Section 7058 and 7059).

~~(30.)~~ "landscape irrigation audit" means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.

~~(31.) (ff)~~ "landscape project" means total area of landscape in a project as defined in "landscape area", for the purposes of this ordinance, meeting the requirements under Section 490.3.

~~(32.) (gg)~~ "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

~~(33.) (hh)~~ "local agency" means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. ~~A local agency is the entity responsible for the approval of a permit, plan check, and design review for a project. The local agency is also responsible for the enforcement of this ordinance, including but not limited to, approval of a permit and plan check or design review of a project.~~

~~(34.) (ii)~~ "local water purveyor" means any entity, including a public agency, city, county or private water company that provides retail water service.

~~(jj)~~ "low volume irrigation" means any irrigation system with a flow rate equal to or less than 0.75 inches per hour, including drip irrigation, subsurface drip, micro-sprinklers and similar irrigation type. the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

~~(35.) (kk)~~ "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

~~(36.) (ll)~~ "Maximum Applied Water Allowance" means, for design purposes, the upper limit of annual applied water for the established landscaped area as specified in Section 492.6 492.4. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscaped area. The Estimated Applied Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ET adjustment factor not to exceed 1.0.

~~(37.) (mm)~~ "microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as: wind, sun exposure, plant density, or proximity to reflective surfaces, ~~etc.~~

~~(38.) (nn)~~ "mined-land reclamation projects" means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

~~(39.) (oo)~~ "mulch" means any organic material such as leaves, bark, ~~and~~ straw or ~~other~~ inorganic mineral ~~mulches~~ materials such as rocks, gravel, and decomposed granite left loose and applied

Allowed
#20 Budget

to the soil surface for the beneficial purposes of reducing evaporation ~~and~~ suppressing weeds, moderating soil temperature, and preventing soil erosion.

(40.) (pp) "operating pressure" means the pressure at which an irrigation system of sprinklers is designed by the manufacturer to operate, usually indicated at the base of a sprinkler.

(41.) (qq) "overhead sprinkler irrigation systems" means those systems with high flow rates that deliver water through the air (~~i.e. e.g., pop ups, impulse sprinklers, spray heads and rotors, etc.~~).

(42.) (rr) "overspray" means the water which is delivered beyond the landscaped target area and causes overland flow during irrigation events onto non-targeted areas such as, wetting pavements, walks and structures, or other non-landscaped non-targeted areas.

(ss) "pervious" means any surface or material that allows the passage of water through the material land into the underlying soil.

(tt) "permit" means any permit issued by local agencies for new building or rehabilitated landscapes.

(43.) (uu) "plant factor" or "plant water use factor" means a factor that, ~~in combination with irrigation efficiency,~~ when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this ordinance, the average plant factor of low water use ing plants ranges from 0 to 0.3, for average moderate water use ing plants the ranges is 0.4 to 0.6, and for high water use ing plants the range is 0.7 to 1.0. For purposes of this ordinance, the plant factor range of for low water use plants ranges from is 0 to 0.3, the plant factor range of for moderate water use plants ranges from is 0.4 to 0.6, and the plant factor range of for high water use plants ranges from is 0.7 to 1.0. Plant factors cited in this ordinance are derived from WUCOLS (Water Use Classification of Landscape Species).

(44.) (vv) "precipitation rate" means the rate of application of water measured in inches per hour.

(45.) (ww) "project applicant" means the individual or entity submitting a Landscape Documentation Package required under Section 492.5 492.3, to request a permit, plan check, or design review from the local agency. A project applicant may be the property owner or his/her designee.

(46.) (xx) "rain sensor" or "rain sensing shutoff device" means a system which a component which automatically shuts off ~~suspends~~ the irrigation system event when it rains.

(47.) (yy) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

(48.) (zz) "recreational area" means ~~areas dedicated to active play or recreation such as parks, playgrounds, sports fields, golf courses, school yards, picnic grounds, or other areas with intense foot traffic.~~ means portions of areas dedicated to active play such as parks, playgrounds, sports fields, golf courses, or school yards in public and private projects where turf provides a playing surface or serves other high use recreational purposes pedestrian traffic area.

(49.) (aaa) "recycled water," "reclaimed water," or "treated sewage effluent water" means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

(50.) (bbb) "reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is given in inches per day, month, or year as represented in Section 495, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool season turf that is well watered. Reference

landscapes

irrig by overhead irrig. systems
what about application for low flow systems @ G.P.H.

- ~~(b) upon project installation, have a licensed landscape architect or licensed landscape contractor conduct a final field observation for the approval of the certificate;~~
- ~~(c) upon project installation, have a certified irrigation auditor conduct a landscape irrigation audit as required under Section 492.14;~~
- ~~(d) submit the signed Certificate of Completion to the local agency for approval;~~
- ~~(e) receive the Certificate of Occupancy or equivalent from the local agency; and~~
- ~~(f) submit copies of the approved Certificate of Completion to the local retail water purveyor and the property owner or his/her designee;~~

~~Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65593, 65595, 65596, 65599, Gov. Code.~~

~~§492.3. Waivers and Variances.~~

~~A local agency may administratively waive or modify one or more requirements of the ordinance when unusual difficulties make their strict application impossible, and upon a determination that the waiver or variance is consistent with the purpose and intent of the ordinance.~~

~~Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65593, 65595, 65596, 65599, Gov. Code.~~

~~§492.4. §492.2. Penalties.~~

- ~~(a) A local agency may establish and administer penalties to the project applicant for non-compliance with the ordinance, including, but not limited to, to the extent permitted by law.~~
- ~~1. deny Certificate of Occupancy or equivalent until the Certificate of Completion has been submitted, reviewed, and approved by the local agency;~~
 - ~~2. issue warning letters or citations;~~
 - ~~3. impose and collect monetary penalties or fines;~~
 - ~~4. administer an appeals process or equivalent; or~~
 - ~~5. terminate water service.~~

~~Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65593, 65596, 65599, Gov. Code.~~

~~(b) LANDSCAPE DOCUMENTATION PACKAGE~~

- ~~(1) A copy of the landscape documentation package conforming to this chapter shall be submitted to the city or county. No permit shall be issued until the city or county reviews and approves the landscape documentation package.~~
- ~~(2) A copy of the approved landscape documentation package shall be provided to the property owner or site manager along with the record drawings and any other information normally forwarded to the property owner or site manager.~~
- ~~(3) A copy of the Water Conservation Concept statement and the Certificate of Substantial Completion shall be sent by the project manager to the local retail water purveyor.~~
- ~~(4) Each landscape documentation package shall include the following elements, which are described in Section 492 (c):~~
 - ~~(A) Water Conservation Concept Statement~~
 - ~~(B) Calculation of the Maximum Applied Water Allowance~~
 - ~~(C) Calculation of the Estimated Applied Water Use~~

Good Enforcement tool

(D) Calculation of the Estimated Total Water Use

(E) Landscape Design Plan

(F) Irrigation Design Plan

(G) Irrigation Schedules

(H) Maintenance Schedule

(I) Landscape Irrigation Audit Schedule

(J) Grading Design Plan

(K) Soil Analysis

(L) Certificate of Substantial Completion. (To be submitted after installation of the project.)

(5) If effective precipitation is included in the calculation of the Estimated Total Water Use, then an Effective Precipitation Disclosure Statement from the landscape professional and the property owner shall be submitted with the Landscape Documentation Package.

(e) Elements of Landscape Documentation Package

(1) Water Conservation Concept Statement

Each landscape documentation package shall include a cover sheet, referred to as the Water Conservation Concept Statement similar to the following example. It serves as a check list to verify that the elements of the landscape documentation package have been completed and has a narrative summary of the project.

Sample Water Conservation Concept Statement

Project Site:

Project Number:

Project Location:

Landscape Architect/Irrigation Designer/Contractor:

Included in this project submittal package are: (Check to indicate completion) 1. Maximum

Applied Water Allowance: _____ gallons or cubic feet/year

2. Estimated Applied Water Use: _____ gallons or cubic feet/year

*2.(a) Estimated Amount of Water Expected from Effective Precipitation: _____ gallons or cubic feet/year

3. Estimated Total Water Use: _____ gallons or cubic feet/year

Note: * If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in Section 494 shall be completed and submitted.

4. Landscape Design Plan

5. Irrigation Design Plan

6. Irrigation Schedules

7. Maintenance Schedule

8. Landscape Irrigation Audit Schedule

9. Grading Design Plan

10. Soil Analysis

Description of Project (Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.) Date: _____ Prepared By: _____

~~§492.5.~~ **§492.3. Elements of the Landscape Documentation Package.**

~~(1)~~ (a) The Landscape Documentation Package shall include ~~all~~ of the following six (6) elements:

(a) ~~Water Efficient Landscape Worksheet~~

- ~~(1) Section A Project Information and Checklist~~
- ~~(2) Section B Water Use Efficiency Statement~~
- ~~(3) Section C Water Budget Calculation~~
- ~~(A) Section C1 Maximum Applied Water Allowance (MAWA)~~
- ~~(B) Section C2 Estimated amount of water expected from Effective Precipitation (Eppt)~~
- ~~(C) Section C3 Estimated Water Use (EWU) for Hydrozones and Estimated Total Water Use (ETWU)~~
- ~~(D) Section C4 Estimated Applied Water Use (EAWU)~~
- ~~(1) Section D Hydrozone Information~~
- ~~(A) Section D1 Hydrozone Map~~
- ~~(B) Section D2 Hydrozone Table~~
- ~~(C) Section D3 Hydrozone Calculation Summary~~

(1) Project Information:

- (A) Date;
- (B) Project Applicant;
- (C) Project Address including parcel and lot number(s);
- (D) Total landscape area (sq. ft.);
- (E) Project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed);
- (F) Water supply type (e.g., potable, recycled, well);
- (G) Checklist of all documents in Landscape Documentation Package;
- (H) Project contacts to include contact information for the Project Applicant and Property Owner; and
- (I) Applicant signature and date with statement "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package."

(2) Water Efficient Landscape Worksheet:

- (A) Hydrozone Information Table
- (B) Water Budget Calculations:
 - (i) Maximum Applied Water Allowance (MAWA); and
 - (ii) Estimated Total Water Use (ETWU).
- (b) (3) Soil Management Plan;
- ~~(1) Soil Analysis Report~~
- ~~(2) On-Site Soil Assessment with Recommendations~~
- ~~(e) (4) Landscape Design Plan;~~
- ~~(d) (5) Irrigation Design Plan; and~~
- ~~(e) (6) Grading Design Plan.~~
- ~~(b) Effective Precipitation Disclosure Statement (optional)~~

~~(2.) Each element of the Landscape Documentation Package is described in Sections 492.6 through Section 492.10, and Section 494. There are also sample forms in Appendix B.~~

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections ~~65591,~~ 65596, Gov. Code.

~~§492.6.~~ **§492.4. Water Efficient Landscape Worksheet.**

(a) A project applicant shall complete the Water Efficient Landscape Worksheet which contains four (4) two sections to meet the criteria of the ordinance. See sample worksheet in Appendix B.

New to include on landscape plans

- (1) A hydrozone information table (Section A of worksheet) for the landscape project.
~~1. Section A shall contain general project information and, a checklist of the required elements.~~
~~2. Section B shall contain the Water Use Efficiency Statement which is a narrative summary of the water use efficiency practices applied in the landscape project.~~
~~3. Section C~~

(2) A water budget calculation (Section B of worksheet) for the landscape project. For the calculation of the Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU), a project applicant shall use the ETo values from the Reference Evapotranspiration Table in Section 495 Appendix A. For geographic areas not covered in Appendix A, use data from other cities located nearby in the same Reference Evapotranspiration Zone Map.

(b) Water Budget Calculations shall follow the following requirements:

(1) The plant factor used shall be from WUCOLS. The plant factor for low water use plants range from 0 to 0.3, for moderate water use plants range from 0.4 to 0.6, and for high water use plants range from 0.7 to 1.0.

(2) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in low water use hydrozone.

(3) Special Landscape Area (SLA) shall be identified and its water use calculated as described below.

(4) ETAF for Special Landscape Area shall not exceed 1.0.

~~(a) (2) The Section C1~~

(c) Maximum Applied Water Allowance (MAWA). (A) The landscape project's Maximum Applied Water Allowance shall be calculated using this formula equation:

$$MAWA = (ETo) (0.8) (LA) (0.62)$$

$$MAWA = (ETo) (0.7) (LA) (0.62)$$

$$MAWA = (ETo)(0.62)[0.7 \times LA + 0.3 \times SLA]$$

where:

MAWA = Maximum Applied Water Allowance (gallons per year)

ETo = Reference Evapotranspiration Appendix A (inches per year)

~~0.8~~ 0.7 = ET Adjustment Factor

LA = Landscaped Area includes Special Landscape Area (square feet)

0.62 = Conversion factor (to gallons per square foot)

SLA = Portion of the landscape area identified as Special Landscape Area (square feet)

0.3 = the additional ET Adjustment Factor for Special Landscape Area (1.0 - 0.7 = 0.3)

If a local agency considers Effective Precipitation (Eppt) (25% of annual precipitation) in areas where precipitation is significant, a local agency shall use the following equation to calculate Maximum Applied Water Allowance:

$$MAWA = (ETo - Eppt)(0.62)[0.7 \times LA + 0.3 \times SLA]$$

~~(B) Two example calculations of the Maximum Applied Water Allowance are presented as follows: (i) PROJECT SITE ONE: Landscaped area of 50,000 sq.ft. in Fresno.~~

where is this explained or found

The example calculations below are hypothetical to demonstrate proper uses of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are ~~historical data~~ from the Reference ETo Table in Appendix A for planning purposes only. For actual irrigation scheduling, a project applicant shall use current reference evapotranspiration (ETo) data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or use other self-adjusting devices (i.e., e.g., soil moisture sensor). ~~Also, monthly time steps are used for demonstration purposes only. A project applicant may use a time step of their choice (daily, weekly, biweekly, etc.) to complete these calculations.~~

(1) Example MAWA calculation: A hypothetical landscape project in Fresno, CA with an irrigated landscape area of 50,000 sq. ft. without any Special Landscape Area (SLA=0, no edible plants or recreational areas or use of recycled water). To calculate MAWA, the annual (ETo) value for Fresno is 51.1 inches as listed in the Reference Evapotranspiration (ETo) Table in Section 495.

$$\text{MAWA} = (\text{ETo}) (0.8) (\text{LA}) (0.62)$$

$$= (51 \text{ inches}) (0.8) (50,000 \text{ square feet}) (.62)$$

$$\text{Maximum Applied Water Allowance} = 1,264,800 \text{ gallons per year (or 1,691 hundred-cubic feet per year: } 1,264,800/748 = 1,691)$$

~~$$\text{MAWA} = (\text{ETo}) (0.7) (\text{LA}) (0.62)$$~~

~~$$\text{MAWA} = (51.1 \text{ inches}) (0.7) (50,000 \text{ square feet}) (0.62)$$~~

$$\text{MAWA} = (\text{ETo}) (0.62) [0.7 \times \text{LA} + 0.3 \times \text{SLA}]$$

$$\text{MAWA} = (51.1 \text{ inches}) (0.62) [0.7 \times 50,000 \text{ square feet} + 0.3 \times 0]$$

$$= 1,108,870 \text{ gallons per year}$$

To convert from gallons per year to hundred-cubic-feet per year:

$$= 1,108,870/748 = 1,482 \text{ hundred-cubic-feet per year}$$

$$(100 \text{ cubic feet} = 748 \text{ gallons})$$

(2) In this next hypothetical example, the landscape project in Fresno CA has the same ETo value of 51.1 inches and a total landscape area of 50,000 square feet. Within the 50,000 square foot project, there is now a 2,000 square foot area planted with edible plants. This 2,000 square foot area is considered to be a Special Landscape Area.

$$\text{MAWA} = (\text{ETo}) (0.62) [0.7 \times \text{LA} + 0.3 \times \text{SLA}]$$

$$\text{MAWA} = (51.1 \text{ inches}) (0.62) [0.7 \times 50,000 \text{ square feet} + 0.3 \times 2,000 \text{ square feet}]$$

$$= 31.68 \times [35,000 + 600] \text{ gallons per year}$$

$$= 31.68 \times 35,600 \text{ gallons per year}$$

$$= 1,127,808 \text{ gallon per year or 1,508 hundred-cubic-feet per year}$$

(ii) PROJECT SITE TWO: Landscaped area of 50,000 sq. ft. in San Francisco

$$\text{MAWA} = (\text{ETo}) (.8) (\text{LA}) (.62) = (35 \text{ inches}) (.8) (50,000 \text{ square feet}) (.62)$$

$$\text{Maximum Applied Water Allowance} = 868,000 \text{ gallons per year}$$

$$(or 1,160 \text{ hundred-cubic feet per year})$$

(C) Portions of landscaped areas in public and private projects such as parks, playgrounds, sports fields, golf courses, or school yards where turf provides a playing surface or serves other recreational purposes are considered recreational areas and may require water in addition to the Maximum Applied Water Allowance. A statement shall be included with the landscape design plan, designating recreational areas to be used for such purposes and specifying any needed amount of additional water above the Maximum Applied Water Allowance.

~~(b) Section C2 Estimated amount of water expected from Effective Precipitation (Eppt). For this ordinance, the Effective Precipitation is no more than 25 percent of the local annual mean precipitation.~~

~~(1) Example Eppt calculation: For Fresno, monthly average total precipitation (Ptot) was obtained from the California Irrigation Management Information System (CIMIS) data. In areas where precipitation amount is not significant, applicants can skip this section.~~

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Ptot	2.53	1.97	2.17	0.90	0.60	0.20	0.03	0.02	0.11	0.56	0.87	1.67	11.64
Eppt	0.63	0.49	0.54	0.23	0.15	0.05	0.01	0.01	0.03	0.14	0.22	0.42	2.91
Eppt (= 2.91 inches X 50,000 sq.ft.), inches													145,500

(4)

Estimated Total Water Use.

(A) A calculation of the Estimated Total Water Use shall be submitted with the Landscape Documentation Package. The Estimated Total Water Use may be calculated by summing the amount of water recommended in the irrigation schedule and adding any amount of water expected from effective precipitation (not to exceed 25 percent of the local annual mean precipitation) or may be calculated from a formula such as the following: The Estimated Total Water Use for the entire landscaped area equals the sum of the Estimated Water Use of all hydrozones in that landscaped area.

$$EWU = (ET_o)(PF)(HA)(.62)/(IE)$$

EWU (hydrozone) = Estimated Water Use (gallons per year)

ET_o = Reference Evapotranspiration (inches per year)

W = plant factor

HA = hydrozone area (square feet)

(.62) = conversion factor

IE = irrigation efficiency

(B) If the Estimated Total Water Use is greater than the Estimated Applied Water Use due to precipitation being included as a source of water, an Effective Precipitation Disclosure Statement such as the one in Section 494 shall be included in the Landscape Documentation Package.

(d) Estimated Total Water Use. The Estimated Total Water Use shall be calculated using the equation below. Estimated Total Water Use shall not exceed MAWA.

$$ETWU = (ET_o)(0.62) \left(\frac{PF \times HA}{IE} + SLA \right)$$

Where:

ETWU = Estimated total water use per year (gallons)

- ETo = Reference Evapotranspiration (inches)
- PF = Plan 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)

(1) Example ETWU calculation: Total Landscape area is 50,000 square feet, and plant water use type, plant factor and hydrozone area, are shown in the table below. The ETo value is 51.1 inches per year. No water requirement for recreational area, area permanently and solely dedicated to edible plants and area irrigated with recycled water, and non-irrigated areas.

Notes use hydrozone table to determine "actual" landscape irrigation areas

Need to explain this

<u>Hydrozone</u>	<u>Plant Water Use Type(s)</u>	<u>Plant Factor (PF)*</u>	<u>"measured" Area (square feet)</u>	<u>PF x Area (square feet)</u>
<u>1</u>	<u>High</u>	<u>0.8</u>	<u>7,000</u>	<u>5,600</u>
<u>2</u>	<u>High</u>	<u>0.7</u>	<u>10,000</u>	<u>7,000</u>
<u>3</u>	<u>Medium</u>	<u>0.5</u>	<u>16,000</u>	<u>8,000</u>
<u>4</u>	<u>Low</u>	<u>0.3</u>	<u>7,000</u>	<u>2,100</u>
<u>5</u>	<u>Low</u>	<u>0.2</u>	<u>10,000</u>	<u>2,000</u>
			<u>Sum</u>	<u>24,700</u>

*Plant Factor from WUCOLS

$$ETWU = (51.1)(0.62) \left(\frac{24,700}{0.71} + 0 \right)$$

(need to clarify steps to calculate using equation - from table to formula)

= 1,102,116 gallons per year

Compare ETWU with MAWA. The ETWU (1,102,116 gallons per year) is less than MAWA (1,108,870 gallons per year). In this example the water budget complies with the MAWA.

(2) Example ETWU calculation: Total Landscape area is 50,000 square feet, and 2,000 square feet of which is planted with edible plants. The edible plant area is considered a Special Landscape Area. The ETo value is 51.1 inches per year. The plant type, plant factor and hydrozone area, are shown in the table below.

Note: use hydrozone table to determine the actual irrigated square footage for the ETWU equation.

<u>Hydrozone</u>	<u>Plant Water Use Type(s)</u>	<u>Plant Factor (PF)</u>	<u>measured Area (square feet)</u>	<u>hydrozone PF x Area (square feet)</u>
<u>1</u>	<u>High</u>	<u>0.8</u>	<u>7,000</u>	<u>5,600</u>
<u>2</u>	<u>High</u>	<u>0.7</u>	<u>9,000</u>	<u>6,300</u>
<u>3</u>	<u>Medium</u>	<u>0.5</u>	<u>15,000</u>	<u>7,500</u>
<u>4</u>	<u>Low</u>	<u>0.3</u>	<u>7,000</u>	<u>2,100</u>
<u>5</u>	<u>Low</u>	<u>0.2</u>	<u>10,000</u>	<u>2,000</u>
			<u>Sum</u>	<u>23,500</u>
<u>6</u>	<u>SLA</u>		<u>2,000</u>	<u>2,000</u>

$$ETWU = (51.1)(0.62) \left(\frac{23,500}{0.71} + 2,000 \right)$$

$$= (31.68)(33,099 + 2,000)$$

$$= 1,111,936 \text{ gallon per year}$$

what about discounting for Tree canopies?

Compare ETWU with MAWA. For this example:

$$MAWA = (51.1)(0.62)[0.7 \times 50000 + 0.3 \times 2000]$$

$$= 31.68 \times [35000 + 600]$$

$$= 31.68 \times 35600$$

$$= 1,127,808 \text{ gallon per year}$$

why is lowest PF for vegetable gardens? They are moderate to high in H₂O requirements.

The ETWU is (1,111,936 gallons per year) less than MAWA (1,127,808 gallons per year). For this example, the water budget complies with the MAWA.

(c) Section C3 Estimated Water Use (EWU) for a hydrozone and Estimated Total Water Use (ETWU). The landscape project's Estimated Water Use for each hydrozone is calculated using the following equation:

$$EWU = \frac{(ET_o)(PF)(HA)(0.62)}{(IE)}$$

where:

EWU = Estimated total water use for a hydrozone (gallons)

ET_o = Reference evapotranspiration Appendix A (inches per month)

PF = Plant factor

HA = Hydrozone area (square feet)

0.62 = Conversion factor

IE = Irrigation efficiency

(1) Example EWU calculation for three (3) hydrozones: the hypothetical landscape project in Fresno from the previous section. The following assumptions are made for the landscape: there are three hydrozones one each for high, moderate, and low water using plants; each hydrozone has the same irrigation type; and soil characteristics and slopes are uniform over the total landscape area.

Hydrozone 1—High water use plant. The following additional assumptions are made for the high water using plant: landscape coefficient/plant factor is 0.7, landscape area is 16,667 sq. ft., and irrigation efficiency (IE) is 0.65.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo	0.90	1.70	3.30	4.80	6.70	7.80	8.40	7.10	5.20	3.20	1.40	0.60	51.10
PWR	0.63	1.19	2.31	3.36	4.69	5.46	5.88	4.97	3.64	2.24	0.98	0.42	35.77
IWR	0.97	1.83	3.55	5.17	7.22	8.40	9.05	7.65	5.60	3.45	1.51	0.65	55.03
Total for Hydrozone 1 (=55.03 X 16,667 sq.ft.), inches													917,167

Where:

ETo = Reference evapotranspiration Appendix A (inches/month)

PWR = Plant water requirement

= (ETo) (PF)

IWR = Irrigation water requirement

= (PWR)/(IE)

Hydrozone 2—Moderate water use plant. The following assumptions are made: landscape coefficient/plant factor is 0.4; landscape area is 16,667 sq. ft.; and irrigation efficiency (IE) is 0.8.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo	0.90	1.70	3.30	4.80	6.70	7.80	8.40	7.10	5.20	3.20	1.40	0.60	51.10
PWR	0.36	0.68	1.32	1.92	2.68	3.12	3.36	2.84	2.08	1.28	0.56	0.24	20.44
IWR	0.45	0.85	1.65	2.40	3.35	3.90	4.20	3.55	2.60	1.60	0.70	0.30	25.55
Total for Hydrozone 2 (=25.55 X 16,667 sq.ft.), inches													425,833

Where:

ETo = Reference evapotranspiration Appendix A (inches/month)

PWR = Plant water requirement

= (ETo) (PF)

IWR = Irrigation water requirement

= (PWR)/(IE)

Hydrozone 3—Low water use plant. The following assumptions are made: landscape coefficient/plant factor is 0.2; landscape area is 16,667 sq. ft.; and irrigation efficiency (IE) is 0.8. If the landscape area includes non-irrigated planting area, 10% of the non-irrigated planting area may be added to the low water use plant hydrozone.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo	0.90	1.70	3.30	4.80	6.70	7.80	8.40	7.10	5.20	3.20	1.40	0.60	51.10
PWR	0.18	0.34	0.66	0.96	1.34	1.56	1.68	1.42	1.04	0.64	0.28	0.12	10.22
IWR	0.23	0.43	0.83	1.20	1.68	1.95	2.10	1.78	1.30	0.80	0.35	0.15	12.78
Total for Hydrozone 3 (=12.78 X 16,667 sq.ft.), inches													213,000

Where:

ETo = Reference evapotranspiration Appendix A (inches/month)

PWR = Plant water requirement

= (ETo) (PF)

IWR = Irrigation water requirement

= (PWR)/(IE)

(2) Example calculation ETWU. The Estimated Total Water Use for the landscape is the sum total of estimated water uses for each hydrozone:

$$ETWU = \sum_{i=1}^{i=n} (EWU_i)$$

Where:

~~$i = \text{hydrozone number}$~~

~~$n = \text{total number of hydrozones}$~~

~~$ETWU = 917,167 \text{ inches} + 125,833 \text{ inches} + 213,000 \text{ inches}$~~

~~$= 1,556,000 \text{ inches per year}$~~

~~To convert from inches per year to gallons per year:~~

~~$= 1,556,000 \times 0.62 = 964,720 \text{ gallons per year}$~~

~~To convert Effective Precipitation from inches to gallons per year:~~

~~$= 145,500 \text{ inches} \times 0.62 = 90,210 \text{ gallons per year}$~~

(4) Estimated Applied Water Use.

(A) The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.

(B) A calculation of the Estimated Applied Water Use shall be submitted with the Landscape Documentation Package. It may be calculated by summing the amount of water recommended in the irrigation schedule.

~~(d) Section C4 Estimated Applied Water Use (EAWU). The Estimated Applied Water Use is calculated as the Estimated Total Water Use minus Effective Precipitation or:~~

~~$EAWU = ETWU - Eppt$~~

~~(1) Example EAWU calculation:~~

~~$EAWU = ETWU - Eppt$~~

~~$= 964,720 \text{ gallons} - 90,210 \text{ gallons}$~~

~~$= 874,510 \text{ gallons}$~~

~~(e) For the example water budget calculation, the EAWU (874,510 gallons) is less than the MAA (1,108,870 gallons per year) and therefore, the water budget is acceptable.~~

~~(f) Recreational areas (see definitions) and areas permanently and solely dedicated to edible plants, such as orchards and vegetable gardens, may require water in addition to the Maximum Applied Water Allowance. A statement shall be included in the landscape design plan and the irrigation schedule designating those portions of the landscape to be used for such purposes and specifying any additional water needed above the Maximum Applied Water Allowance. The total amount of irrigation water allowed for these areas shall not exceed 1.0 of ETo.~~

~~4. Section D shall contain hydrozone information for the landscape project including a hydrozone map, hydrozone table, and hydrozone calculation summary. See sample worksheet in Appendix B, Section D.~~

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Section ~~65595~~ 65596, Gov. Code.

(11) Soils

(A) A soil analysis satisfying the following conditions shall be submitted as part of the Landscape Documentation Package.

(i) Determination of soil texture, indicating the percentage of organic matter.

(ii) An approximate soil infiltration rate (either measured or derived from soil texture infiltration rate tables.) A range of infiltration rates shall be noted where appropriate.

(iii) Measure of pH, and total soluble salts.

(B) A mulch of at least three inches shall be applied to all planting areas except turf.

~~§492.7.~~ §492.5. Soil Management Plan.

~~A soil management plan that addresses the soil attributes of the project site shall include a laboratory soil analysis and an on-site assessment with a statement of recommendations by a qualified soil specialist. A soil management plan meeting the following criteria shall be submitted as part of the Landscape Documentation Package:~~

~~(1.) A laboratory soil analysis of soil sample(s) from the project site, prior to installation, that evaluates physical and chemical properties shall be required. At a minimum, the soil analysis report shall include:~~

- ~~(a) soil texture (percent clay, silt, sand), indicating the percentage of organic matter;~~
- ~~(b) approximate soil infiltration rate (either measured or derived from soil texture infiltration rate tables). A range of infiltration rates shall be noted where appropriate;~~
- ~~(c) pH;~~
- ~~(d) total soluble salts; and~~
- ~~(e) other soil physical or chemical properties relevant to improving water use efficiency and maintaining plant health (e.g., conductivity, nitrogen, phosphorus, potassium, calcium, magnesium, sodium, sulfur, etc.)~~

~~2. A laboratory soil analysis may be excluded if a certified statement addressing reasons for not completing such a soil analysis is provided by a qualified soil specialist or scientist.~~

~~3. Prior to installation, an on-site soil assessment by a qualified soil specialist that identifies soil attributes or conditions that may minimize water use efficiency or limit plant growth shall be required. The on-site soil assessment shall:~~

- ~~a) identify planting or turf areas that may need amendment;~~
- ~~b) provide a statement of recommendations to correct or improve soil conditions (i.e., applying organic compost as a soil amendment in planting and turf areas);~~
- ~~c) conduct a further analysis of soil conditions (i.e., soil profile, hardpan, bulk density, soil toxicity, salinity, etc.), where applicable; and~~

~~(4.) A project applicant shall implement the recommendations from the on-site soil assessment and apply any relevant information from the on-site soil assessment to the design plans.~~

(a) In order to reduce runoff and encourage healthy plant growth, a soil management plan shall be submitted as part of the Landscape Documentation Package. The soil management plan may include the following elements:

(1) soil type;

(2) estimated date of soil analysis report (to be conducted after mass grading is complete);

(3) identification of limiting soil characteristics; and

(4) identification of planned soil management actions to remediate limiting soil characteristics.

(b) After mass grading, the project applicant or his/her designee shall:

(1) perform a preliminary site inspection;

(2) determine the appropriate level of soil sampling and sampling method needed to obtain representative soil sample(s);

(3) conduct a soil probe test to determine if the soil in the landscape area has sufficient depth to support the intended plants; and

(4) obtain appropriate soil sample(s).

(c) The project applicant or his/her designee shall submit soil sample(s) to laboratory for analysis and recommendation. The soil analysis may include:

(A) soil texture;

Mass grading most often does not happen before Landscape Design process, so may not be able to do the Soil Mgmt plan for the documentation package.

(B) infiltration rate determined by laboratory test or soil texture infiltration rate tables;

(C) pH;

(D) total soluble salts;

(E) sodium; and

(F) recommendations.

(G) Submit the soil analysis report and documentation verifying implementation of soil analysis report recommendations to the local agency per the requirements of Section 492.9 Certificate of Completion.

Soil amendment

fertility; heavy metals; other chemical components
pertinent to plant needs;
F boron etc

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Section ~~65595~~ 65596, Gov. Code.

~~§492.8~~ §492.6. Landscape Design Plan.

(A) Plant Selection and Grouping

(i) Any plants may be used in the landscape, providing the Estimated Applied Water Use recommended does not exceed the Maximum Applied Water Allowance and that the plants meet the specifications set forth in (ii), (iii) and (iv).

(ii) Plants having similar water use shall be grouped together in distinct hydrozones.

(iii) Plants shall be selected appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the site. Protection and preservation of native species and natural areas is encouraged. Avoidance of invasive species is encouraged. The planting of trees is encouraged wherever it is consistent with the other provisions of this ordinance.

(iv) Fire prevention needs shall be addressed in areas that are fire prone. Information about fire prone areas and appropriate landscaping for fire safety is available from local fire departments or the California Department of Forestry.

(a) For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following requirements design criteria and specifications shall be submitted as part of the Landscape Documentation Package. ~~Criteria~~

~~(a)~~ (1) Plant Material

~~(A)~~ (A) Any plant may be selected for the landscape, providing the Estimated Applied Water Use recommended for the project site landscape does not exceed the Maximum Applied Water Allowance. To encourage the efficient use of water, the following is highly recommended:

~~(A)~~ (i) Protection and preservation of native species and natural vegetation;

~~(B)~~ (ii) Selection of water conserving plant species and turf species;

~~(C)~~ (iii) Selection of trees based on applicable local tree ordinances or tree shading guidelines;

~~(D)~~ (iv) Selection of plants from local and regional landscape program plant lists (e.g., California Friendly Landscapes, Bay Friendly Landscaping, River Friendly Landscaping, Lush & Efficient, etc.).

(B) Each hydrozone shall have plant materials with similar water use. For hydrozones with plants of mixed water use, refer to Section 492.7 (a) (2) (D) for more information.

~~(2)~~ (C) Plants shall be selected and planted appropriately based upon their adaptability to the climatic, and the geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended:

~~(A)~~ (i) Use the Sunset Western Climate Zone System which takes into account temperature,

humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;

~~(B)~~ (ii) Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots, etc.) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, power lines, etc.); and

~~(C)~~ (iii) Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

(D) Installation of turf on slopes greater than 25% shall not be permitted where 25% means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).

~~(3)~~ (E) A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per ~~California~~ Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches.

~~(4)~~ (F) Invasive species of plants shall be avoided especially near parks, buffers, greenbelts, water bodies, and open spaces because of their potential to cause harm ~~to~~ environmentally sensitive areas.

~~(5)~~ (G) The architectural guidelines of a common interest development, which include community apartment projects, condominiums ~~projects~~, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group (Civil Code, Section 1358.8).

~~(b)~~ Turf

~~(1)~~ Turf areas shall be sized and shaped to minimize irrigation overspray and runoff.

~~(2)~~ Installation of turf on slopes greater than 4:1 (horizontal to vertical) shall not be permitted.

~~(3)~~ Installation of long, narrow, or irregularly shaped turf areas less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or other low volume irrigation technology.

~~(4)~~ Irrigated areas (including turf) within 24 inches of non-permeable hardscape shall be irrigated with drip irrigation or subsurface irrigation technology.

~~(c)~~ (2) Water Features

~~(i)~~ ~~(A)~~ Recirculating water systems shall be used for decorative water features.

~~(2)~~ (B) Where available, recycled water shall be used as the source for decorative water features.

~~(3)~~ (C) Surface area of a water feature, ^{that uses potable water} shall be included in the ~~Maximum Applied Water Allowance (MAWA)~~ high water use hydrozone area of the water budget calculation. ~~The evaporation rate for all water features shall be equivalent to the evapotranspiration rate of a high water use plant.~~

~~(ii)~~ ~~(4)~~ (D) Pool and spa covers are highly recommended encouraged.

~~(d)~~ (3) Mulch and Amendments

~~(1)~~ (A) A minimum two inch (2") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, ~~and~~ creeping or rooting groundcovers or other special planting situations where mulch is not recommended.

~~(2)~~ In mulched planting areas, the use of drip irrigation is highly recommended.

- ~~(3)~~ (B) Stabilizing mulching products shall be used on slopes.
- ~~(4)~~ (C) The mulching portion of the seed/mulch slurry in hydro-seeded applications meets the mulching requirement. — 2" deep? need clarification.
- ~~(5)~~ (D) Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (Section 492.5).

(C) Landscape Design Plan Specifications

The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies:

- (i) Designation of hydrozones.
- (ii) Landscape materials, trees, shrubs, groundcover, turf, and other vegetation. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, container size, spacing, and quantities of each group of plants indicated.
- (iii) Property lines and street names.
- (iv) Streets, driveways, walkways, and other paved areas.
- (v) Pools, ponds, water features, fences, and retaining walls.
- (vi) Existing and proposed buildings and structures including elevation if applicable.
- (vii) Natural features including but not limited to rock outcroppings, existing trees, shrubs that will remain.
- (viii) Tree staking, plant installation, soil preparation details, and any other applicable planting and installation details.
- (ix) A calculation of the total landscaped area.
- (x) Designation of recreational areas.

~~2. (b) Specifications~~ The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies the following specifications, where applicable: follow standard industry practices and applicable local agency requirements. Plans, at a minimum, shall include:

~~(a) Site~~

- ~~(1) Location map with north arrow, scale, and legal description of the property.~~
- ~~(2) Project name.~~
- ~~(3) Title block with name, license number, mailing address, email address, and telephone number of licensed landscape architect.~~
- ~~(4) Total landscape area (square feet).~~
- ~~(5) Benchmark name, elevation, and location.~~
- ~~(6) Topography with proposed contour lines and elevations.~~
- ~~(7) Property lines and setbacks.~~
- ~~(8) Street names.~~
- ~~(9) Location of all utilities, (e.g. telephone, electrical, gas, sewer, drainage, etc.). The use of this information is limited to the landscape design and installation.~~
- ~~(10) Location and details of existing and proposed public improvements within right-of-way (e.g. curb, gutter, sidewalk, street light, fire hydrants, driveways, other approaches, etc.).~~
- (b) Hydrozone (See also Section 492.5.1(a)(4) of the Landscape Documentation Package and Section D of the Water Efficient Landscape Worksheet)
 - (1) Delineate and label each hydrozone by number, letter, or other method.
 - (2) Indicate the square footage of each hydrozone. (3)

(2) Identify each hydrozone as low, moderate, high water or mixed water use, etc. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation:

~~(4) (3) Identify recreational areas (see Section 491.48):~~

~~(5) (4) Identify areas permanently and solely dedicated to edible plants:~~

~~(6) (5) Identify any other pertinent factors (e.g., sun exposure, microclimate, etc.) Identify areas irrigated with recycled water:~~

~~(c) Plant~~

~~(1) Location of all plant material (e.g., turf, annuals, perennials, groundcovers, shrubs, trees and other vegetation, etc.):~~

~~(2) Detailed legend explaining all the symbols used in the landscape design plan including botanical names, common names, quantity, container size, etc.~~

~~(d) Mulch~~

~~(1) (6) Type of mulch and application depth:~~

~~(2) (7) Depth (inches) soil amendments, type, and quantity:~~

~~(e) Design Elements~~

~~(1) (8) Water features, type, and surface area of water features:~~

~~(2) (9) Hardscapes (pervious and non-pervious).~~

~~(3) Existing natural features including, but not limited to, rock outcroppings, creeks or streams, wetlands, and plant materials that will remain.~~

~~(e) Other~~

~~(1) Installation details for the landscape including soil preparation, plant material installation, tree planting and staking, and any other applicable details.~~

~~(2) (10) Each sheet of location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Examples include, but are not limited to:~~

~~(A) Infiltration beds, swales, and basins that allow water to collect and soak into the ground:~~

~~(B) Constructed wetlands and retention ponds that retain water, handle excess flows, and filter pollutants:~~

~~(C) Pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff (volume and velocity).~~

~~(3) (11) Rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.):~~

~~(4) (12) Each sheet of The landscape design plan shall contain the following statement along with a licensed landscape architect's or licensed landscape contractor's stamp and signature: "I have agreed to comply with the criteria and specifications of the ordinance and I have to appliedly them accordingly for the efficient use of water in the landscape design plan."~~

~~(13) A licensed landscape architect's or licensed landscape contractor's signature and stamp (if applicable).~~

Note: Authority Cited: Sections 65595, Gov. Code and Section 1353.8, Civil Code. Reference: Sections 65596, Gov. Code and Section 1353.8, Civil Code.

→ Plantings are not static. The water budget and the water use are at best "estimates". Would Landscape Architects be held to performance of their design where many factors are not within their control? Does this ordinance burden ~~the~~ no with unmanageable liabilities? after installations + audits/analyses

Lit. to vouch design

show a different reality?

~~§492.9.~~ §492.7. Irrigation Design Plan.

~~(A) Irrigation Design Criteria~~

~~(i) Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates therefore minimizing runoff. Special attention shall be given to avoid runoff on slopes and to avoid overspray in planting areas with a width less than ten feet, and in median strips. No overhead sprinkler irrigation systems shall be installed in median strips less than ten feet wide.~~

~~(ii) Irrigation Efficiency. For the purpose of determining the maximum applied water allowance, irrigation efficiency is assumed to be 0.625. Irrigation systems shall be designed, maintained, and managed to meet or exceed 0.625 efficiency.~~

~~(iii) Equipment. Water meters. Separate landscape water meters shall be installed for all projects except for single family homes or any project with a landscaped area of less than 5,000 square feet.~~

~~Controllers. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design.~~

~~Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain (check) valves shall be installed in strategic points to minimize or prevent low head drainage.~~

~~Sprinkler heads. Heads and emitters shall have consistent application rates within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, application rate, operating pressure, adjustment capability, and ease of maintenance.~~

~~Rain Sensing Override Devices. Rain sensing override devices shall be required on all irrigation systems.~~

~~Soil Moisture Sensing Devices. It is recommended that soil moisture sensing devices be considered where appropriate.~~

(a) For the efficient use of water, an irrigation system shall meet all irrigation design criteria and specifications, manufacturer's specifications, and any local agency code requirements, requirements listed in this section and manufacturers' specifications. An The irrigation system and its related components shall be planned and designed to allow for proper installation, management and maintenance. An irrigation design plan meeting the following conditions design criteria and specifications shall be submitted as part of the Landscape Documentation

Package. 1. Criteria

~~(1) System~~

(1) (A) Dedicated (separate) landscape water meters shall be installed for all projects greater than 5,000 square feet, except for single family residences (Authority Cited: Statutes of 2006, AB 1881, Chapter 559, Article 44.5, Section 535). Dedicated landscape water meters are highly recommended on landscape areas less smaller than 5,000 square feet to facilitate water management.

(2) (B) Weather-based irrigation controllers, or soil moisture based controllers or other self-adjusting irrigation controllers, shall be required for irrigation scheduling in all irrigation

new requirement

systems. ~~The controller must be able to accommodate all aspects of the landscape and irrigation design plans.~~

~~(3) (C) All~~ The irrigation systems shall be designed to ~~avoid excessive pressure. Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured at the time of day the system will operate. These pressure and flow measurements shall be conducted at the design phase, if available, or, prior to installation, if not available at the design phase.~~ ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

(i) If the static pressure is above or below the required dynamic pressure of the irrigation system, ~~pressure regulators, regulating booster pumps or other devices~~ such as inline pressure regulators, booster pumps or other devices, shall be installed to meet the required dynamic pressure of the irrigation system.

(ii) Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.

~~(5) (D)~~ Sensors (e.g., rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions such as rain or a freeze shall be required on all irrigation systems, as appropriate for local climatic conditions.

~~(6) (E) Ball~~ Manual shut-off valves (e.g., such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss ~~due to~~ in case of an emergency (i.e., such as a main line break) or routine repair.

~~(7) (F)~~ Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.

~~(8) (G)~~ High flow check valves, or other technology to interrupt operation in high flow conditions created by irrigation system damage or malfunction, shall be required. High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.

~~(9) (H)~~ The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways or structures.

~~(10) (I)~~ Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.

~~(11) Consideration of the prevailing wind direction and speed is highly recommended.~~

~~(11) (J)~~ The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

(K) The irrigation system must be designed and installed to meet irrigation efficiency criteria, as described in MAWA.

(L) The capacity of the irrigation system shall not exceed the capacity required for peak water demand based on water budget calculations.

(M) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

(N) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer specifications.

Spray heads should be allowed.
What about maintenance issues w/ deep irig under mulch?

(O) Head to head coverage is recommended. However, sprinkler spacing shall be set to achieve distribution uniformity using the manufacturer's specifications.

(P) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.

(Q) Check valves or anti-drain valves are required for all irrigation systems.

(R) Long, narrow, or irregularly shaped areas including turf less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation technology.

(S) Irrigated areas (including turf) within 24 inches of non-permeable hardscape shall be irrigated with drip irrigation or subsurface irrigation technology. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel or other porous material. There are no restrictions on the irrigation system type if the landscape area is adjacent to permeable surfacing and no overspray and runoff occurs. Turf may be planted in the setback if irrigated with subsurface drip or other low volume no-spray irrigation technology.

This affects planting design, the looks...

(T) Non-turf areas on slopes greater than 25% shall be irrigated with drip irrigation or other low volume irrigation technology.

No spray on slopes & what about low flow walla walla heads?

~~(b)~~ (2) Hydrozone

~~(1)~~ (A) Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions and plant materials with similar water use.

~~(2)~~ (B) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.

~~(3) Sprinkler heads shall have matched application rates for uniform coverage~~

~~(4) Head to head coverage shall be required when designing the sprinkler system.~~

~~(5) Swing joints or other riser-protection components shall be required on all risers adjacent to high traffic areas.~~

~~(6) Check valves or anti-drain valves shall be required for all sprinkler heads.~~

~~(7) (C) Where feasible, trees shall be placed on separate valves from shrubs, groundcovers and turf.~~

~~(8) Long, narrow, or irregularly shaped areas less than eight (8) feet in width in any direction shall be irrigated with drip irrigation or low volume irrigation technology.~~

~~(9) Irrigated areas (including turf) within 24 inches of non-permeable hardscape shall be irrigated with drip irrigation or subsurface irrigation technology.~~

~~(10) Slopes greater than 4:1 shall be irrigated with drip irrigation or other low volume irrigation technology.~~

~~(11) (D) Individual hydrozones that mix plants of moderate and low water use plants or moderate and high water use plant, may be allowed if the EWU calculation is based on the proportions of the respective plant water uses and their plant factors. Individual hydrozones that mix high and low water use plants shall not be permitted.~~

(i) plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or

(ii) the plant factor of the higher water using plant is used for calculations.

(E) Individual hydrozones that mix high and low water use plants shall not permitted.

(F) On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in the Hydrozone Information Table (see Appendix B for sample). This table can also assist with pre- and final inspections of the irrigation system, and programming the controller.

(C) Irrigation Design Plan Specifications Irrigation systems shall be designed to be consistent with hydrozones. The irrigation design plan shall be drawn on project base sheets. It shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan described in Section 492 (c) (5) (C). The irrigation design plan shall accurately and clearly identify:

- (i) Location and size of separate water meters for the landscape.
- (ii) Location, type, and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices.
- (iii) Static water pressure at the point of connection to the public water supply.
- (iv) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station.
- (v) Recycled water irrigation systems as specified in the Section 492 (c) (4) (6).

~~2. (b) Specifications~~ The irrigation design plan submitted to the local agency shall be drawn on separate project base sheets at a scale identical to the landscape design plan to accurately and clearly identify the following specifications, where applicable: follow standard industry practices and applicable local agency requirements, including:

~~(a) Site~~

- ~~(1) Location map with north arrow, scale, and legal description of the property.~~
- ~~(2) Project name.~~
- ~~(3) Title block with name, license/certification number, mailing address, email address, and phone number of licensed landscape architect or certified irrigation designer, etc.~~
- ~~(4) Benchmark name, elevation, and location.~~
- ~~(5) Topography with proposed contour lines and elevations.~~
- ~~(6) Property lines and setbacks.~~
- ~~(7) Street names.~~
- ~~(8) Location of all utilities (e.g. telephone, electrical, gas, sewer, drainage, etc. The use of this information is limited to the landscape design and installation.~~
- ~~(9) Location and details of existing and proposed public improvements within right-of-way (e.g., curb, gutter, sidewalk, street light, fire hydrants, driveways, other approaches, etc.).~~

~~(b) Irrigation System~~

- ~~(1) Layout of the irrigation system and all related components.~~
- ~~(2) Detailed legend explaining all the symbols used in the irrigation design plan.~~
- ~~(3) Location, manufacturer, model, type, and size of all components of the irrigation system such as: including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices.~~
- ~~(4) Water meters~~
- ~~(5) Controllers~~
- ~~(6) Valves~~

- ~~(7) Check valves~~
- ~~(8) Main lines and lateral lines (indicate depth)~~
- ~~(9) Swing joints or other riser protection components~~
- ~~(10) Sprinkler heads, drip emitters and other emission devices~~
- ~~(11) Sensors (e.g., rain, freeze, wind, etc.)~~
- ~~(12) Soil moisture sensors~~
- ~~(13) Pressure regulators~~
- ~~(14) Pumps~~
- ~~(15) Backflow prevention devices~~
- ~~(16) Quick couplers~~
- ~~(17) Other related components~~
- ~~(c) Hydrozone (see also Section 492.5.(a)(4) of the Landscape Documentation Package and Section D of the Water Efficient Landscape Worksheet)~~
 - ~~(1) Delineate and label each hydrozone by number, letter, or other method.~~
 - ~~(2) Indicate the square footage of each hydrozone.~~
 - ~~(3) Identify each hydrozone as low, moderate, or high water use, etc.~~
 - ~~(4) Identify recreational areas (see Section 491.48).~~
 - ~~(5) Identify areas permanently and solely dedicated to edible plants.~~
 - ~~(6) Identify any other pertinent factors (e.g., sun exposure, microclimate, etc.).~~
- ~~(d) Hydraulics~~
 - ~~(1) Static water pressure (pounds per square inch, psi).~~
 - ~~(2) Recommended system operating pressure range (psi).~~
 - ~~(3) Acceptable system operating pressure range (psi), minimum and maximum.~~
 - ~~(4) Flow rate (gallons per minute, gpm) and application rate (inches per hour) for each valve.~~
- ~~(e) Other~~
 - ~~(1) Details for recycled water irrigation systems as specified in Section 492.16.~~
 - ~~(2) Construction or installation details for irrigation system.~~
 - ~~(3) Each sheet of the irrigation design plan shall contain the following statement along with a licensed landscape architect's, certified irrigation designer's, or licensed landscape contractor's stamp and signature: "I have agreed to comply with the criteria and specifications of the ordinance and I have applied them accordingly for the efficient use of water in the irrigation design plan."~~
 - ~~(4) Apply best management practices for installation of irrigation systems:~~
 - ~~(1) location and size of separate water meters for landscape;~~
 - ~~(2) location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators and backflow prevention devices;~~
 - ~~(3) static water pressure at the point of connection to the public water supply;~~
 - ~~(4) flow rate (gallons per minute), application rate (inches per hour) and design operating pressure (psi) for each station;~~
 - ~~(5) recycled water irrigation systems as specified in Section 492.14;~~
 - ~~(6) the following statement "I agree to comply with the criteria of the ordinance and to apply them for the efficient use of water in the irrigation design plan."; and~~

(7) a licensed landscape architect, certified irrigation designer, or licensed landscape contractor signature and stamp (if applicable).

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

~~§492.10.~~ **§492.8. Grading Design Plan.**

~~(a) For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading design plan satisfying meeting the following conditions design criteria and specifications shall be submitted as part of the Landscape Documentation Package.~~

~~1. Criteria~~

~~(a) The grading design plan shall indicate finished delineate configurations and elevations of all the landscaped areas, including the height of graded slopes, drainage patterns, pad elevations, and finished grade.~~

~~(b) Grading of a project site shall avoid disturbing natural drainage patterns and avoid soil compaction in landscape areas.~~

~~2. Specifications~~

~~The A grading design plan shall be drawn on project base sheets It shall be separate from but use the same format as the landscape design plan at a scale identical to the landscape design plan to accurately and clearly identify the following specifications, where applicable:~~

~~(a) Site~~

~~(1) Location map with north arrow, scale, and legal description of the property.~~

~~(2) Project name.~~

~~(3) Title block with name, license number, address, and phone number of registered civil engineer, licensed landscape architect, or licensed landscape contractor.~~

~~(4) Benchmark name, elevation, and location.~~

~~(5) Property lines and setbacks.~~

~~(6) Street names.~~

~~(7) Location of all utilities (e.g., telephone, electrical, gas, sewer, drainage, etc.). The use of this information is limited to the landscape design and installation.~~

~~(8) Location and details of existing and proposed public improvements within right-of-way (e.g., curb, gutter, sidewalk, street light, fire hydrants, driveways, other approaches, etc.).~~

~~(9) Topography with contours and elevations of existing, proposed, and finished grade.~~

~~(10) Cross-sections of cuts, fills, building pads, sidewalks, driveways, etc.~~

~~(b) Other~~

~~(1) Any supporting slope or other engineering calculations.~~

~~(2) Installation details of any applicable stormwater best management practices.~~

~~(3) Refer to the local agency guidelines for additional grading requirements.~~

~~(4) Each sheet of the grading design plan shall contain the following statement along with a registered civil engineer's, licensed landscape architect's, or licensed landscape contractor's stamp and signature: "I have agreed to comply with the criteria and specifications of the ordinance and I have applied them accordingly for the efficient use of water in the grading design plan."~~

(1) The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:

(A) height of graded slopes;

(B) drainage patterns;

(C) pad elevations;

(D) finish grade; and

(E) stormwater retention improvements.

(2) To prevent excessive erosion and runoff, it is highly recommended that project applicants:

(A) grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;

(B) avoid disruption of natural drainage patterns; and

(C) avoid soil compaction in landscape areas.

(3) The grading design plan shall contain the following statement along with a registered civil engineer, licensed landscape architect, or licensed landscape contractor signature and stamp (if applicable): "I agree to comply with the criteria of the ordinance and to apply them for the efficient use of water in the grading design plan."

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

(12) Certification

(A) Upon completing the installation of the landscaping and the irrigation system, an irrigation audit shall be conducted by a certified landscape irrigation auditor prior to the final field observation. (See Landscape Irrigation Auditor Handbook as referenced in Section 492 (c) (9) (A)).

(B) A licensed landscape architect or contractor, certified irrigation designer, or other licensed or certified professional in a related field shall conduct a final field observation and shall provide a certificate of substantial completion to the city or county. The certificate shall specifically indicate that plants were installed as specified, that the irrigation system was installed as designed, and that an irrigation audit has been performed, along with a list of any observed deficiencies.

(C) Certification shall be accomplished by completing a Certificate of Substantial Completion and delivering it to the city or county the retail water supplier, and to the Owner of Record. A sample of such a form, which shall be provided by the city or county is:

SAMPLE CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Site:

Project Number:

Project Location:

Preliminary Project Documentation Submitted: (check indicating submittal)

—1. Maximum Applied Water Allowance:(gallons or cubic feet per year)

—2. Estimated Applied Water Use:(gallons or cubic feet/year)

* 2a. Estimated Amount of Water Expected from Effective Precipitation: (gallons or cubic feet/year)

3. Estimated Total Water Use:(gallons or cubic feet year)

Note: * If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in Section 495 shall be completed and submitted. The Estimated Amount of Water Expected from Effective Precipitation shall not exceed 25 percent of the local annual mean precipitation (average rainfall.)

4. Landscape Design Plan

- 5. Irrigation Design Plan
- 6. Irrigation Schedules
- 7. Maintenance Schedule
- 8. Landscape Irrigation Audit Schedule
- 9. Grading Design Plan
- 10. Soil Analysis

Post Installation Inspection: (Check indicating substantial completion)

- A. Plants installed as specified
- B. Irrigation system installed as designed
 - dual distribution system for recycled water
 - minimal run-off or overspray
- C. Landscape Irrigation Audit performed

(Certificate of Substantial Completion, continued)

Project submittal package and a copy of this certification has been provided to owner/manager and local water agency

Comments:

I/we certify that work has been installed in accordance with the contract documents.
 Contractor Signature Date State License Number I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Ordinance and that the landscape planting and irrigation installation conform with the approved plans and specifications. Landscape Architect Signature Date State License Number or Irrigation Designer/Consultant or Licensed or Certified Professional in a Related Field I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents. Owner Signature Date

~~§492.11~~ **§492.9. Certificate of Completion.**

~~1. The project applicant and the local agency shall comply with the Certificate of Completion requirements as specified under Section 492.2. See Appendix C for a sample Certificate of Completion.~~

~~2. (a) The Certificate of Completion shall specifically indicate that include the following:~~

- ~~(1) Date;~~
- ~~(2) Project name;~~
- ~~(3) Project applicant name, telephone, and mailing address;~~
- ~~(4) Project address and location;~~
- ~~(5) Property owner name, telephone, and mailing address;~~
- ~~(a) plants were installed as specified;~~
- ~~(b) (6) the irrigation system was installed as designed; Results of preliminary inspection that the irrigation system was installed as designed. Prior to backfilling, evidence that the party responsible for irrigation installation conducted a preliminary field inspection of the irrigation system. In the case of homeowner installed landscapes, the homeowner may be the party responsible for irrigation installation.~~
- (7) Results of final inspection that the landscape architect, certified irrigation designer, or licensed landscape contractor has certified that the landscape project has been installed per the approved Landscape Documentation Package; and

~~(e) (8) an irrigation audit has been performed;~~ Upon project installation, a certified irrigation auditor shall conduct an irrigation audit per Section 492.12 and complete an irrigation audit report.

~~(d) other criteria of the ordinance have been met along with a list of any observed deficiencies;~~

~~3. (b) The project applicant following shall be submitted~~ include the following documents with the Certificate of Completion:

~~(a) (1) Irrigation Schedule, see Section 492.12 492.10;~~

~~(b) (2) Landscape and Irrigation Maintenance Schedule, see Section 492.13 492.11;~~

~~(c) Landscape Irrigation Audit Schedule, see Section 492.14; and~~

~~(d) (3) Irrigation Audit Report if applicable;~~

(4) Soil analysis report and documentation verifying implementation of soil report recommendations.

(c) The project applicant shall:

(1) submit the signed Certificate of Completion to the local agency for approval;

(2) receive a Certificate of Occupancy or equivalent from the local agency; and

(3) submit copies of the approved Certificate of Completion to the local water purveyor and property owner or his/her designee.

4. (d) The local agency shall:

(a) (1) receive the signed Certificate of Completion from the project applicant;

(b) conduct a final field inspection of the project;

(c) (2) approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the local agency shall provide information to the project applicant regarding reapplication, appeal or other assistance;

(d) (3) issue a Certificate of Occupancy, or equivalent, to the project applicant.

(e) See Appendix C for a sample Certificate of Completion.

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

~~§492.12~~ §492.10. Irrigation Scheduling Schedule

(a) For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules satisfying the following conditions shall be submitted as part of the Landscape Documentation Package meeting the following criteria shall be submitted with the Certificate of Completion.

(1) (E) Whenever possible, Irrigation scheduling shall incorporate the use of automatic irrigation systems and evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations ~~or other validated weather data~~ or soil moisture monitoring systems to apply the appropriate levels of water for different climates.

(2) (G) Whenever possible, landscape irrigation shall be scheduled between 2:00 a.m. and 10:00 a.m. to avoid irrigating during times of high wind or temperature unless weather conditions are unfavorable. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions are unfavorable prevent it. If allowable hours of irrigation differ from the local retail water purveyor, the stricter of the two shall apply.

(3) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current ETo, so that applied water meets the Estimated

*non-
static* projects/conditions - certifying is problematic.

*In much of
calif - cubn
periods are
usually betw
midnight &
8 a.m.*

Applied Total Water Use. Total annual applied water shall be less than or equal to MAWA. Actual irrigation schedules should be based on current time ETo data (e.g., CIMIS or soil moisture sensor).

(4) Using an appropriate controller, an annual irrigation program with monthly irrigation schedules shall be developed and submitted for each of the following:

- (A) the plant establishment period;
- (B) the established landscape; and
- (C) temporarily irrigated areas.

(5) (B) The irrigation schedule shall: (i) include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for each station; and (ii) provide the amount of applied water (in hundred cubic feet, gallons, or in whatever billing units the local water supplier uses) recommended on a monthly and annual basis. Each Irrigation Schedule shall ~~include~~ consider for each station all of the following that apply:

- (A) Irrigation interval (days between irrigation);
- (B) Irrigation run times (hours or minutes per irrigation event to avoid runoff);
- (C) Number of cycle starts required for each irrigation event to avoid runoff;
- (D) Amount of applied water scheduled to be applied on a monthly basis;
- (E) Application rate setting;
- (F) Root depth setting;
- (G) Plant type setting;
- (H) Soil type;
- (I) Slope factor setting;
- (J) Shade factor setting; and
- (K) Irrigation uniformity or efficiency setting~~;~~

(C) The total amount of water for the landscape project shall include water designated in the Estimated Total Water Use calculation plus water needed for any water features, which shall be considered as a high water using hydrozone.

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

§492.13. §492.11. Landscape and Irrigation Maintenance Schedule.

New
Requirement

1. (a) Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.

2. (b) A regular maintenance schedule shall include, but not be limited to, ~~checking, routine inspection, adjusting adjustment, and repairing repair of the irrigation system and its components equipment; resetting adjusting the automatic controllers; conducting water audits; and prescribing the amount of water applied per landscaped acre;~~ aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, and weeding in all landscaped areas and removing any obstruction to emission devices.

3. (c) Whenever possible, Repair of all irrigation equipment shall be done with the originally specified materials installed components or their equivalents.

4. (d) A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

(9) Landscape Irrigation Audit Schedules

A schedule of landscape irrigation audits, for all but single family residences, satisfying the following conditions shall be submitted to the city or county as part of the Landscape Documentation Package.

(A) At a minimum, audits shall be in accordance with the State of California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document, which is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook (June 1990) version 5.5 [formerly Master Auditor Training].)

(B) The schedule shall provide for landscape irrigation audits to be conducted by certified landscape irrigation auditors at least once every five years.

~~§492.14.~~ §492.12. Landscape Irrigation Audit, and Audit Schedules, Irrigation Survey, and Irrigation Water Use Analysis .

~~1. (a)~~ At a minimum, all landscape irrigation audits shall comply with the "Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004 or most current edition)," ~~the entire document,~~ which is hereby incorporated by reference.

~~2. (b)~~ All landscape irrigation audits and audit reports shall be conducted by a certified landscape irrigation auditor.

~~3. For new construction and rehabilitated landscape projects installed on or after January 1, 2010, the project applicant shall fulfill the following requirements for landscape irrigation audits:~~

~~(a) submit a landscape irrigation audit report with the Certificate of Completion to the local agency;~~

~~(b) For landscapes equal to or greater than one acre submit a schedule of landscape irrigation audits with the Certificate of Completion to the local agency;~~

~~(c) implement the recommendations from the landscape irrigation audit report; and~~

~~(d) For landscapes equal to or greater than one acre submit a landscape irrigation audit report every 5 years to the local agency.~~

~~4. (c)~~ For new construction and rehabilitated landscape projects installed after January 1, 2010, except for home owner installed, home owner provided landscape less than 2500 square feet, as described in Section 490.1:

(1) the project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency containing the following: an inspection, a system tune up, a system test (including distribution uniformity and verification of minimal overspray or runoff that does not cause overland flow), an irrigation schedule and recommendations for improvements from the certified irrigation auditor; and

(2) the local agency or water purveyor shall fulfill the following requirements for landscape irrigation audits: shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the MAWA.

(a) annually compare customers' maximum applied water allowances, which are found in the Water Efficient Landscape Worksheet (Section C) submitted as part of the Landscape Documentation Package, to customers' water use and identify customers whose landscapes exceed the maximum applied water allowance for at least one year, to the extent that customer water use information is available to the local agency.

(b) annually conduct landscape irrigation audits on a minimum 20% of the total customer landscapes identified in 492.14 (1) (a).

- ~~(1) The local agency shall obtain permission from the project applicant to access the property for the purposes of conducting a landscape irrigation audit.~~
~~(2) The local agency's cost of conducting the landscape irrigation audit shall be paid by the project applicant.~~
~~(3) A local agency that is not the local retail water purveyor shall make a good faith effort to obtain necessary water use information from the local retail water purveyor.~~

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

~~§492.15.~~ **§492.13. Irrigation Efficiency.**

~~(i) Irrigation Efficiency.~~

~~(a)~~ For the purpose of determining the maximum applied water allowance, average irrigation efficiency is assumed to be 0.625 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.625 0.71 efficiency.

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

~~§492.16.~~ **§492.14. Recycled Water.**

~~1. (i) (a)~~ The installation of recycled water irrigation systems ~~(i.e., dual distribution systems)~~ shall ~~be required to~~ allow for the current and future use of recycled water, unless a written exemption has been granted as described in the following ~~492.16.2 ii~~ Section 492.14 (b).

~~2. (ii) (b)~~ Irrigation systems and decorative water features shall ~~make use of~~ recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all public health codes and standards is ~~are~~ not available and will not be available ~~in for~~ the foreseeable future.

~~3. (iii) (c)~~ All ~~The~~ recycled water irrigation systems shall be designed and operated in accordance with all applicable local ~~agency~~ and State ~~codes~~ laws.

~~4. If the irrigation water (recycled water or blended water) has electrical conductivity equal to or greater than 3 deciSiemens per meter (dS/m) or 3 millimhos per centimeter (mmh/cm) or 2000 mg per liter total dissolved solids (TDS), a leaching fraction of up to 10% may be included in the MAWA calculation. The leaching fraction shall not exceed 10% of MAWA.~~

~~5. (d) For more information on recycled water, see the University of California Agriculture & Natural Resources "Landscape Plant Salt Tolerance Selection Guide for Recycled Water Irrigation (2005)," the entire document, which is hereby incorporated by reference.~~

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

~~§492.17.~~ **§492.15. Stormwater Management**

~~1. (a)~~ Stormwater management ~~combines practices to will~~ minimize runoff ~~and water waste~~ and increase infiltration which to recharges groundwater, and to improve water quality. Implementing stormwater best management practices into the landscape, ~~irrigation,~~ and grading design plans to minimize runoff, and to increase on-site retention and infiltration are highly recommended.

~~2. (b)~~ Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any stormwater ordinances and stormwater management plans.

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Section 65596, Gov. Code.

§492.18. §492.16. Public Education.

~~1-~~ (1) (a) Publications. ~~(A)~~ Local agencies shall provide information to owners of all new, single family residential homes regarding the design, installation, and maintenance of water efficient landscapes. ~~(B)~~ Information about the efficient use of landscape water shall be provided to water users throughout the community. Education is a critical component to promoting the efficient use of water in landscapes. ~~Encouraging~~ ~~The use of appropriate principles of design, installation, management, and maintenance that save water shall occur at all levels is~~ encouraged in the community.

~~(1)~~ (1) A local agency shall provide information to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.

~~2-~~ (2) (b) Model Homes. At least one model home that is landscaped in each project consisting of eight or more homes shall demonstrate via signs and information the principles of water efficient landscapes described in this ordinance. All model homes that are landscaped shall demonstrate via use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance.

New Requirement

~~(A)~~ (1) Signs shall be used to identify the model as an example of a water efficient landscape, and featuring elements such as hydrozones, irrigation equipment, and others ~~which~~ that contribute to the overall water efficient theme.

~~(B)~~ (2) Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

Note: Authority cited: Sections 65595 Gov. Code. Reference: Section ~~65593, 65594, 65596, 65597,~~ Gov. Code.

§492.19. §492.17. Environmental Review.

- ~~1- This ordinance is not subject to California Environmental Quality Act (CEQA).~~
- ~~2- All local agencies are required to adopt specific objectives, criteria, and procedures for the evaluation of projects under CEQA. It is the local agency's responsibility to conduct environmental reviews before taking any action to approve projects subject to the ordinance. A multidisciplinary environmental review is a set of procedures used to identify potential environmental impacts of a proposed project.~~

(a) The adoption of the Model Water Efficient Landscape Ordinance by the State of California is not subject to a review under the California Environmental Quality Act (CEQA)

(b) The local agency must comply with CEQA, as appropriate.

Note: Authority cited: Sections 21082, Public Resources Code. Reference: Sections 21080, 21082, Public Resources Code.

§493. Provisions for Existing Landscapes.

(a) A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each "entities" specific responsibilities relating to this ordinance.

Note: Authority cited: Section ~~65595,~~ Gov. Code.

entity's

(a) Water Management

All existing landscaped areas to which the city or county provides water that are one acre or more, including golf courses, green belts, common areas, multi-family housing, schools, businesses, parks, cemeteries, and publicly owned landscapes shall have a landscape irrigation audit at least every five years. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook, Dept. of Water Resources, Water Conservation Office (June 1 990) version 5.5.) (1) If the project's water bills indicate that they are using less than or equal to the Maximum Applied Water Allowance for that project site, an audit shall not be required. (2) Recognition of projects that stay within the Maximum Applied Water Allowance is encouraged.

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§493.1. Landscape Irrigation Audits, Irrigation Survey, and Irrigation Water Use Analysis.

~~For existing landscapes installed before January 1, 2010, the following shall apply:~~

~~1. At a minimum, all landscape irrigation audits shall be in accordance with the "Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004)" in Section 492.14.~~

~~(a) For all existing landscapes installed before January 1, 2010 with a dedicated or mixed use water meter that are one acre or more, including golf courses, green belts, common areas, multi-family housing, schools, businesses, parks, cemeteries, and publicly owned landscapes, the local agency shall administer programs that may include, but not be limited to irrigation water use analyses, irrigation surveys and irrigation audits to meet the existing landscape MAWA.~~ *just surveys*

~~(1) For all existing landscapes installed before January 1, 2010 without a meter that are one acre or more, the local agency shall administer programs that may include, but not be limited to irrigation surveys and irrigation audits to meet the existing landscape MAWA.~~

~~(b) Maximum Applied Water Use Allowance (MAWA) for existing landscapes shall be calculated as: $MAWA = (0.8)(ET_o)(LA)(0.62)$.~~

~~(c) The audit shall be comply with the Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004) or the most current edition.~~

~~2. (d) All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.~~

~~3. For existing landscapes equal to or greater than one acre (43,560 square feet), the property owner or his/her designee of the landscape project shall fulfill the following requirements for landscape irrigation audits:~~

~~(a) Submit a landscape irrigation audit report every 5 years to the local agency.~~

~~(b) Implement the water management and maintenance recommendations from the landscape irrigation audit report.~~

~~For existing landscapes equal to or greater than 2,500 square feet, the local agency shall fulfill the following irrigation audit requirements:~~

~~(a) Annually survey and compare customers' landscape water use to local reference evapotranspiration and identify customers whose landscapes exceed 80% of local reference evapotranspiration for at least one year, to the extent that customer water use information is available to the local agency.~~

~~(b) Annually conduct landscape irrigation audits on a minimum 20% of the total customer landscapes identified in Section 493.1.4 (a)~~

~~(1) The local agency shall obtain permission from the property owner or his/her designee to access the property for the purposes of conducting a landscape irrigation audit.~~

~~(2) The local agency's cost of conducting the landscape irrigation audit shall be paid by the property owner or his/her designee.~~

~~(3) A local agency that is not the local retail water purveyor shall make a good faith effort to obtain necessary water use information from the local retail water purveyor.~~

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Section 65596, Gov. Code.

§493.2. (b) Water Waste Prevention

Cities and counties shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Penalties for violation of these prohibitions shall be established locally.

Authority cited: Section 65594, Gov. Code. Reference: Section 65597, Gov. Code.

~~Water waste resulting from inefficient landscape irrigation, such as runoff, low head drainage, overspray, etc, is prohibited. Similar conditions where water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures are also prohibited. Penalties for violation of these prohibitions shall be subject to procedures of the local agency.~~

~~Note: Authority cited: Sections, 65595 Gov. Code. Reference: Sections 65593, 65594, 65596, 65597, Gov. Code.~~

§493.2. Water Waste Prevention

Cities and counties shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Penalties for violation of these prohibitions shall be established locally.

Note: Authority cited: Section 65594, Gov. Code. Reference: Section 65597, Gov. Code.

§494. Effective Precipitation.

~~If effective precipitation is included in the calculation of the Estimated Total Water Use, then an Effective Precipitation Disclosure Statement from the landscape professional *licensed landscape architect, licensed landscape contractor or certified irrigation designer* and the property owner or his/her designee shall be submitted with the Landscape Documentation Package. See Appendix D for a sample Effective Precipitation Disclosure Statement.~~

(a) A local agency may consider Effective Precipitation (Eppt) (25% of annual precipitation) in tracking water use and may use the following equation to calculate Maximum Applied Water Allowance: $MAWA = (ETo - Eppt) (0.62) (0.7 \times LA + 0.3 \times (SLA))$.

Note: Authority Cited: Sections 65595, Gov. Code. Reference: Sections 65596, Gov. Code.

SAMPLE EFFECTIVE PRECIPITATION DISCLOSURE STATEMENT

~~I certify that I have informed the project owner and developer that this project depends on (gallons or cubic feet) of effective precipitation per year. This represents percent of the local mean precipitation of inches per year. I have based my assumptions about the amount of precipitation that is effective upon: I certify that I have informed the project owner and developer that in times of drought, there may not be enough water available to keep the entire landscape alive. Licensed or Certified Landscape Professional~~

~~I certify that I have been informed by the licensed or certified landscape professional that this project depends upon (gallons or cubic feet) of effective precipitation per year. This represents percent of the local mean precipitation of inches per year. I certify that I have been informed that in times of drought, there may not be enough water available to keep the entire landscape alive. Owner Developer~~

~~Section 495. Reference Evapotranspiration in inches (Historical Data, extrapolated from 12-month Normal Year ETo Maps and U.C. publication 21426).~~