

**STAFF REPORT
TOWN COUNCIL MEETING OF NOVEMBER 10, 2009
CONSENT AGENDA**

TO: HONORABLE MAYOR AND MEMBERS OF THE TOWN COUNCIL

FROM: BRIAN FRAGIAO, DIRECTOR OF PUBLIC WORKS

DATE: NOVEMBER 2, 2009

RE: MODEL WATER EFFICIENT LANDSCAPE ORDINANCE

Recommendation:

For informational purposes only. No action at this time.

Issue Statement and Discussion

In 2006, the State enacted legislation (AB1881) requiring the Department of Water Resources (DWR) to update the State Model Water Efficient Landscape Ordinance. The update contains new landscape and irrigation design requirements to reduce water consumption and waste in landscape irrigation. In February 2008, DWR released a draft model ordinance for public review and comment. The final draft of the ordinance was released on May 2009.

Objectives of AB1881 and the DWR model ordinance is as follows:

- Encourage appropriate use of plants
- Establish "water budgets" for properties and describe penalties for exceeding established water budgets
- Require automatic irrigation systems and schedules
- Require soil assessment/soil management
- Promote use of, and manage, recycled water resources
- Minimize overspray and runoff

All jurisdictions and agencies are required to adopt the model ordinance or develop an ordinance by January 2010. Should no action be taken by the jurisdiction or agency, the DWR model ordinance would automatically become effective January 2010 by statute.

Staff is currently working with the Placer County Water Agency (Purveyor) to coordinate processing of the new ordinance. Staff is also gathering existing ordinances throughout the region for assistance on developing an ordinance that fits the Town. With the time constraints, staff will not be able to put together a Town ordinance before the January 2010 deadline. Therefore, the Town will automatically be covered under the DWR model ordinance. Staff is planning to develop an ordinance in the next several months. Attached is a copy of the DWR Model Water Efficient Landscape Ordinance (May 7, 2009) for your review.

CEQA Requirements

Once the Town has prepared it's own ordinance, staff will determine the environmental process involved. Staff is assuming that a Negative Declaration will be needed.

Financial and/or Policy Implications

No financial implications at this time.

**Model Water Efficient Landscape Ordinance
May 7, 2009**

This document reflects revisions made to the text of the ordinance
as submitted to OAL on February 9, 2009.

Existing text of the regulation (AB 325), as published in the CCR, is in Times New Roman font.
Existing text that was proposed for deletion in the February 9th version is in ~~Times New Roman~~
~~with single strike out.~~
Text proposed for addition in February 9th version is in *italics*.

REVISIONS

All deletions to the February 9th version are designated by ~~double strikethrough~~.
All additions to the February 9th version are designated by *double underline*.

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:

~~(1) that the limited supply of state waters are subject to ever increasing demands that the waters of the state are of limited supply and are subject to ever increasing demands;~~

~~(2) that California's economic prosperity depends on adequate supplies of water; that the continuation of California's economic prosperity is dependent on the availability of adequate supplies of water for future uses;~~

~~(3) that state policy promotes conservation and efficient use of water; that 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;~~

~~(4) that landscapes provide recreation areas, clean the air and water, prevent erosion, offer fire protection, and replace ecosystems displaced by development; and that landscapes are essential to the quality of life in California by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development;~~

~~(5) that landscape design, installation, maintenance and management can and should shall be water efficient-; and~~

~~(6) that 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 these legislative findings, the purpose of this model ordinance is to:

(1) promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;

(2) establish a structure for *planning*, designing, installing, ~~and~~ maintaining and managing water efficient landscapes in new *construction and rehabilitated* projects; ~~and~~

(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 and 65594, Government Code. Reference: Sections 65591, 65591.5, and 65597, Government Code.~~

~~Note: Authority cited: Section 65593, Government Code. Reference: Sections 65591, 65593, 65596, Government Code.~~

§ 490.1 Applicability

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

(1) new construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review;

- (2) new construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;
 - (3) new construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan check or design review;
 - (4) existing landscapes limited to Sections 493, 493.1 and 493.2; and
 - (5) cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Sections 492.4, 492.11 and 492.12; and existing cemeteries are limited to Section 493~~4~~.
- (b) This ordinance does not apply to:
- (1) registered local, state or federal historical sites;
 - (2) ecological restoration projects that do not require a permanent irrigation system;
 - (3) mined-land reclamation projects that do not require a permanent irrigation system; or
 - (4) plant collections, as part of botanical gardens and arboretums open to the public.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 491. Definitions.

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

- (a) ~~“anti-drain valve” or “check valve” means a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.~~
- (b) ~~“application rate” means the depth of water applied to a given area, usually measured in inches per hour.~~
- (a)(e) ~~“applied water” means the portion of water supplied by the irrigation system to the landscape.~~
- (d) ~~“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.~~
- (b)(e) ~~“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.~~
- (c)(f) ~~“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:~~

$$\begin{aligned} & (325,851 \text{ gallons}/43,560 \text{ square feet})/12 \text{ inches} = (0.62) \\ & 325,851 \text{ gallons} = \text{one acre foot} \\ & 43,560 \text{ square feet} = \text{one acre} \\ & 12 \text{ inches} = \text{one foot} \end{aligned}$$

~~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.)~~

- (d) ~~“Certificate of Completion” means the document required under Section 492.9.~~
- (e) ~~“certified landscape irrigation auditor” means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation auditor certification program and Irrigation Association’s Certified Landscape Irrigation Auditor program.~~
- (f) ~~“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 to prevent drainage from sprinkler heads when the sprinkler is off.~~
- (g) ~~“certified irrigation designer” means a person certified to design irrigation systems by an accredited academic institution a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation designer certification program and Irrigation Association’s Certified Irrigation Designer program.~~

- (h) “common interest developments” means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section ~~1353.8~~1351.
- (i) “controller” means an automatic timing device used to remotely control valves to ~~set~~ operate an irrigation ~~schedule system~~. A weather-based controller is a controller that uses evapotranspiration or weather data to determine when to irrigate. A self-adjusting irrigation controller is a controller that uses sensor data (i.e. soil moisture sensor).
- (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.
- (k)~~(g)~~ “ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- (l)~~(h)~~ “effective precipitation” or “usable rainfall” (*Eppt*) means the portion of total precipitation that is used by the plants. ~~Precipitation is not a reliable source of water, but can contribute to some degree toward the water needs of the landscape.~~
- (m)~~(i)~~ “emitter” means a drip irrigation fittings emission device that delivers water slowly from the system to the soil.
- (n)~~(j)~~ “established landscape” means the point at which plants in the landscape have developed significant roots growth into the site. ~~soil adjacent to the root ball. Typically, most plants are established after one or two years of growth.~~
- (o)~~(k)~~ “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.
- (f) “Estimated Applied Water Use” means the portion of the Estimated Total Water Use that is derived from applied water. ~~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).~~
- (p)~~(m)~~ “Estimated Total Water Use” (*ETWU*) means the total water used for the landscape as described in Section 492.4. ~~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).~~
- (q)~~(n)~~ “ET adjustment factor” (*ETAF*) 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. ~~The irrigation efficiency for purposes of the ET Adjustment Factor is 0.625. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is (0.7)=(0.5/0.71) . (0.8)=(0.5/0.625).~~ *ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing, non-rehabilitated landscapes is 0.8.*
- (r)~~(o)~~ “evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a ~~specific~~ *specified* time.
- (s)~~(p)~~ “flow rate” means the rate at which water flows through pipes, ~~and~~ valves ~~and~~ emission devices, measured in ~~{gallons per minute, gallons per hour, or cubic feet per second}~~.
- (t) “hardscapes” means any durable material (pervious and non-pervious).
- (u) “homeowner-provided landscaping” means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner.
- (v)~~(q)~~ “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 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 be irrigated or non-irrigated.~~
- (w)~~(r)~~ “infiltration rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

- (x) “invasive plants species” means species of plants that have a tendency to colonize open spaces, riparian corridors and other sensitive habitats. Invasive species can out-compete native species and disrupt natural ecosystem processes. Invasive species may be regulated by county agricultural agencies.
- (y) “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 or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.
- (z)(s) “irrigation efficiency” (IE) 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 average irrigation efficiency for purposes of this ordinance is 0.650.71. Greater irrigation efficiency can be expected from well designed and maintained systems.
- (aa) “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.
- (bb) “irrigation water use analysis” means an analysis of water use data based on meter readings and billing data.
- (cc) “landscape architect” means a person who holds a license to practice landscape architecture in the state of California (~~Government Code~~, Business and Professions Code, Section 5615).
- (t) “landscape irrigation audit” means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.
- (dd)(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 the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. 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 (e.g., open spaces and existing native vegetation).
- (ee) “landscape contractor” means a person licensed (with a valid C-27 license) by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems, ~~consistent with Business and Professions Code, Sections 7058 and 7059.~~
- (ff) “Landscape Documentation Package” means the documents required under Section 492.3.
- (gg) “landscape project” means total area of landscape in a project as defined in “landscape area” for the purposes of this ordinance, meeting requirements under Section 490.1
- (hh)(v) “lateral line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
- (ii) “local agency” means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. 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.
- (jj) “local water purveyor” means any entity, including a public agency, city, county or private water company that provides retail water service.
- (kk) “low volume irrigation” means 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.
- (ll)(w) “main line” means the pressurized pipeline that delivers water from the water source to the valve or outlet.

~~(mm)(x)~~ “Maximum Applied Water Allowance” (*MAWA*) means, ~~for design purposes,~~ the upper limit of annual applied water for the established landscaped area as specified in Section 492.4. ~~(e)(2)~~ 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 ETAF not to exceed 1.0.*

~~(nn)~~ “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.

~~(oo)(y)~~ “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.

~~(pp)(z)~~ “mulch” means any *organic* material such as leaves, bark, straw or ~~other inorganic mineral materials such as rocks, gravel, and decomposed granite~~ left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature and preventing soil erosion.

~~(qq)~~ “new construction” means, for the purposes of this ordinance, a new building with a landscape or other new landscape.

~~(rr)(aa)~~ “operating pressure” means the pressure at which ~~the parts of an irrigation a system of sprinklers is~~ are designed by the manufacturer to operate, usually indicated at the base of a sprinkler.

~~(ss)(bb)~~ “overhead sprinkler irrigation systems” means those systems with high flow that deliver water through the air (e.g., pop ups, impulse sprinklers, spray heads and rotors, etc).

~~(tt)(cc)~~ “overspray” means the irrigation water which is delivered beyond the landscaped target area, ~~and which can cause overland flow caused by irrigation events onto non-targeted area, such as wetting pavements, walks, and structures, or other non-landscaped areas.~~

~~(uu)~~ “pervious” means any surface or material that allows the passage of water through the material and into the underlying soil.

~~(vv)~~ “permit” means ~~any permit~~ an authorizing document issued by local agencies for new construction building or rehabilitated landscapes.

~~(ww)(dd)~~ “plant factor” or “plant water use factor” means is a factor that, when multiplied by reference evapotranspiration-ET_o, estimates the amount of water used by needed by plants. For purposes of this ordinance, the average plant factor of low water using plants ranges from 0 to 0.3, for average water using plants the range is 0.4 to 0.6, and for high water using plants the range is 0.7 to 1.0. For purposes of this ordinance, the plant factor range for low water use plants is 0 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the Department of Water Resources 2000 ~~1999~~ publication “Water Use Classification of Landscape Species.”

~~(xx)~~ “precipitation rate” means the rate of application of water measured in inches per hour.

~~(yy)~~ “project applicant” means the individual or entity submitting a Landscape Documentation Package required under Section 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 or her designee.

~~(zz)(ee)~~ “rain sensor” or “rain sensing shutoff device” means a ~~system~~ component which automatically shuts off ~~suspends the an~~ irrigation system event when it rains.

~~(aaa)(ff)~~ “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.

~~(bbb)(gg)~~ “recreational area” means areas ~~dedicated to of active play or recreation~~ such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic ~~parks, sports fields and golf courses where turf provides a playing surface.~~

~~(ccc)(hh)~~ “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.*

~~(ddd)(ii)~~ “reference evapotranspiration” or “ET_o” means is a standard measurement of environmental parameters which affect the water use of plants. ET_o is given expressed in inches per day, month, or year as represented in Section 495.1, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances so that regional differences in climate can be accommodated.

~~(eee)(jj)~~ “rehabilitated landscape” means any re-landscaping project that requires a permit, *plan check, or design review, meets the requirements of Section 490.1 and where the modified landscape area is greater than 2,500 square feet and 50% of the total landscape area and the modifications occur within one year.*

~~(fff)(kk)~~ “runoff” means water which is not absorbed by the soil or landscape to which it is applied and flows from the *landscape area*. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a ~~severe~~ slope.

~~(ggg)(ll)~~ “soil moisture sensing device” or “soil moisture sensor” means a device that measures the amount of water in the soil. *The device may also suspend or initiate an irrigation event.*

~~(hhh)(mm)~~ “soil texture” means the classification of soil based on ~~the~~ *its* percentage of sand, silt, and clay ~~in the soil.~~

~~(iii)~~ “Special Landscape Area” (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

~~(jjj)(nn)~~ “sprinkler head” means a device which ~~sprays~~ *delivers* water through a nozzle.

~~(kkk)(oo)~~ “static water pressure” means the pipeline or municipal water supply pressure when water is not flowing.

~~(lll)(pp)~~ “station” means an area served by one valve or by a set of valves that operate simultaneously.

~~(mmm)~~ “swing joint” means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

~~(nnn)(qq)~~ “turf” means a surface layer of earth containing mowed grass with its roots, *a ground cover surface of mowed grass*. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

~~(ooo)(rr)~~ “valve” means a device used to control the flow of water in the irrigation system.

~~(ss)~~ “water conservation concept statement” means a one page checklist and a narrative summary of the project as shown in Section 492(c)(1).

~~(ppp)~~ “water conserving plant species” means a plant species identified as having a low plant factor.

~~(qqq)~~ “water feature” means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

~~(rrr)~~ “watering window” means the time of day irrigation is allowed.

~~(sss)~~ “WUCOLS” means the Water Use Classification of Landscape Species ~~and refers to the Department of Water Resources 1999 publication by a U.C. Cooperative Extension employee, Larry Costello, published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.~~

~~Note: Authority Cited: Section 65594, Government Code. Reference: Section 65597, Government Code.~~

Note: Authority Cited: Section 65595, Government Code. Reference: Sections 65592, 65596, Government Code.

§ 492. Provisions for New Construction or Rehabilitated 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 entity's specific responsibilities relating to this ordinance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

(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.~~

~~(2) Projects subject to this section shall conform to the provisions in Section 492.~~

~~(3) This section shall not apply to:~~

~~(A) homeowner-provided landscaping at single-family and multi-family projects;~~

~~(B) cemeteries;~~

~~(C) registered historical sites;~~

~~(D) ecological restoration projects that do not require a permanent irrigation system;~~

~~(E) mined land reclamation projects that do not require a permanent irrigation system; or~~

~~(F) any project with a landscape area less than 2,500 square feet.~~

(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~~

~~(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.~~

~~(C) 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

~~(Sample Water Conservation Concept Statement, continued)~~

~~Description of Project~~

~~(Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.)~~

Date: _____ Prepared by: _____

§ 492.1 Compliance with Landscape Documentation Package.

(a) Prior to construction, the local agency shall:

(1) provide the project applicant with the ordinance and procedures for permits, plan checks or design reviews;

(2) review the Landscape Documentation Package submitted by the project applicant;

(3) approve or deny the Landscape Documentation Package;

(4) issue a permit or approve the plan check or design review for the project applicant; and

(5) upon approval of the Landscape Documentation Package, submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.

(b) Prior to construction, the project applicant shall:

(1) submit a Landscape Documentation Package to the local agency.

(c) Upon approval of the Landscape Documentation Package by the local agency, the project applicant shall:

(1) receive a permit or approval of the plan check or design review and record the date of the permit in the Certificate of Completion;

(2) submit a copy of the approved Landscape Documentation Package along with the record drawings, and any other information to the property owner or his/her designee; and

(3) submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.2 Penalties.

(a) A local agency may establish and administer penalties to the project applicant for non-compliance with the ordinance to the extent permitted by law.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.3 Elements of the Landscape Documentation Package.

(a) The Landscape Documentation Package shall include the following six (6) elements:

(1) project information;

(a) date

(b) project applicant

(c) project address (if available, parcel and/or lot number(s))

(d) total landscape area (square feet)

(e) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)

(f) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well

(G) checklist of all documents in Landscape Documentation Package

(H) project contacts to include contact information for the project applicant and property owner

(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

1 Maximum Applied Water Allowance (MAWA)

2. Estimated Total Water Use (ETWU)

(3) soil management report;

(4) landscape design plan;

(5) irrigation design plan; and

(6) grading design plan.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.4 Water Efficient Landscape Worksheet.

(a) A project applicant shall complete the Water Efficient Landscape Worksheet which contains two sections (see sample worksheet in Section 495.2, Appendix B):

(1) a hydrozone information table (see Appendix B, Section A) for the landscape project; and
(2) a water budget calculation (see Appendix B, Section B) for the landscape project. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, 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.

(b) Water budget calculations shall adhere to the following requirements:

(1) The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants and from 0.7 to 1.0 for high water use plants.
(2) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.

(3) All Special Landscape Areas shall be identified and their water use calculated as described below.

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

~~(2) The Maximum Applied Water Allowance~~

~~(A) A project's Maximum Applied Water Allowance shall be calculated using the following formula:~~

~~MAWA = (ETo) (.8) (LA) (.62) where:~~

~~MAWA = Maximum Applied Water Allowance (gallons per year)~~

~~ETo = Reference Evapotranspiration (inches per year)~~

~~0.8 = ET Adjustment Factor~~

~~LA = Landscaped Area (square feet)~~

~~0.62 = conversion factor (to gallons per square foot)~~

~~(B) Two example calculations of the Maximum Applied Water Allowance are:~~

~~(i) PROJECT SITE ONE: Landscaped area of 50,000 sq. ft. in Fresno~~

~~MAWA = (ETo) (.8) (LA) (.62)~~

~~= (51 inches) (.8) (50,000 square feet) (.62)~~

~~Maximum Applied Water Allowance = 1,264,800 gallons per year (or 1,691 hundred cubic feet per year: 1,264,800/748 = 1,691)~~

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

~~MAWA = (ETo) (.8) (LA) (.62)~~

~~= (35 inches) (.8) (50,000 square feet) (.62)~~

~~Maximum Applied Water Allowance = 868,000 gallons per year (or 1,160 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.~~

(c) Maximum Applied Water Allowance

The Maximum Applied Water Allowance shall be calculated using the equation below. The example calculations below are hypothetical to demonstrate proper use of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are from the Reference Evapotranspiration Table in Section 495.1, Appendix A, for planning purposes only. For

actual irrigation scheduling, a project applicant shall use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or use other self-adjusting devices (e.g., soil moisture sensor).

(1) Example MAWA calculation: a hypothetical landscape project in Fresno, CA with an irrigated landscape area of 50,000 square feet without any Special Landscape Area (SLA= 0, no edible plants or recreational areas or use of recycled water). To calculate MAWA, the annual reference evapotranspiration value for Fresno is 51.1 inches as listed in the Reference Evapotranspiration Table in Section 495.1, Appendix A.

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

MAWA = Maximum Applied Water Allowance (gallons)

ET_o = Reference Evapotranspiration (inches)

0.62 = Conversion Factor

0.7 = ET Adjustment Factor

LA = Landscape Area (square feet)

0.3 = Additional Water Allowance for SLA

SLA = Special Landscape Area (square feet)

$$MAWA = (51.1 \text{ inches})(0.62)[0.7 \times 50,000 \text{ square feet} + 0.3 \times 0] \\ = 1,108,870 \text{ gallons per year}$$

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 cubic feet = 748 gallons)

(2) In this next hypothetical example, the landscape project in Fresno, CA has the same ET_o 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.

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

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

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

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

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

(3) 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.

(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.

$$EWU (\text{hydrozone}) = (ET_o) (PF) (HA) (.62)$$

-(IE)

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

ET_o = Reference Evapotranspiration (inches per year)

PF = 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. The sum of the Estimated Total Water Use calculations for all hydrozones shall not exceed MAWA.

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

Where:

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration (inches)

PF = Plant Factor from WUCOLS (see Section 491)

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

SLA = Special Landscape Area (square feet)

0.62 = Conversion Factor

IE = Irrigation Efficiency (minimum 0.71)

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

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

**Plant Factor from WUCOLS*

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

= 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, 2,000 square feet of which is planted with edible plants. The edible plant area is considered a Special Landscape Area. The reference evapotranspiration value is 51.1 inches per year. The plant type, plant factor and hydrozone area are shown in the table below.*

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

**Plant Factor from WUCOLS*

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

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

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

Compare ETWU with MAWA. For this example:

$$MAWA = (51.1)(0.62)[0.7 \times 50,000 + 0.3 \times 2000]$$

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

$$= 31.68 \times 35,600$$

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

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

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.5 Soil Management Report.

(a) In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant, or his/her designee, as follows:

(1) Submit soil samples to a laboratory for analysis and recommendations.

(A) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.

(B) The soil analysis may include:

1. soil texture;

2. infiltration rate determined by laboratory test or soil texture infiltration rate table;

3. pH;

4. total soluble salts;

5. sodium;

6. percent organic matter; and

7. recommendations.

(2) The project applicant, or his/her designee, shall comply with one of the following:

(A) If significant mass grading is not planned, the soil analysis report shall be submitted to the local agency as part of the Landscape Documentation Package; or

(B) If significant mass grading is planned, the soil analysis report shall be submitted to the local agency as part of the Certificate of Completion.

(3) The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.

(4) The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

~~(5) Landscape Design Plan~~

~~A landscape design plan meeting the following requirements shall be submitted as part of the landscape documentation package.~~

~~(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. 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.~~

§ 492.6 Landscape Design Plan

(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 design criteria shall be submitted as part of the Landscape Documentation Package.

(1) Plant Material

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

1. protection and preservation of native species and natural vegetation;
2. selection of water-conserving plant ~~species~~ and turf species;
3. selection of trees based on applicable local tree ordinances or tree shading guidelines; and
4. selection of plants from local and regional landscape program plant lists.

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

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

1. 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;
2. recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure [e.g., buildings, sidewalks, power lines]; and
3. consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

(D) Turf is not allowed on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape and where 25% means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).

(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 Public Resources Code Section 4291 (a) and (b). Avoid fire-prone plant materials and highly flammable mulches.

~~(F) The use of invasive and/or noxious plant species is discouraged. 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.~~

(G) The architectural guidelines of a common interest development, which include community apartment projects, condominiums, 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) Water Features

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

~~(ii) Pool and spa covers are encouraged.~~

(2) Water Features

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

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

(C) Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.

(D) Pool and spa covers are highly recommended.

(3) Mulch and Amendments

(A) A minimum two inch (2") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications where mulch is contraindicated.

(B) Stabilizing mulching products shall be used on slopes.

(C) The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.

(D) Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see 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.~~

~~(b) The landscape design plan shall follow standard industry practices and applicable local agency requirements.~~ The landscape design plan, at a minimum, shall contain:

- (1) delineate and label each hydrozone by number, letter, or other method;
- (2) identify each hydrozone as low, moderate, high water or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation.;
- (3) identify recreational areas;
- (4) identify areas permanently and solely dedicated to edible plants;
- (5) identify areas irrigated with recycled water;
- (6) identify type of mulch and application depth;
- (7) identify soil amendments, type, and quantity;
- (8) identify type and surface area of water features;
- (9) identify hardscapes (pervious and non-pervious);
- (10) identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater best management practices are encouraged in the landscape design plan and 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 flow and filter pollutants; and
 - (C) pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.
- (11) identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
- (12) contain the following statement: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan;" and
- (13) the signature of a licensed landscape architect, licensed landscape contractor or any other ~~applicable landscape professional, person, licensed or unlicensed,~~ authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

Note: Authority Cited: Section 65595, ~~Government Code and Section 1353.8, Civil Code.~~ Reference: Section 65596, Government Code and Section ~~1353.8, 1351,~~ Civil Code.

(6) Irrigation Design Plan

An irrigation design plan meeting the following conditions shall be submitted as part of the Landscaped Documentation Package.

~~(A) Irrigation Design Criteria~~

~~(i) Runoff and Overspray. Soil types and infiltration rate shall be considered when designing the 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 5000 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.~~

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

~~(B) Recycled Water~~

~~(i) The installation of recycled water irrigation systems (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 section (B)(ii).~~

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

~~(iii) The recycled water irrigation systems shall be designed and operated in accordance with all local and state codes.~~

§ 492.7 Irrigation Design Plan

(a) For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturer's ~~specifications~~ recommendations. 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 design criteria shall be submitted as part of the Landscape Documentation Package.

(1) System

(A) Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet to facilitate water management.

(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 systems.

(C) The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

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

2. Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured at the point of connection. 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.

(D) Sensors (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~~ shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.

(E) Manual shut-off valves (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 in case of an emergency (such as a main line break) or routine repair.

(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.

(G) High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.

(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.

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

(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 Section 492.4 regarding the Maximum Applied Water Allowance.

(L) It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.

(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's ~~specifications~~ recommendations.

(O) Head to head coverage is recommended. However, sprinkler spacing shall be ~~not~~ designed to achieve the highest possible distribution uniformity using the manufacturer's ~~specifications~~ recommendations.

(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) 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. These restrictions may be modified if:

1. the landscape area is adjacent to permeable surfacing and no overspray or runoff occurs; or
2. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping;

or
3. the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section 492.7 (a)(1)(H). Prevention of overspray and runoff must be confirmed during irrigation audit.

(T) Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during irrigation audit.

(2) Hydrozone

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

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

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

(D) Individual hydrozones that mix plants of moderate and low water use or moderate and high water use, may be allowed if:

1. plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or

2. 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 be 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 Section 495.2 Appendix B Section A). This table can also assist with pre-inspection and final inspection 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)(B).~~

~~(b) The irrigation design plan, at a minimum, submitted to the local agency shall follow standard industry practices and applicable local agency requirements, including shall contain:~~

~~(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 (pressure per square inch) for each station;~~

~~(5) recycled water irrigation systems as specified in Section 492.14;~~

~~(6) the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan;" and~~

~~(7) the signature of a licensed landscape architect, certified irrigation designer, irrigation consultant, licensed landscape contractor or any other ~~applicable landscape professional, person, licensed or unlicensed~~, authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)~~

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

~~(7) Irrigation Schedules~~

~~Irrigation schedules satisfying the following conditions shall be submitted as part of the Landscape Documentation Package.~~

~~(A) An annual irrigation program with monthly irrigation schedules shall be required for the plant establishment period, for the established landscape, and for any temporarily irrigated areas.~~

~~(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.~~

~~(C) The total amount of water for the 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.~~

~~(D) Recreational areas designated in the landscape design plan shall be highlighted and the irrigation schedule shall indicate if any additional water is needed above the Maximum Applied Water Allowance because of high plant factors (but not due to irrigation inefficiency.)~~

~~(E) Whenever possible, irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates.~~

~~(F) 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 high temperature.~~

~~(8) Maintenance Schedules~~

~~A regular maintenance schedule satisfying the following conditions shall be submitted as part of the Landscape Documentation Package:~~

~~(A) Landscapes shall be maintained to ensure water efficiency. A regular maintenance schedule shall include but not be limited to checking, adjusting, and repairing irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, and weeding in all landscaped areas.~~

~~(B) Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents.~~

~~(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.~~

~~(10) Grading Design Plan~~

~~Grading design plans satisfying the following conditions shall be submitted as part of the Landscape Documentation Package.~~

~~(A) 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.~~

~~(B) The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade.~~

§ 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 plan shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.~~

~~(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, if applicable.~~

~~(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 undisturbed soil; and~~

~~(C) avoid soil compaction in landscape areas.~~

~~(3) The grading design plan shall contain the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan" and the signature of a ~~licensed landscape architect, certified irrigation designer, licensed landscape contractor or any other applicable landscape professional, person, licensed or unlicensed, as listed in the Business and Professions Code, California Code of Regulation, or Food and Agriculture Code~~ licensed professional as required by law.~~

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

~~(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, to 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 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

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

§ 492.9 Certificate of Completion.

(a) The Certificate of Completion (see Section 495.3 Appendix C for a sample certificate) shall include the following ~~six (6) elements: information and documentation:~~

(1) Project Information Sheet that contains:

(A) date;

~~(B)(2)~~ project name;

~~(C)(3)~~ project applicant name, telephone, and mailing address;

~~(D)(4)~~ project address and location; and

~~(E)(5)~~ property owner name, telephone, and mailing address;

(2) ~~(6)~~ certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;

~~(3)(7) irrigation audit, see Section 492.12;~~ scheduling parameters used to set the controller (see Section 492.10);

~~(8) parameters used to set the controller, see Section 492.10;~~

~~(4)(9)~~ landscape and irrigation maintenance schedule (see Section 492.11);

~~(5)(10)~~ irrigation audit report (see Section 492.12); and

~~(6)(11)~~ soil analysis report, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations (see Section 492.5).

(b) The project applicant shall:

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

(2) ensure that copies of the approved Certificate of Completion are submitted to the local water purveyor and property owner or his or her designee.

(c) The local agency shall:

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

(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.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.10 Irrigation Scheduling.

(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 shall meet the following criteria:

(1) Irrigation scheduling shall use automatic irrigation systems and evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS).

(2) Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

(3) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules shall be based on current time reference evapotranspiration data (e.g., CIMIS or soil moisture sensor).

(4) Parameters used to set the controller 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) Each irrigation schedule shall 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.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.11 Landscape and Irrigation Maintenance Schedule.

- (a) Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.
- (b) A regular maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; weeding in all landscape areas and removing and obstruction to emission devices.
- (c) Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.
- (d) A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.12 Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis.

~~(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)," which is hereby incorporated by reference.~~

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

~~(b)(c)~~ For new construction and rehabilitated landscape projects installed after January 1, 2010, 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 that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule;

(2) the local agency shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits and irrigation surveys for compliance with the Maximum Applied Water Allowance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.13 Irrigation Efficiency.

(a) For the purpose of determining Maximum Applied Water Allowance, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.14 Recycled Water.

(a) The installation of recycled water irrigation systems shall allow for the current and future use of recycled water, unless a written exemption has been granted as described in Section 492.14(b).

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

(c) All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.

(d) Landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for Special Landscape Areas shall not exceed 1.0.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.15 Stormwater Management.

(a) Stormwater management practices minimize runoff and increase infiltration which recharges groundwater and improves water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site retention and infiltration are encouraged.

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

(c) Rain gardens and other landscapes features that increase rain water capture and infiltration are recommended.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code

~~(d) Public Education~~

~~(1) 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.~~

§ 492.16 Public Education.

(a) Publications. Education is a critical component to promote the efficient use of water in landscapes. The use of appropriate principles of design, installation, management and maintenance that save water is encouraged in the community.

(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) 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.~~

~~(A) 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 contribute to the overall water efficient theme.~~

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

~~Note: Authority cited: Section 65594, Government Code. Reference: Section 65597, Government Code.~~

(b) *Model Homes.* All model homes that are landscaped shall use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance.

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

(2) Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes. Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code

§ 492.17 Environmental Review.

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

~~(b) (a)~~ (a) The local agency must comply with the California Environmental Quality Act (CEQA), as appropriate.

Note: Authority cited: Section 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 entity's specific responsibilities relating to this ordinance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

(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 1990) 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.

§ 493.1 Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis

(a) This section, 493.1, shall apply to all existing landscapes that were installed before January 1, 2010 and are over one acre in size.

(1) For all landscapes in 493.1(a) that have a water meter, the local agency shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys and irrigation audits that verify landscape water use does not exceed the Maximum Applied Water Allowance for existing landscapes. The Maximum Applied Water Allowance for existing landscapes shall be calculated as: $MAWA = (0.8)(ET_0)(LA)(0.62)$.

(2) For all landscapes in 493.1(a), that do not have a meter, the local agency shall administer programs that may include, but not be limited to, irrigation surveys and irrigation audits that verify proper operation of the irrigation system and prevent water waste.

~~(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 Maximum Applied Water Allowance.~~

~~(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 Maximum Applied Water Allowance.~~

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

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

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

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 493.2 (b) Water Waste Prevention.

~~(a) Cities and counties~~ Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape due to, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots or structures. Penalties for violation of these prohibitions shall be established locally.

(b) Restrictions regarding overspray may be modified if:

(1) the landscape area is adjacent to permeable surfacing and no overspray or runoff occurs; or

(2) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping.

Note: Authority cited: Section 65594, Government Code; Reference: Section 65597, Government Code.

§ 494. Effective Precipitation.

~~If effective precipitation is included in the calculation of the Estimated Total Water Use, an Effective Precipitation Disclosure Statement (similar to the following Sample Effective Precipitation Disclosure Statement) shall be completed, signed, and submitted with the Landscape Documentation Package. No more than 25 percent of the local annual mean precipitation shall be considered effective precipitation in the calculation of the Estimated Total Water Use.~~

~~(a) A local agency may consider Effective Precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate Maximum Applied Water Allowance:~~

~~$MAWA = (ET_o - Eppt) (0.62) (0.7 \times LA + 0.3 \times SLA)$.~~

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government 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

~~§ 495. Reference Evapotranspiration~~

§ 495 Appendices.

§ 495.1 Appendix A Reference Evapotranspiration (ET_o) Table.

REFERENCE EVAPOTRANSPIRATION

In inches (Historical Data, extrapolated from 12-month Normal Year Eto Maps and U.C)

County	City	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN. Eto
ALAMEDA	Livermore	1.2	1.5	2.9	4.4	5.9	6.6	7.4	6.4	5.3	3.2	1.5	0.9	47.2
	Oakland	1.5	1.5	2.8	3.9	5.1	5.3	6.0	5.5	4.8	3.1	1.4	0.9	41.8
ALPINE	Markleeville	0.7	0.9	2.0	3.5	5.0	6.1	7.3	6.4	4.4	2.6	1.2	0.5	40.6
AMADOR	Jackson	1.2	1.5	2.8	4.4	6.0	7.2	7.9	7.2	5.3	3.2	1.4	0.9	48.9
BUTTE	Chico	1.2	1.8	2.9	4.7	6.1	7.4	8.5	7.3	5.4	3.7	1.7	1.0	51.7
	Gridley	1.2	1.8	3.0	4.7	6.1	7.7	8.5	7.1	5.4	3.7	1.7	1.0	51.9
	Oroville	1.2	1.7	2.8	4.7	6.1	7.6	8.5	7.3	5.3	3.7	1.7	1.0	51.5
GALAVERAS	San Andreas	1.2	1.5	2.8	4.4	6.0	7.3	7.9	7.0	5.3	3.2	1.4	0.7	48.8
GOLUSA	Golusa	1.1	1.7	2.8	4.8	6.6	7.4	8.2	7.0	5.7	3.5	1.7	1.0	51.4
	Williams	1.2	1.7	2.9	4.5	6.1	7.2	8.5	7.3	5.3	3.4	1.6	1.0	50.8
GONTRA-COSTA	Benicia	1.3	1.4	2.7	3.8	4.9	5.0	6.4	5.5	4.4	2.9	1.2	0.7	40.3
	Brentwood	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
	Concord	1.1	1.4	2.4	4.0	5.5	5.9	7.0	6.0	4.8	3.2	1.3	0.7	43.4
	Courtland	0.9	1.5	2.9	4.4	6.1	6.9	7.9	6.7	5.3	3.2	1.4	0.7	48.0
	Martinez	1.2	1.4	2.4	3.9	5.3	5.6	6.7	5.6	4.7	3.1	1.2	0.7	41.8
	Pittsburg	1.0	1.5	2.8	4.1	5.6	6.4	7.4	6.4	5.0	3.2	1.3	0.7	45.4
DEL NORTE	Crescent City	0.5	0.9	2.0	3.0	3.7	3.5	4.3	3.7	3.0	2.0	0.9	0.5	27.7
EL DORADO	Gamino	0.9	1.7	2.5	3.9	5.9	7.2	7.8	6.8	5.1	3.1	1.5	0.9	47.3
FRESNO	Glovis	1.0	1.5	3.2	4.8	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.4
	Gealinga	1.2	1.7	3.1	4.6	6.2	7.2	8.5	7.3	5.3	3.4	1.6	0.7	50.9
	Five Points	0.9	1.6	3.3	5.0	6.6	7.7	8.5	7.3	5.4	3.4	1.5	0.9	52.1
	Fresno	0.9	1.7	3.3	4.8	6.7	7.8	8.4	7.1	5.2	3.2	1.4	0.6	51.1
	Friant	1.2	1.5	3.1	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
	Kerman	0.9	1.5	3.2	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.2
	Kingsburg	1.0	1.5	3.4	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.6
	Reedley	1.1	1.5	3.2	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
GLENN	Orland	1.2	1.6	3.1	4.8	6.7	7.4	8.8	7.3	5.8	3.8	1.7	1.1	53.3
	Willows	1.2	1.7	2.9	4.7	6.1	7.2	8.5	7.3	5.3	3.6	1.7	1.0	51.3
HUMBOLDT	Eureka	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
	Ferndale	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
	Garberville	0.6	1.2	2.2	3.1	4.5	5.0	5.5	4.8	3.8	2.4	1.0	0.7	34.9
	Hoopa	0.5	1.1	2.1	3.0	4.4	5.4	6.1	5.1	3.8	2.4	0.9	0.7	35.6
IMPERIAL	Brawley	2.8	3.8	5.9	8.0	10.4	11.5	11.7	10.0	8.4	6.2	3.5	2.1	84.2
	Galipatria	2.9	3.9	6.1	8.3	10.5	11.8	12.0	10.4	8.6	6.5	3.8	2.3	86.9
	El Centro	2.7	3.5	5.6	7.9	10.1	11.1	11.6	9.5	8.3	6.1	3.3	2.0	81.7
	Holtville	2.8	3.8	5.9	7.9	10.4	11.6	12.0	10.0	8.6	6.2	3.5	2.1	84.7
	Yuma	3.1	4.1	6.6	8.7	11.0	12.4	12.7	11.0	8.9	6.6	4.0	2.6	91.5

County	City	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN.
INYO	Bishop	1.7	2.7	4.8	6.7	8.2	10.9	7.4	9.6	7.4	4.8	2.5	1.6	68.3
	Death Valley	2.2	3.3	5.4	7.7	9.8	11.1	11.4	10.1	8.3	5.4	2.9	1.7	79.1
	Independence	1.7	2.7	3.4	6.6	8.5	9.5	9.8	8.5	7.1	3.9	2.0	1.5	65.2
	Lower Haiwee	1.8	2.7	4.4	7.1	8.5	9.5	9.8	8.5	7.1	4.2	2.6	1.5	67.6
	Oasis	2.7	2.8	5.9	8.0	10.4	11.7	11.6	10.0	8.4	6.2	3.4	2.1	83.1
KERN	Arvin	1.2	1.8	3.5	4.7	6.6	7.4	8.1	7.3	5.3	3.4	1.7	1.0	51.9
	Bakersfield	1.0	1.8	3.5	4.7	6.6	7.7	8.5	7.3	5.3	3.6	1.6	0.9	52.4
	Buttonwillow	1.0	1.8	3.2	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.5	0.9	52.0
	China Lake	2.1	3.2	5.3	7.7	9.2	10.0	11.0	9.8	7.3	4.9	2.7	1.7	74.8
	Delano	0.9	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.4	0.7	52.0
	Grapevine	1.3	1.8	3.1	4.4	5.6	6.8	7.6	6.8	5.9	3.4	1.9	1.0	49.5
	Inyokern	2.0	3.1	4.9	7.3	8.5	9.7	11.0	9.4	7.1	5.1	2.6	1.7	72.4
	Isabella Dam	1.2	1.4	2.8	4.4	5.8	7.3	7.9	7.0	5.0	3.2	1.7	0.9	48.4
	Lost Hills	0.6	1.1	2.6	4.4	7.0	7.7	8.5	7.1	5.0	3.9	0.8	0.4	48.0
	Shafter	1.0	1.7	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.5	0.9	52.1
	Taft	1.3	1.8	3.1	4.3	6.2	7.3	8.5	7.3	5.4	3.4	1.7	1.0	51.2
	Tehachapi	1.4	1.8	3.2	5.0	6.1	7.7	7.9	7.3	5.9	3.4	2.1	1.2	52.9
	KINGS	Gorcoran	0.9	1.5	3.3	5.2	7.2	7.9	8.4	7.3	5.8	3.4	1.4	0.7
Hanford		0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.2	5.4	3.4	1.4	0.7	51.5
Kettleman City		1.0	1.8	3.4	5.3	7.2	7.9	8.4	7.4	5.9	3.7	1.7	1.0	54.6
Lemoore		0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.4	0.7	51.7
LAKE	Lakeport	1.1	1.3	2.6	3.5	5.1	6.0	7.3	6.1	4.7	2.9	1.2	0.9	42.8
	Lower Lake	1.2	1.4	2.7	4.5	5.3	6.3	7.4	6.4	5.0	3.1	1.3	0.9	45.4
LASSEN	Ravendale	0.6	1.1	2.3	4.1	5.6	6.7	7.9	7.3	4.7	2.8	1.2	0.5	44.9
	Susanville	0.7	1.0	2.2	4.1	5.6	6.5	7.8	7.0	4.6	2.8	1.2	0.5	44.0
LOS ANGELES	Burbank	2.1	2.8	3.7	4.7	5.1	6.0	6.6	6.7	5.4	4.0	2.6	2.0	51.7
	Glendora	2.0	2.5	3.6	4.9	5.4	6.1	7.3	6.8	5.7	4.2	2.6	2.0	53.1
	Gorman	1.6	2.2	3.4	4.6	5.5	7.4	7.7	7.1	5.9	3.6	2.4	1.1	52.4
	Lancaster	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.1
	Long Beach	2.2	2.5	3.4	3.8	4.8	5.0	5.3	4.9	4.5	3.4	2.4	2.0	44.0
	Los Angeles	2.2	2.7	3.7	4.7	5.5	5.8	6.2	5.9	5.0	3.9	2.6	1.9	50.1
	Palmdale	2.0	2.7	4.2	5.1	7.6	8.5	9.9	9.8	6.7	4.2	2.6	1.7	64.8
	Pasadena	2.1	2.7	3.7	4.7	5.1	6.0	7.1	6.7	5.6	4.2	2.6	2.0	52.3
	Pearblossom	1.7	2.4	3.7	4.7	7.3	7.7	9.9	7.9	6.4	4.0	2.6	1.6	59.9
	Redondo	2.2	2.4	3.3	3.8	4.5	4.7	5.4	4.8	4.4	2.8	2.4	2.0	42.6
	San Fernando	2.0	2.7	3.5	4.6	5.5	5.9	7.3	6.7	5.3	3.9	2.6	2.0	52.0
MADERA	Chowchilla	1.0	1.4	3.2	4.7	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.4
	Madera	0.9	1.4	3.2	4.8	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.5
	Raymond	1.2	1.5	3.0	4.6	6.1	7.6	8.4	7.3	5.2	3.4	1.4	0.7	50.5
MARIN	Novato	1.3	1.5	2.4	3.5	4.4	6.0	5.9	5.4	4.4	2.8	1.4	0.7	39.8
	San Rafael	1.2	1.3	2.4	3.3	4.0	4.8	4.8	4.9	4.3	2.7	1.3	0.7	35.8
MARIPOSA	Goulterville	1.1	1.5	2.8	4.4	5.9	7.3	8.1	7.0	5.3	3.4	1.4	0.7	48.8
	Mariposa	1.1	1.5	2.8	4.4	5.9	7.4	8.2	7.1	5.0	3.4	1.4	0.7	49.0
	Yosemite	0.7	1.0	2.3	3.7	5.1	6.5	7.1	6.1	4.4	2.9	1.1	0.6	41.4
MENDOCINO	Fort Bragg	0.9	1.3	2.2	3.0	3.7	3.5	3.7	3.7	3.0	2.3	1.2	0.7	29.0
	Hopland	1.1	1.3	2.6	3.4	5.0	5.9	6.5	5.7	4.5	2.8	1.3	0.7	40.9
	Point Arena	1.0	1.3	2.3	3.0	3.7	3.9	3.7	3.7	3.0	2.3	1.2	0.7	29.6
	Ukiah	1.0	1.3	2.6	3.3	5.0	5.8	6.7	5.9	4.5	2.8	1.3	0.7	40.9

County	City	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN.
MERCED	Los Banos	1.0	1.5	3.2	4.7	6.1	7.4	8.2	7.0	5.3	3.4	1.4	0.7	50.0
	Merced	1.0	1.5	3.2	4.7	6.6	7.9	8.5	7.2	5.3	3.4	1.4	0.7	61.5
MONO	Bridgeport	0.7	0.9	2.2	3.8	5.5	6.6	7.4	6.7	4.7	2.7	1.2	0.5	43.0
MONTEREY	Gastroville	1.6	1.8	2.7	3.5	4.4	4.4	4.5	4.2	3.8	2.8	1.8	1.3	36.7
	King City	1.7	2.0	3.4	4.4	4.4	5.6	6.1	6.7	6.5	5.2	2.2	1.3	49.6
	Long Valley	1.5	1.9	3.2	4.1	5.8	6.5	7.3	6.7	5.3	3.6	2.0	1.2	49.1
	Monterey	1.7	1.8	2.7	3.5	4.0	4.1	4.3	4.2	3.5	2.8	1.9	1.5	36.0
	Salinas	1.6	1.9	2.7	3.8	4.8	4.7	5.0	4.5	4.0	2.9	1.9	1.3	39.1
	Soledad	1.7	2.0	3.4	4.4	5.5	5.4	6.5	6.2	5.2	3.7	2.2	1.5	47.7
NAPA	St Helena	1.2	1.5	2.8	3.9	5.1	6.1	7.0	6.2	4.8	3.1	1.4	0.9	44.1
	Yountville	1.3	1.7	2.8	3.9	5.1	6.0	7.1	6.1	4.8	3.1	1.5	0.9	44.3
NEVADA	Grass Valley	1.1	1.5	2.6	4.0	5.7	7.1	7.9	7.1	5.3	3.2	1.5	0.9	48.0
	Nevada City	1.1	1.5	2.6	3.9	5.8	6.9	7.9	7.0	5.3	3.2	1.4	0.9	47.4
ORANGE	Laguna Beach	2.2	2.7	3.4	3.8	4.6	4.6	4.9	4.9	4.4	3.4	2.4	2.0	43.2
	Santa Ana	2.2	2.7	3.7	4.5	4.6	5.4	6.2	6.1	4.7	3.7	2.5	2.0	48.2
PLACER	Auburn	1.2	1.7	2.8	4.4	6.1	7.4	8.3	7.3	5.4	3.4	1.6	1.0	50.6
	Blue Canyon	0.7	1.1	2.4	3.4	4.8	6.0	7.2	6.1	4.6	2.9	0.9	0.6	40.5
	Golfax	1.1	1.5	2.6	4.0	5.8	7.1	7.9	7.0	5.3	3.2	1.4	0.9	47.9
	Soda Springs	0.7	0.7	1.8	3.0	4.3	5.3	6.2	5.5	4.1	2.5	0.7	0.7	35.4
	Tahoe City	0.7	0.7	1.7	3.0	4.3	5.4	6.1	5.6	4.1	2.4	0.8	0.6	35.5
	Truckee	0.7	0.7	1.7	3.2	4.4	5.4	6.4	5.7	4.1	2.4	0.8	0.6	36.2
PLUMAS	Portola	0.7	0.9	1.9	3.5	4.9	5.9	7.3	5.9	4.3	2.7	0.9	0.5	39.4
	Quincy	0.7	0.9	2.2	3.5	4.9	5.9	7.3	5.9	4.4	2.8	1.2	0.5	40.2
RIVERSIDE	Beaumont	2.0	2.3	3.4	4.4	6.1	7.1	7.6	7.9	6.0	3.9	2.6	1.7	55.0
	Blythe	3.2	4.2	6.7	8.9	11.1	12.4	12.8	11.1	9.1	6.7	4.0	2.7	92.9
	Coachella	2.9	4.4	6.2	8.4	10.5	11.9	12.3	10.1	8.9	6.2	3.8	2.4	88.1
	Desert Center	2.9	4.1	6.4	8.5	11.0	12.1	12.2	11.1	9.0	6.4	3.9	2.6	90.0
	Elsinore	2.1	2.8	3.9	4.4	5.9	7.1	7.6	7.0	5.8	3.9	2.6	1.9	55.0
	Indio	2.9	4.0	6.2	8.3	10.5	11.9	12.3	10.0	8.9	6.4	3.8	2.4	87.6
	Palm Desert	2.0	3.5	4.9	7.7	8.5	10.6	9.8	9.2	8.4	6.1	2.7	1.8	75.1
	Palm Springs	2.0	2.9	4.9	7.2	8.3	8.5	11.6	8.3	7.2	5.9	2.7	1.7	71.1
	Riverside	2.1	2.9	4.0	4.1	6.1	7.1	7.9	7.6	6.1	4.2	2.6	2.0	56.6
SACRAMENTO	Roseville	1.1	1.7	3.1	4.7	6.2	7.7	8.5	7.3	5.6	3.7	1.7	1.0	52.2
	Sacramento	1.0	1.8	3.2	4.7	6.4	7.7	8.4	7.2	5.4	3.7	1.7	0.9	51.9
SAN BENITO	Hollister	1.5	1.8	3.1	4.3	5.5	5.7	6.4	5.9	5.0	3.5	1.7	1.1	45.1
SAN BERNARDINO	Baker	2.7	3.9	6.1	8.3	10.4	11.8	12.2	11.0	8.9	6.1	3.3	2.1	86.6
	Barstow	2.6	3.6	5.7	7.9	10.1	11.6	12.0	10.4	8.6	5.7	3.3	2.1	83.6
	Chino	2.1	2.9	3.9	4.5	5.7	6.5	7.3	7.1	5.9	4.2	2.6	2.0	54.6
	Grestline	1.5	1.9	3.3	4.4	5.5	6.6	7.8	7.1	5.4	3.5	2.2	1.6	50.8
	Lucerne	2.2	2.9	5.1	6.5	9.1	11.0	11.4	9.9	7.4	5.0	3.0	1.8	75.3
	Needles	3.2	4.2	6.6	8.9	11.0	12.4	12.8	11.0	8.9	6.6	4.0	2.7	92.1
	San Bernardino	2.0	2.7	3.8	4.6	5.7	6.9	7.9	7.4	5.9	4.2	2.6	2.0	55.6
	Twentynine-Victorville	2.6	3.6	5.9	7.9	10.1	11.2	11.2	10.3	8.6	5.9	3.4	2.2	82.9

County	City	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN.
SAN DIEGO	Chula Vista	2.2	2.7	3.4	3.8	4.9	4.7	5.5	4.9	4.5	3.4	2.4	2.0	44.2
	Escondido	2.4	2.8	3.8	4.7	5.6	6.7	6.8	6.5	5.4	3.8	2.5	2.0	52.6
	Oceanside	2.2	2.7	3.4	3.7	4.9	4.6	4.6	5.1	4.4	3.3	2.4	2.0	42.9
	Pine Valley	1.5	2.4	3.8	5.1	6.0	7.0	7.3	7.3	6.0	4.0	2.2	1.7	54.8
	Ramona	2.1	2.5	4.0	4.7	5.6	6.5	7.3	7.0	5.6	3.9	2.5	1.7	53.4
	San Diego	2.2	2.5	3.3	3.4	4.4	4.0	4.6	4.6	3.9	3.3	2.2	2.0	40.6
	Santee	2.4	2.7	3.7	4.5	5.5	6.4	6.6	6.2	5.4	3.8	2.6	2.0	51.4
	Warner	1.6	2.7	3.7	4.7	5.7	7.6	8.3	7.7	6.3	4.0	2.5	1.3	56.0
SAN FRANCISCO	San Francisco	1.5	1.3	2.4	3.0	3.7	4.6	4.9	4.8	4.1	2.8	1.3	0.7	35.4
SAN JOAQUIN	Farmington	1.5	1.5	2.9	4.7	6.2	7.6	8.1	6.8	5.3	3.3	1.4	0.7	50.0
	Lodi	0.9	1.5	2.9	5.1	6.5	7.0	7.7	7.7	5.2	3.1	1.3	0.7	40.5
	Manteca	1.5	1.5	3.0	4.7	6.4	7.6	8.1	6.8	5.3	3.3	1.4	0.6	50.4
	Stockton	0.8	1.5	2.9	4.7	6.2	7.4	8.1	6.8	5.3	3.2	1.4	0.6	49.4
	Tracy	1.0	1.5	2.9	4.5	6.1	7.3	7.9	6.7	5.3	3.2	1.3	0.7	48.5
SAN LUIS OBISPO	Arroyo	2.0	2.2	3.2	3.8	4.3	4.7	4.3	4.6	3.8	3.2	2.4	1.7	40.0
	Atascadero	1.2	1.5	2.8	3.9	4.5	6.0	6.7	6.2	5.0	3.2	1.7	1.0	43.7
	Morro Bay	2.0	2.2	3.1	3.5	4.3	4.5	4.6	4.6	3.8	3.5	2.4	1.7	39.9
	Paso Robles	1.6	2.0	3.2	4.3	5.5	6.3	7.3	6.7	5.4	3.7	2.4	1.4	49.0
	San Luis	2.0	2.2	3.2	4.1	4.9	5.3	4.6	5.5	4.4	3.5	2.4	1.7	43.8
	San Miguel	1.6	2.0	3.2	4.3	5.0	6.4	7.4	6.8	5.1	3.7	2.1	1.4	49.0
	San Simeon	2.0	2.0	2.9	3.5	4.2	4.4	4.6	4.3	3.5	3.4	2.0	1.7	38.4
SAN MATEO	Hal Moon Bay	1.5	1.7	2.4	3.0	3.9	4.3	4.3	4.2	3.5	2.8	1.3	1.0	33.7
	Redwood City	1.5	1.8	2.9	3.8	5.2	5.3	6.2	5.6	4.8	3.4	1.7	1.0	42.8
SANTA BARBARA	Carpenteria	2.0	2.4	3.2	3.9	4.8	5.2	5.5	5.7	4.5	3.4	2.4	2.0	44.9
	Guadalupe	2.0	2.2	3.2	3.7	4.9	4.6	4.5	4.6	4.1	3.3	2.4	1.7	41.4
	Lompoc	2.0	2.2	3.2	3.7	4.8	4.6	4.9	4.8	3.9	3.2	2.4	1.7	41.4
	Los Alamos	1.8	2.0	3.2	4.1	4.9	5.3	5.7	5.5	4.4	3.7	2.4	1.6	44.6
	Santa Barbara	2.0	2.5	3.2	3.8	4.6	5.1	5.5	4.5	3.4	2.4	1.8	1.8	40.6
	Santa Maria	1.8	2.2	3.2	4.0	5.0	5.1	5.1	5.1	4.5	3.5	2.4	1.7	43.7
	Solvang	2.0	2.0	3.3	4.3	5.0	5.6	6.1	5.6	4.4	3.7	2.2	1.6	45.6
SANTA CLARA	Gilroy	1.3	1.8	3.1	4.1	5.3	5.6	6.1	5.5	4.7	3.4	1.7	1.1	43.6
	Los Gatos	1.5	1.8	2.8	3.9	5.0	5.6	6.2	5.5	4.7	3.2	1.7	1.1	42.9
	Palo Alto	1.5	1.8	2.8	3.8	5.2	5.3	6.2	5.6	5.0	3.2	1.7	1.0	43.0
	San Jose	1.5	1.8	3.4	4.1	5.5	5.8	6.5	5.9	5.2	3.3	1.8	1.0	45.3
SANTA CRUZ	Santa Cruz	1.5	1.8	2.6	3.5	4.3	4.4	4.8	4.4	3.8	2.8	1.7	1.2	36.6
	Watsonville	1.5	1.8	2.7	3.7	4.6	4.5	4.9	4.2	4.0	2.9	1.8	1.2	37.7
SHASTA	Burney	0.7	1.0	2.1	3.5	4.9	5.9	7.4	6.4	4.4	2.9	0.9	0.6	40.9
	Fall River	0.6	1.0	2.1	3.7	5.0	6.1	7.8	6.7	4.6	2.8	0.9	0.5	41.8
	Glenburn	0.6	1.0	2.1	3.7	5.0	6.3	7.8	6.7	4.7	2.8	0.9	0.6	42.1
	Redding	1.2	1.4	2.6	4.1	5.6	7.1	8.5	7.3	5.3	3.2	1.4	0.9	48.8
SIERRA	Downieville	0.7	1.0	2.3	3.5	5.0	6.0	7.4	6.2	4.7	2.8	0.9	0.6	41.3
	Sierraville	0.7	1.1	2.2	3.2	4.5	5.9	7.3	6.4	4.3	2.6	0.9	0.5	39.6
SISKIYOU	Happy Camp	0.5	0.9	2.0	3.0	4.3	5.2	6.1	5.3	4.1	2.4	0.9	0.5	35.4
	Mt Shasta	0.5	0.9	2.0	3.0	4.5	5.3	6.7	5.7	4.0	2.2	0.7	0.5	36.0
	Tulelake	0.5	0.9	2.1	3.4	5.3	5.9	7.9	6.7	4.4	2.7	0.9	0.5	41.2
	Weed	0.5	0.9	2.0	2.5	4.5	5.3	6.7	5.5	3.7	2.0	0.9	0.5	34.9
	Yreka	0.6	0.9	2.1	3.0	4.9	5.8	7.3	6.5	4.3	2.5	0.9	0.5	39.2

County	City	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN.
SOLANO	Fairfield	1.1	1.7	2.8	4.0	5.5	6.1	7.8	6.0	4.8	3.1	1.4	0.9	45.2
	Rio Vista	0.9	1.7	2.8	4.4	5.9	6.7	7.9	6.5	5.1	3.2	1.3	0.7	47.0
SONOMA	Gloverdale	1.1	1.4	2.6	3.4	5.0	5.9	6.2	5.6	4.5	2.8	1.4	0.7	40.7
	Fort Ross	1.2	1.4	2.2	3.0	3.7	4.5	4.2	4.3	3.4	2.4	1.2	0.5	31.9
	Healdsburg	1.2	1.5	2.4	3.5	5.0	5.9	6.1	5.6	4.5	2.8	1.4	0.7	40.8
	Lincoln	1.2	1.7	2.8	4.7	6.1	7.4	8.4	7.3	5.4	3.7	1.9	1.2	51.9
	Petaluma	1.2	1.5	2.8	3.7	4.6	5.6	4.6	5.7	4.5	2.9	1.4	0.9	39.6
	Santa Rosa	1.2	1.7	2.8	3.7	5.0	6.0	6.1	5.9	4.5	2.9	1.5	0.7	42.0
STANISLAUS	La Grange	1.2	1.5	3.1	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
	Modesto	0.9	1.4	3.2	4.7	6.4	7.7	8.1	6.8	5.0	3.4	1.4	0.7	49.7
	Newman	1.0	1.5	3.2	4.6	6.2	7.4	8.1	6.7	5.0	3.4	1.4	0.7	49.3
	Oakdale	1.2	1.5	3.2	4.7	6.2	7.7	8.1	7.1	5.1	3.4	1.4	0.7	50.3
	Furlock	0.9	1.5	3.2	4.7	6.5	7.7	8.2	7.0	5.1	3.4	1.4	0.7	50.2
SUTTER	Yuba City	1.3	2.1	2.8	4.4	5.7	7.2	7.1	6.1	4.7	3.2	1.2	0.9	46.7
TEHAMA	Gorning	1.2	1.8	2.9	4.5	6.1	7.3	8.1	7.2	5.3	3.7	1.7	1.1	50.7
	Red Bluff	1.2	1.8	2.9	4.4	5.9	7.4	8.5	7.3	5.4	3.5	1.7	1.0	51.1
TOULOMNE	Groveland	1.1	1.5	2.8	4.1	5.7	7.2	7.9	6.6	5.1	3.3	1.4	0.7	47.5
	Sonora	1.1	1.5	2.8	4.1	5.8	7.2	7.9	6.7	5.1	3.2	1.4	0.7	47.6
TRINITY	Hay Fork	0.5	1.1	2.3	3.5	4.9	5.9	7.0	6.0	4.5	2.8	0.9	0.7	40.1
	Weaverville	0.6	1.1	2.2	3.3	4.9	5.9	7.3	6.0	4.4	2.7	0.9	0.7	40.0
TULARE	Alpaugh	0.9	1.7	3.4	4.8	6.6	7.7	8.2	7.3	5.4	3.4	1.4	0.7	51.6
	Badger	1.0	1.3	2.7	4.1	6.0	7.3	7.7	7.0	4.8	3.3	1.4	0.7	47.3
	Dinuba	1.1	1.5	3.2	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
	Porterville	1.2	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.3	3.4	1.4	0.7	52.1
	Visalia	1.0	1.8	3.4	5.4	7.0	8.2	8.4	7.2	5.7	3.8	1.7	0.9	54.3
VENTURA	Oxnard	2.2	2.5	3.2	3.7	4.4	4.6	5.4	4.8	4.0	3.3	2.4	2.0	42.3
	Thousand	2.2	2.6	3.4	4.5	5.4	5.9	6.7	6.4	5.4	3.9	2.6	2.0	51.0
	Ventura	2.2	2.6	3.2	3.8	4.6	4.7	5.5	4.9	4.1	3.4	2.5	2.0	43.5
YOLO	Davis	1.0	1.9	3.3	5.0	6.4	7.6	8.2	7.1	5.4	4.0	1.8	1.0	52.5
	Winters	1.7	1.7	2.9	4.4	5.8	7.1	7.9	6.7	5.3	3.3	1.6	1.0	49.4
	Woodland	1.0	1.8	3.2	4.7	6.1	7.7	8.2	7.2	5.4	3.7	1.7	1.0	51.6
YUBA	Brownsville	1.1	1.4	2.6	4.0	5.7	6.8	7.9	6.8	5.3	3.4	1.5	0.9	47.4

Appendix A - Reference Evapotranspiration (ET_o) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET_o
ALAMEDA													
Fremont	1.5	1.9	3.4	4.7	5.4	6.3	6.7	6.0	4.5	3.4	1.8	1.5	47.0
Livermore	1.2	1.5	2.9	4.4	5.9	6.6	7.4	6.4	5.3	3.2	1.5	0.9	47.2
Oakland	1.5	1.5	2.8	3.9	5.1	5.3	6.0	5.5	4.8	3.1	1.4	0.9	41.8
Oakland Foothills	1.1	1.4	2.7	3.7	5.1	6.4	5.8	4.9	3.6	2.6	1.4	1.0	39.6
Pleasanton	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
Union City	1.4	1.8	3.1	4.2	5.4	5.9	6.4	5.7	4.4	3.1	1.5	1.2	44.2
ALPINE													
Markleeville	0.7	0.9	2.0	3.5	5.0	6.1	7.3	6.4	4.4	2.6	1.2	0.5	40.6
AMADOR													
Jackson	1.2	1.5	2.8	4.4	6.0	7.2	7.9	7.2	5.3	3.2	1.4	0.9	48.9
Shanandoah Valley	1.0	1.7	2.9	4.4	5.6	6.8	7.9	7.1	5.2	3.6	1.7	1.0	48.8
BUTTE													
Chico	1.2	1.8	2.9	4.7	6.1	7.4	8.5	7.3	5.4	3.7	1.7	1.0	51.7
Durham	1.1	1.8	3.2	5.0	6.5	7.4	7.8	6.9	5.3	3.6	1.7	1.0	51.1
Gridley	1.2	1.8	3.0	4.7	6.1	7.7	8.5	7.1	5.4	3.7	1.7	1.0	51.9
Oroville	1.2	1.7	2.8	4.7	6.1	7.6	8.5	7.3	5.3	3.7	1.7	1.0	51.5
CALAVERAS													
San Andreas	1.2	1.5	2.8	4.4	6.0	7.3	7.9	7.0	5.3	3.2	1.4	0.7	48.8
COLUSA													
Colusa	1.0	1.7	3.4	5.0	6.4	7.6	8.3	7.2	5.4	3.8	1.8	1.1	52.8
Williams	1.2	1.7	2.9	4.5	6.1	7.2	8.5	7.3	5.3	3.4	1.6	1.0	50.8
CONTRA COSTA													
Benicia	1.3	1.4	2.7	3.8	4.9	5.0	6.4	5.5	4.4	2.9	1.2	0.7	40.3
Brentwood	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
Concord	1.1	1.4	2.4	4.0	5.5	5.9	7.0	6.0	4.8	3.2	1.3	0.7	43.4
Courtland	0.9	1.5	2.9	4.4	6.1	6.9	7.9	6.7	5.3	3.2	1.4	0.7	48.0
Martinez	1.2	1.4	2.4	3.9	5.3	5.6	6.7	5.6	4.7	3.1	1.2	0.7	41.8
Moraga	1.2	1.5	3.4	4.2	5.5	6.1	6.7	5.9	4.6	3.2	1.6	1.0	44.9
Pittsburg	1.0	1.5	2.8	4.1	5.6	6.4	7.4	6.4	5.0	3.2	1.3	0.7	45.4
Walnut Creek	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
DEL NORTE													
Crescent City	0.5	0.9	2.0	3.0	3.7	3.5	4.3	3.7	3.0	2.0	0.9	0.5	27.7
EL DORADO													
Camino	0.9	1.7	2.5	3.9	5.9	7.2	7.8	6.8	5.1	3.1	1.5	0.9	47.3
FRESNO													
Clovis	1.0	1.5	3.2	4.8	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.4
Coalinga	1.2	1.7	3.1	4.6	6.2	7.2	8.5	7.3	5.3	3.4	1.6	0.7	50.9
Firebaugh	1.0	1.8	3.7	5.7	7.3	8.1	8.2	7.2	5.5	3.9	2.0	1.1	55.4
FivePoints	1.3	2.0	4.0	6.1	7.7	8.5	8.7	8.0	6.2	4.5	2.4	1.2	60.4
Fresno	0.9	1.7	3.3	4.8	6.7	7.8	8.4	7.1	5.2	3.2	1.4	0.6	51.1
Fresno State	0.9	1.6	3.2	5.2	7.0	8.0	8.7	7.6	5.4	3.6	1.7	0.9	53.7
Friant	1.2	1.5	3.1	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
Kerman	0.9	1.5	3.2	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.2
Kingsburg	1.0	1.5	3.4	4.8	6.6	7.7	8.4	7.2	5.3	3.4	1.4	0.7	51.6
Mendota	1.5	2.5	4.6	6.2	7.9	8.6	8.8	7.5	5.9	4.5	2.4	1.5	61.7
Orange Cove	1.2	1.9	3.5	4.7	7.4	8.5	8.9	7.9	5.9	3.7	1.8	1.2	56.7
Panoche	1.1	2.0	4.0	5.6	7.8	8.5	8.3	7.3	5.6	3.9	1.8	1.2	57.2
Parlier	1.0	1.9	3.6	5.2	6.8	7.6	8.1	7.0	5.1	3.4	1.7	0.9	52.0
Reedley	1.1	1.5	3.2	4.7	6.4	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.3
Westlands	0.9	1.7	3.8	6.3	8.0	8.6	8.6	7.8	5.9	4.3	2.1	1.1	58.8

Appendix A - Reference Evapotranspiration (ETo) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
GLENN													
Orland	1.1	1.8	3.4	5.0	6.4	7.5	7.9	6.7	5.3	3.9	1.8	1.4	52.1
Willows	1.2	1.7	2.9	4.7	6.1	7.2	8.5	7.3	5.3	3.6	1.7	1.0	51.3
HUMBOLDT													
Eureka	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
Ferndale	0.5	1.1	2.0	3.0	3.7	3.7	3.7	3.7	3.0	2.0	0.9	0.5	27.5
Garberville	0.6	1.2	2.2	3.1	4.5	5.0	5.5	4.9	3.8	2.4	1.0	0.7	34.9
Hoopla	0.5	1.1	2.1	3.0	4.4	5.4	6.1	5.1	3.8	2.4	0.9	0.7	35.6
IMPERIAL													
Brawley	2.8	3.8	5.9	8.0	10.4	11.5	11.7	10.0	8.4	6.2	3.5	2.1	84.2
Calipatria/Mulberry	2.4	3.2	5.1	6.8	8.6	9.2	9.2	8.6	7.0	5.2	3.1	2.3	70.7
El Centro	2.7	3.5	5.6	7.9	10.1	11.1	11.6	9.5	8.3	6.1	3.3	2.0	81.7
Holtville	2.8	3.8	5.9	7.9	10.4	11.6	12.0	10.0	8.6	6.2	3.5	2.1	84.7
Meloland	2.5	3.2	5.5	7.5	8.9	9.2	9.0	8.5	6.8	5.3	3.1	2.2	71.6
Palo Verde II	2.5	3.3	5.7	6.9	8.5	8.9	8.6	7.9	6.2	4.5	2.9	2.3	68.2
Seeley	2.7	3.5	5.9	7.7	9.7	10.1	9.3	8.3	6.9	5.5	3.4	2.2	75.4
Westmoreland	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Yuma	2.5	3.4	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.6
INYO													
Bishop	1.7	2.7	4.8	6.7	8.2	10.9	7.4	9.6	7.4	4.8	2.5	1.6	68.3
Death Valley Jct	2.2	3.3	5.4	7.7	9.8	11.1	11.4	10.1	8.3	5.4	2.9	1.7	79.1
Independence	1.7	2.7	3.4	6.6	8.5	9.5	9.8	8.5	7.1	3.9	2.0	1.5	65.2
Lower Haiwee Res.	1.8	2.7	4.4	7.1	8.5	9.5	9.8	8.5	7.1	4.2	2.6	1.5	67.6
Oasis	2.7	2.8	5.9	8.0	10.4	11.7	11.6	10.0	8.4	6.2	3.4	2.1	83.1
KERN													
Arvin	1.2	1.8	3.5	4.7	6.6	7.4	8.1	7.3	5.3	3.4	1.7	1.0	51.9
Bakersfield	1.0	1.8	3.5	4.7	6.6	7.7	8.5	7.3	5.3	3.5	1.6	0.9	52.4
Bakersfield/Bonanza	1.2	2.2	3.7	5.7	7.4	8.2	8.7	7.8	5.7	4.0	2.1	1.2	57.9
Bakersfield/Greenlee	1.2	2.2	3.7	5.7	7.4	8.2	8.7	7.8	5.7	4.0	2.1	1.2	57.9
Belridge	1.4	2.2	4.1	5.5	7.7	8.5	8.6	7.8	6.0	3.8	2.0	1.5	59.2
Blackwells Corner	1.4	2.1	3.8	5.4	7.0	7.8	8.5	7.7	5.8	3.9	1.9	1.2	56.6
Buttonwillow	1.0	1.8	3.2	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.5	0.9	52.0
China Lake	2.1	3.2	5.3	7.7	9.2	10.0	11.0	9.8	7.3	4.9	2.7	1.7	74.8
Delano	0.9	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.4	3.4	1.4	0.7	52.0
Famoso	1.3	1.9	3.5	4.8	6.7	7.6	8.0	7.3	5.5	3.5	1.7	1.3	53.1
Grapevine	1.3	1.8	3.1	4.4	5.6	6.8	7.6	6.8	5.9	3.4	1.9	1.0	49.5
Inyokern	2.0	3.1	4.9	7.3	8.5	9.7	11.0	9.4	7.1	5.1	2.6	1.7	72.4
Isabella Dam	1.2	1.4	2.8	4.4	5.8	7.3	7.9	7.0	5.0	3.2	1.7	0.9	48.4
Lamont	1.3	2.4	4.4	4.6	6.5	7.0	8.8	7.6	5.7	3.7	1.6	0.8	54.4
Lost Hills	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
McFarland/Kern	1.2	2.1	3.7	5.6	7.3	8.0	8.3	7.4	5.6	4.1	2.0	1.2	56.5
Shafter	1.0	1.7	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.5	0.9	52.1
Taft	1.3	1.8	3.1	4.3	6.2	7.3	8.5	7.3	5.4	3.4	1.7	1.0	51.2
Tehachapi	1.4	1.8	3.2	5.0	6.1	7.7	7.9	7.3	5.9	3.4	2.1	1.2	52.9
KINGS													
Caruthers	1.6	2.5	4.0	5.7	7.8	8.7	9.3	8.4	6.3	4.4	2.4	1.6	62.7
Corcoran	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Hanford	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.2	5.4	3.4	1.4	0.7	51.5
Kettleman	1.1	2.0	4.0	6.0	7.5	8.5	9.1	8.2	6.1	4.5	2.2	1.1	60.2
Lemoore	0.9	1.5	3.4	5.0	6.6	7.7	8.3	7.3	5.4	3.4	1.4	0.7	51.7
Stratford	0.9	1.9	3.9	6.1	7.8	8.6	8.8	7.7	5.9	4.1	2.1	1.0	58.7

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
LAKE													
Lakeport	1.1	1.3	2.6	3.5	5.1	6.0	7.3	6.1	4.7	2.9	1.2	0.9	42.8
Lower Lake	1.2	1.4	2.7	4.5	5.3	6.3	7.4	6.4	5.0	3.1	1.3	0.9	45.4
LASSEN													
Buntingville	1.0	1.7	3.5	4.9	6.2	7.3	8.4	7.5	5.4	3.4	1.5	0.9	51.8
Ravendale	0.6	1.1	2.3	4.1	5.6	6.7	7.9	7.3	4.7	2.8	1.2	0.5	44.9
Susanville	0.7	1.0	2.2	4.1	5.6	6.5	7.8	7.0	4.6	2.8	1.2	0.5	44.0
LOS ANGELES													
Burbank	2.1	2.8	3.7	4.7	5.1	6.0	6.6	6.7	5.4	4.0	2.6	2.0	51.7
Claremont	2.0	2.3	3.4	4.6	5.0	6.0	7.0	7.0	5.3	4.0	2.7	2.1	51.3
El Dorado	1.7	2.2	3.6	4.8	5.1	5.7	5.9	5.9	4.4	3.2	2.2	1.7	46.3
Glendale	2.0	2.2	3.3	3.8	4.7	4.8	5.7	5.6	4.3	3.3	2.2	1.8	43.7
Glendora	2.0	2.5	3.6	4.9	5.4	6.1	7.3	6.8	5.7	4.2	2.6	2.0	53.1
Gorman	1.6	2.2	3.4	4.6	5.5	7.4	7.7	7.1	5.9	3.6	2.4	1.1	52.4
Hollywood Hills	2.1	2.2	3.8	5.4	6.0	6.5	6.7	6.4	5.2	3.7	2.8	2.1	52.8
Lancaster	2.1	3.0	4.6	5.9	8.5	9.7	11.0	9.8	7.3	4.6	2.8	1.7	71.1
Long Beach	1.8	2.1	3.3	3.9	4.5	4.3	5.3	4.7	3.7	2.8	1.8	1.5	39.7
Los Angeles	2.2	2.7	3.7	4.7	5.5	5.8	6.2	5.9	5.0	3.9	2.6	1.9	50.1
Monrovia	2.2	2.3	3.8	4.3	5.5	5.9	6.9	6.4	5.1	3.2	2.5	2.0	50.2
Palmdale	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.2
Pasadena	2.1	2.7	3.7	4.7	5.1	6.0	7.1	6.7	5.6	4.2	2.6	2.0	52.3
Pearblossom	1.7	2.4	3.7	4.7	7.3	7.7	9.9	7.9	6.4	4.0	2.6	1.6	59.9
Pomona	1.7	2.0	3.4	4.5	5.0	5.8	6.5	6.4	4.7	3.5	2.3	1.7	47.5
Redondo Beach	2.2	2.4	3.3	3.8	4.5	4.7	5.4	4.8	4.4	2.8	2.4	2.0	42.6
San Fernando	2.0	2.7	3.5	4.6	5.5	5.9	7.3	6.7	5.3	3.9	2.6	2.0	52.0
Santa Clarita	2.8	2.8	4.1	5.6	6.0	6.8	7.6	7.8	5.8	5.2	3.7	3.2	61.5
Santa Monica	1.8	2.1	3.3	4.5	4.7	5.0	5.4	5.4	3.9	3.4	2.4	2.2	44.2
MADERA													
Chowchilla	1.0	1.4	3.2	4.7	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.4
Madera	0.9	1.4	3.2	4.8	6.6	7.8	8.5	7.3	5.3	3.4	1.4	0.7	51.5
Raymond	1.2	1.5	3.0	4.6	6.1	7.6	8.4	7.3	5.2	3.4	1.4	0.7	50.5
MARIN													
Black Point	1.1	1.7	3.0	4.2	5.2	6.2	6.6	5.8	4.3	2.8	1.3	0.9	43.0
Novato	1.3	1.5	2.4	3.5	4.4	6.0	5.9	5.4	4.4	2.8	1.4	0.7	39.8
Point San Pedro	1.1	1.7	3.0	4.2	5.2	6.2	6.6	5.8	4.3	2.8	1.3	0.9	43.0
San Rafael	1.2	1.3	2.4	3.3	4.0	4.8	4.8	4.9	4.3	2.7	1.3	0.7	35.8
MARIPOSA													
Coulterville	1.1	1.5	2.8	4.4	5.9	7.3	8.1	7.0	5.3	3.4	1.4	0.7	48.8
Mariposa	1.1	1.5	2.8	4.4	5.9	7.4	8.2	7.1	5.0	3.4	1.4	0.7	49.0
Yosemite Village	0.7	1.0	2.3	3.7	5.1	6.5	7.1	6.1	4.4	2.9	1.1	0.6	41.4
MENDOCINO													
Fort Bragg	0.9	1.3	2.2	3.0	3.7	3.5	3.7	3.7	3.0	2.3	1.2	0.7	29.0
Hopland	1.1	1.3	2.6	3.4	5.0	5.9	6.5	5.7	4.5	2.8	1.3	0.7	40.9
Point Arena	1.0	1.3	2.3	3.0	3.7	3.9	3.7	3.7	3.0	2.3	1.2	0.7	29.6
Sanel Valley	1.0	1.6	3.0	4.6	6.0	7.0	8.0	7.0	5.2	3.4	1.4	0.9	49.1
Ukiah	1.0	1.3	2.6	3.3	5.0	5.8	6.7	5.9	4.5	2.8	1.3	0.7	40.9
MERCED													
Kesterson	0.9	1.7	3.4	5.5	7.3	8.2	8.6	7.4	5.5	3.8	1.8	0.9	55.1
Los Banos	1.0	1.5	3.2	4.7	6.1	7.4	8.2	7.0	5.3	3.4	1.4	0.7	50.0
Merced	1.0	1.5	3.2	4.7	6.6	7.9	8.5	7.2	5.3	3.4	1.4	0.7	51.5

Appendix A - Reference Evapotranspiration (ET_o) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET_o
MODOC													
Modoc/Alturas	0.9	1.4	2.8	3.7	5.1	6.2	7.5	6.6	4.6	2.8	1.2	0.7	43.2
MONO													
Bridgeport	0.7	0.9	2.2	3.8	5.5	6.6	7.4	6.7	4.7	2.7	1.2	0.5	43.0
MONTEREY													
Arroyo Seco	1.5	2.0	3.7	5.4	6.3	7.3	7.2	6.7	5.0	3.9	2.0	1.6	52.6
Castroville	1.4	1.7	3.0	4.2	4.6	4.8	4.0	3.8	3.0	2.6	1.6	1.4	36.2
Gonzales	1.3	1.7	3.4	4.7	5.4	6.3	6.3	5.9	4.4	3.4	1.9	1.3	45.7
Greenfield	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
King City	1.7	2.0	3.4	4.4	4.4	5.6	6.1	6.7	6.5	5.2	2.2	1.3	49.6
King City-Oasis Rd.	1.4	1.9	3.6	5.3	6.5	7.3	7.4	6.8	5.1	4.0	2.0	1.5	52.7
Long Valley	1.5	1.9	3.2	4.1	5.8	6.5	7.3	6.7	5.3	3.6	2.0	1.2	49.1
Monterey	1.7	1.8	2.7	3.5	4.0	4.1	4.3	4.2	3.5	2.8	1.9	1.5	36.0
Pajaro	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.1
Salinas	1.6	1.9	2.7	3.8	4.8	4.7	5.0	4.5	4.0	2.9	1.9	1.3	39.1
Salinas North	1.2	1.5	2.9	4.1	4.6	5.2	4.5	4.3	3.2	2.8	1.5	1.2	36.9
San Ardo	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
San Juan	1.8	2.1	3.4	4.6	5.3	5.7	5.5	4.9	3.8	3.2	2.2	1.9	44.2
Soledad	1.7	2.0	3.4	4.4	5.5	5.4	6.5	6.2	5.2	3.7	2.2	1.5	47.7
NAPA													
Angwin	1.8	1.9	3.2	4.7	5.8	7.3	8.1	7.1	5.5	4.5	2.9	2.1	54.9
Carneros	0.8	1.5	3.1	4.6	5.5	6.6	6.9	6.2	4.7	3.5	1.4	1.0	45.8
Oakville	1.0	1.5	2.9	4.7	5.8	6.9	7.2	6.4	4.9	3.5	1.6	1.2	47.7
St Helena	1.2	1.5	2.8	3.9	5.1	6.1	7.0	6.2	4.8	3.1	1.4	0.9	44.1
Yountville	1.3	1.7	2.8	3.9	5.1	6.0	7.1	6.1	4.8	3.1	1.5	0.9	44.3
NEVADA													
Grass Valley	1.1	1.5	2.6	4.0	5.7	7.1	7.9	7.1	5.3	3.2	1.5	0.9	48.0
Nevada City	1.1	1.5	2.6	3.9	5.8	6.9	7.9	7.0	5.3	3.2	1.4	0.9	47.4
ORANGE													
Irvine	2.2	2.5	3.7	4.7	5.2	5.9	6.3	6.2	4.6	3.7	2.6	2.3	49.6
Laguna Beach	2.2	2.7	3.4	3.8	4.6	4.6	4.9	4.9	4.4	3.4	2.4	2.0	43.2
Santa Ana	2.2	2.7	3.7	4.5	4.6	5.4	6.2	6.1	4.7	3.7	2.5	2.0	48.2
PLACER													
Auburn	1.2	1.7	2.8	4.4	6.1	7.4	8.3	7.3	5.4	3.4	1.6	1.0	50.6
Blue Canyon	0.7	1.1	2.1	3.4	4.8	6.0	7.2	6.1	4.6	2.9	0.9	0.6	40.5
Colfax	1.1	1.5	2.6	4.0	5.8	7.1	7.9	7.0	5.3	3.2	1.4	0.9	47.9
Roseville	1.1	1.7	3.1	4.7	6.2	7.7	8.5	7.3	5.6	3.7	1.7	1.0	52.2
Soda Springs	0.7	0.7	1.8	3.0	4.3	5.3	6.2	5.5	4.1	2.5	0.7	0.7	35.4
Tahoe City	0.7	0.7	1.7	3.0	4.3	5.4	6.1	5.6	4.1	2.4	0.8	0.6	35.5
Truckee	0.7	0.7	1.7	3.2	4.4	5.4	6.4	5.7	4.1	2.4	0.8	0.6	36.2
PLUMAS													
Portola	0.7	0.9	1.9	3.5	4.9	5.9	7.3	5.9	4.3	2.7	0.9	0.5	39.4
Quincy	0.7	0.9	2.2	3.5	4.9	5.9	7.3	5.9	4.4	2.8	1.2	0.5	40.2
RIVERSIDE													
Beaumont	2.0	2.3	3.4	4.4	6.1	7.1	7.6	7.9	6.0	3.9	2.6	1.7	55.0
Blythe	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Cathedral City	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Coachella	2.9	4.4	6.2	8.4	10.5	11.9	12.3	10.1	8.9	6.2	3.8	2.4	88.1
Desert Center	2.9	4.1	6.4	8.5	11.0	12.1	12.2	11.1	9.0	6.4	3.9	2.6	90.0
Elsinore	2.1	2.8	3.9	4.4	5.9	7.1	7.6	7.0	5.8	3.9	2.6	1.9	55.0
Indio	3.1	3.6	6.5	8.3	10.5	11.0	10.8	9.7	8.3	5.9	3.7	2.7	83.9

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
RIVERSIDE													
La Quinta	2.4	2.8	5.2	6.5	8.3	8.7	8.5	7.9	6.5	4.5	2.7	2.2	66.2
Mecca	2.6	3.3	5.7	7.2	8.6	9.0	8.8	8.2	6.8	5.0	3.2	2.4	70.8
Oasis	2.9	3.3	5.3	6.1	8.5	8.9	8.7	7.9	6.9	4.8	2.9	2.3	68.4
Palm Deser	2.5	3.4	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.6
Palm Springs	2.0	2.9	4.9	7.2	8.3	8.5	11.6	8.3	7.2	5.9	2.7	1.7	71.1
Rancho California	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
Rancho Mirage	2.4	3.3	5.3	6.9	8.7	9.6	9.6	8.7	6.9	5.0	3.0	2.2	71.4
Ripley	2.7	3.3	5.6	7.2	8.7	8.7	8.4	7.6	6.2	4.6	2.8	2.2	67.8
Salton Sea North	2.5	3.3	5.5	7.2	8.8	9.3	9.2	8.5	6.8	5.2	3.1	2.3	71.7
Temecula East II	2.3	2.4	4.1	4.9	6.4	7.0	7.8	7.4	5.7	4.1	2.6	2.2	56.7
Thermal	2.4	3.3	5.5	7.6	9.1	9.6	9.3	8.6	7.1	5.2	3.1	2.1	72.8
Riverside UC	2.5	2.9	4.2	5.3	5.9	6.6	7.2	6.9	5.4	4.1	2.9	2.6	56.4
Winchester	2.3	2.4	4.1	4.9	6.4	6.9	7.7	7.5	6.0	3.9	2.6	2.1	56.8
SACRAMENTO													
Fair Oaks	1.0	1.6	3.4	4.1	6.5	7.5	8.1	7.1	5.2	3.4	1.5	1.0	50.5
Sacramento	1.0	1.8	3.2	4.7	6.4	7.7	8.4	7.2	5.4	3.7	1.7	0.9	51.9
Twitchell Island	1.2	1.8	3.9	5.3	7.4	8.8	9.1	7.8	5.9	3.8	1.7	1.2	57.9
SAN BENITO													
Hollister	1.5	1.8	3.1	4.3	5.5	5.7	6.4	5.9	5.0	3.5	1.7	1.1	45.1
San Benito	1.2	1.6	3.1	4.6	5.6	6.4	6.9	6.5	4.8	3.7	1.7	1.2	47.2
San Juan Valley	1.4	1.8	3.4	4.5	6.0	6.7	7.1	6.4	5.0	3.5	1.8	1.4	49.1
SAN BERNARDINO													
Baker	2.7	3.9	6.1	8.3	10.4	11.8	12.2	11.0	8.9	6.1	3.3	2.1	86.6
Barstow NE	2.2	2.9	5.3	6.9	9.0	10.1	9.9	8.9	6.8	4.8	2.7	2.1	71.7
Big Bear Lake	1.8	2.6	4.6	6.0	7.0	7.6	8.1	7.4	5.4	4.1	2.4	1.8	58.6
Chino	2.1	2.9	3.9	4.5	5.7	6.5	7.3	7.1	5.9	4.2	2.6	2.0	54.6
Crestline	1.5	1.9	3.3	4.4	5.5	6.6	7.8	7.1	5.4	3.5	2.2	1.6	50.8
Lake Arrowhead	1.8	2.6	4.6	6.0	7.0	7.6	8.1	7.4	5.4	4.1	2.4	1.8	58.6
Lucerne Valley	2.2	2.9	5.1	6.5	9.1	11.0	11.4	9.9	7.4	5.0	3.0	1.8	75.3
Needles	3.2	4.2	6.6	8.9	11.0	12.4	12.8	11.0	8.9	6.6	4.0	2.7	92.1
Newberry Springs	2.1	2.9	5.3	8.4	9.8	10.9	11.1	9.9	7.6	5.2	3.1	2.0	78.2
San Bernardino	2.0	2.7	3.8	4.6	5.7	6.9	7.9	7.4	5.9	4.2	2.6	2.0	55.6
Twentynine Palms	2.6	3.6	5.9	7.9	10.1	11.2	11.2	10.3	8.6	5.9	3.4	2.2	82.9
Victorville	2.0	2.6	4.6	6.2	7.3	8.9	9.8	9.0	6.5	4.7	2.7	2.1	66.2
SAN DIEGO													
Chula Vista	2.2	2.7	3.4	3.8	4.9	4.7	5.5	4.9	4.5	3.4	2.4	2.0	44.2
Escondido SPV	2.4	2.6	3.9	4.7	5.9	6.5	7.1	6.7	5.3	3.9	2.8	2.3	54.2
Miramar	2.3	2.5	3.7	4.1	5.1	5.4	6.1	5.8	4.5	3.3	2.4	2.1	47.1
Oceanside	2.2	2.7	3.4	3.7	4.9	4.6	4.6	5.1	4.1	3.3	2.4	2.0	42.9
Otay Lake	2.3	2.7	3.9	4.6	5.6	5.9	6.2	6.1	4.8	3.7	2.6	2.2	50.4
Pine Valley	1.5	2.4	3.8	5.1	6.0	7.0	7.8	7.3	6.0	4.0	2.2	1.7	54.8
Ramona	2.1	2.1	3.4	4.6	5.2	6.3	6.7	6.8	5.3	4.1	2.8	2.1	51.6
San Diego	2.1	2.4	3.4	4.6	5.1	5.3	5.7	5.6	4.3	3.6	2.4	2.0	46.5
Santee	2.1	2.7	3.7	4.5	5.5	6.1	6.6	6.2	5.4	3.8	2.6	2.0	51.1
Torrey Pines	2.2	2.3	3.4	3.9	4.0	4.1	4.6	4.7	3.8	2.8	2.0	2.0	39.8
Warner Springs	1.6	2.7	3.7	4.7	5.7	7.6	8.3	7.7	6.3	4.0	2.5	1.3	56.0
SAN FRANCISCO													
San Francisco	1.5	1.3	2.4	3.0	3.7	4.6	4.9	4.8	4.1	2.8	1.3	0.7	35.1
SAN JOAQUIN													
Farmington	1.5	1.5	2.9	4.7	6.2	7.6	8.1	6.8	5.3	3.3	1.4	0.7	50.0

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
SAN JOAQUIN													
Lodi West	1.0	1.6	3.3	4.3	6.3	6.9	7.3	6.4	4.5	3.0	1.4	0.8	46.7
Manteca	0.9	1.7	3.4	5.0	6.5	7.5	8.0	7.1	5.2	3.3	1.6	0.9	51.2
Stockton	0.8	1.5	2.9	4.7	6.2	7.4	8.1	6.8	5.3	3.2	1.4	0.6	49.1
Tracy	1.0	1.5	2.9	4.5	6.1	7.3	7.9	6.7	5.3	3.2	1.3	0.7	48.5
SAN LUIS OBISPO													
Arroyo Grande	2.0	2.2	3.2	3.8	4.3	4.7	4.3	4.6	3.8	3.2	2.4	1.7	40.0
Atascadero	1.2	1.5	2.8	3.9	4.5	6.0	6.7	6.2	5.0	3.2	1.7	1.0	43.7
Morro Bay	2.0	2.2	3.1	3.5	4.3	4.5	4.6	4.6	3.8	3.5	2.1	1.7	39.9
Nipomo	2.2	2.5	3.8	5.1	5.7	6.2	6.4	6.1	4.9	4.1	2.9	2.3	52.1
Paso Robles	1.6	2.0	3.2	4.3	5.5	6.3	7.3	6.7	5.1	3.7	2.1	1.4	49.0
San Luis Obispo	2.0	2.2	3.2	4.1	4.9	5.3	4.6	5.5	4.4	3.5	2.4	1.7	43.8
San Miguel	1.6	2.0	3.2	4.3	5.0	6.4	7.4	6.8	5.1	3.7	2.1	1.4	49.0
San Simeon	2.0	2.0	2.9	3.5	4.2	4.4	4.6	4.3	3.5	3.1	2.0	1.7	38.1
SAN MATEO													
Hal Moon Bay	1.5	1.7	2.4	3.0	3.9	4.3	4.3	4.2	3.5	2.8	1.3	1.0	33.7
Redwood City	1.5	1.8	2.9	3.8	5.2	5.3	6.2	5.6	4.8	3.1	1.7	1.0	42.8
Woodside	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
SANTA BARBARA													
Betteravia	2.1	2.6	4.0	5.2	6.0	5.9	5.8	5.4	4.1	3.3	2.7	2.1	49.1
Carpenteria	2.0	2.4	3.2	3.9	4.8	5.2	5.5	5.7	4.5	3.4	2.4	2.0	44.9
Cuyama	2.1	2.4	3.8	5.4	6.9	7.9	8.5	7.7	5.9	4.5	2.6	2.0	59.7
Goleta	2.1	2.5	3.9	5.1	5.7	5.7	5.4	5.4	4.2	3.2	2.8	2.2	48.1
Goleta Foothills	2.3	2.6	3.7	5.4	5.3	5.6	5.5	5.7	4.5	3.9	2.8	2.3	49.6
Guadalupe	2.0	2.2	3.2	3.7	4.9	4.6	4.5	4.6	4.1	3.3	2.4	1.7	41.1
Lompoc	2.0	2.2	3.2	3.7	4.8	4.6	4.9	4.8	3.9	3.2	2.4	1.7	41.1
Los Alamos	1.8	2.0	3.2	4.1	4.9	5.3	5.7	5.5	4.4	3.7	2.4	1.6	44.6
Santa Barbara	2.0	2.5	3.2	3.8	4.6	5.1	5.5	4.5	3.4	2.4	1.8	1.8	40.6
Santa Maria	1.8	2.3	3.7	5.1	5.7	5.8	5.6	5.3	4.2	3.5	2.4	1.9	47.4
Santa Ynez	1.7	2.2	3.5	5.0	5.8	6.2	6.4	6.0	4.5	3.6	2.2	1.7	48.7
Sisquoc	2.1	2.5	3.8	4.1	6.1	6.3	6.4	5.8	4.7	3.4	2.3	1.8	49.2
Solvang	2.0	2.0	3.3	4.3	5.0	5.6	6.1	5.6	4.4	3.7	2.2	1.6	45.6
SANTA CLARA													
Gilroy	1.3	1.8	3.1	4.1	5.3	5.6	6.1	5.5	4.7	3.4	1.7	1.1	43.6
Los Gatos	1.5	1.8	2.8	3.9	5.0	5.6	6.2	5.5	4.7	3.2	1.7	1.1	42.9
Morgan Hill	1.5	1.8	3.4	4.2	6.3	7.0	7.1	6.0	5.1	3.7	1.9	1.4	49.5
Palo Alto	1.5	1.8	2.8	3.8	5.2	5.3	6.2	5.6	5.0	3.2	1.7	1.0	43.0
San Jose	1.5	1.8	3.1	4.1	5.5	5.8	6.5	5.9	5.2	3.3	1.8	1.0	45.3
SANTA CRUZ													
De Laveaga	1.4	1.9	3.3	4.7	4.9	5.3	5.0	4.8	3.6	3.0	1.6	1.3	40.8
Green Valley Rd	1.2	1.8	3.2	4.5	4.6	5.4	5.2	5.0	3.7	3.1	1.6	1.3	40.6
Santa Cruz	1.5	1.8	2.6	3.5	4.3	4.4	4.8	4.4	3.8	2.8	1.7	1.2	36.6
Watsonville	1.5	1.8	2.7	3.7	4.6	4.5	4.9	4.2	4.0	2.9	1.8	1.2	37.7
Webb	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.2
SHASTA													
Burney	0.7	1.0	2.1	3.5	4.9	5.9	7.4	6.4	4.4	2.9	0.9	0.6	40.9
Fall River Mills	0.6	1.0	2.1	3.7	5.0	6.1	7.8	6.7	4.6	2.8	0.9	0.5	41.8
Glenburn	0.6	1.0	2.1	3.7	5.0	6.3	7.8	6.7	4.7	2.8	0.9	0.6	42.1
McArthur	0.7	1.4	2.9	4.2	5.6	6.9	8.2	7.2	5.0	3.0	1.1	0.6	46.8
Redding	1.2	1.4	2.6	4.1	5.6	7.1	8.5	7.3	5.3	3.2	1.4	0.9	48.8

Appendix A - Reference Evapotranspiration (ET_o) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET _o
SIERRA													
Downieville	0.7	1.0	2.3	3.5	5.0	6.0	7.4	6.2	4.7	2.8	0.9	0.6	41.3
Sierraville	0.7	1.1	2.2	3.2	4.5	5.9	7.3	6.4	4.3	2.6	0.9	0.5	39.6
SISKIYOU													
Happy Camp	0.5	0.9	2.0	3.0	4.3	5.2	6.1	5.3	4.1	2.4	0.9	0.5	35.1
MacDoel	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
Mt Shasta	0.5	0.9	2.0	3.0	4.5	5.3	6.7	5.7	4.0	2.2	0.7	0.5	36.0
Tule lake FS	0.7	1.3	2.7	4.0	5.4	6.3	7.1	6.4	4.7	2.8	1.0	0.6	42.9
Weed	0.5	0.9	2.0	2.5	4.5	5.3	6.7	5.5	3.7	2.0	0.9	0.5	34.9
Yreka	0.6	0.9	2.1	3.0	4.9	5.8	7.3	6.5	4.3	2.5	0.9	0.5	39.2
SOLANO													
Dixon	0.7	1.4	3.2	5.2	6.3	7.6	8.2	7.2	5.5	4.3	1.6	1.1	52.1
Fairfield	1.1	1.7	2.8	4.0	5.5	6.1	7.8	6.0	4.8	3.1	1.4	0.9	45.2
Hastings Tract	1.6	2.2	3.7	5.1	6.8	7.8	8.7	7.8	5.7	4.0	2.1	1.6	57.1
Putah Creek	1.0	1.6	3.2	4.9	6.1	7.3	7.9	7.0	5.3	3.8	1.8	1.2	51.0
Rio Vista	0.9	1.7	2.8	4.4	5.9	6.7	7.9	6.5	5.1	3.2	1.3	0.7	47.0
Suisun Valley	0.6	1.3	3.0	4.7	5.8	7.0	7.7	6.8	5.3	3.8	1.4	0.9	48.3
Winters	0.9	1.7	3.3	5.0	6.4	7.5	7.9	7.0	5.2	3.5	1.6	1.0	51.0
SONOMA													
Bennett Valley	1.1	1.7	3.2	4.1	5.5	6.5	6.6	5.7	4.5	3.1	1.5	0.9	44.4
Cloverdale	1.1	1.4	2.6	3.4	5.0	5.9	6.2	5.6	4.5	2.8	1.4	0.7	40.7
Fort Ross	1.2	1.4	2.2	3.0	3.7	4.5	4.2	4.3	3.4	2.4	1.2	0.5	31.9
Healdsburg	1.2	1.5	2.4	3.5	5.0	5.9	6.1	5.6	4.5	2.8	1.4	0.7	40.8
Lincoln	1.2	1.7	2.8	4.7	6.1	7.4	8.4	7.3	5.4	3.7	1.9	1.2	51.9
Petaluma	1.2	1.5	2.8	3.7	4.6	5.6	4.6	5.7	4.5	2.9	1.4	0.9	39.6
Santa Rosa	1.2	1.7	2.8	3.7	5.0	6.0	6.1	5.9	4.5	2.9	1.5	0.7	42.0
Valley of the Moon	1.0	1.6	3.0	4.5	5.6	6.6	7.1	6.3	4.7	3.3	1.5	1.0	46.1
Windsor	0.9	1.6	3.0	4.5	5.5	6.5	6.5	5.9	4.4	3.2	1.4	1.0	44.2
STANISLAUS													
Denair	1.0	1.9	3.6	4.7	7.0	7.9	8.0	6.1	5.3	3.4	1.5	1.0	51.4
La Grange	1.2	1.5	3.1	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
Modesto	0.9	1.4	3.2	4.7	6.4	7.7	8.1	6.8	5.0	3.4	1.4	0.7	49.7
Newman	1.0	1.5	3.2	4.6	6.2	7.4	8.1	6.7	5.0	3.4	1.4	0.7	49.3
Oakdale	1.2	1.5	3.2	4.7	6.2	7.7	8.1	7.1	5.1	3.4	1.4	0.7	50.3
Patterson	1.3	2.1	4.2	5.4	7.9	8.6	8.2	6.6	5.8	4.0	1.9	1.3	57.3
Turlock	0.9	1.5	3.2	4.7	6.5	7.7	8.2	7.0	5.1	3.4	1.4	0.7	50.2
SUTTER													
Nicolaus	0.9	1.6	3.2	4.9	6.3	7.5	8.0	6.9	5.2	3.4	1.5	0.9	50.2
Yuba City	1.3	2.1	2.8	4.4	5.7	7.2	7.1	6.1	4.7	3.2	1.2	0.9	46.7
TEHAMA													
Corning	1.2	1.8	2.9	4.5	6.1	7.3	8.1	7.2	5.3	3.7	1.7	1.1	50.7
Gerber	1.0	1.8	3.5	5.0	6.6	7.9	8.7	7.4	5.8	4.1	1.8	1.1	54.7
Gerber Dryland	0.9	1.6	3.2	4.7	6.7	8.4	9.0	7.9	6.0	4.2	2.0	1.0	55.5
Red Bluff	1.2	1.8	2.9	4.4	5.9	7.4	8.5	7.3	5.4	3.5	1.7	1.0	51.1
TRINITY													
Hay Fork	0.5	1.1	2.3	3.5	4.9	5.9	7.0	6.0	4.5	2.8	0.9	0.7	40.1
Weaverville	0.6	1.1	2.2	3.3	4.9	5.9	7.3	6.0	4.4	2.7	0.9	0.7	40.0
TULARE													
Alpaugh	0.9	1.7	3.4	4.8	6.6	7.7	8.2	7.3	5.4	3.4	1.4	0.7	51.6
Badger	1.0	1.3	2.7	4.1	6.0	7.3	7.7	7.0	4.8	3.3	1.4	0.7	47.3
Delano	1.1	1.9	4.0	4.9	7.2	7.9	8.1	7.3	5.4	3.2	1.5	1.2	53.6

Appendix A - Reference Evapotranspiration (ET_o) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ET_o
TULARE													
Dinuba	1.1	1.5	3.2	4.7	6.2	7.7	8.5	7.3	5.3	3.4	1.4	0.7	51.2
Lindcove	0.9	1.6	3.0	4.8	6.5	7.6	8.1	7.2	5.2	3.4	1.6	0.9	50.6
Porterville	1.2	1.8	3.4	4.7	6.6	7.7	8.5	7.3	5.3	3.4	1.4	0.7	52.1
Visalia	0.9	1.7	3.3	5.1	6.8	7.7	7.9	6.9	4.9	3.2	1.5	0.8	50.7
TUOLUMNE													
Groveland	1.1	1.5	2.8	4.1	5.7	7.2	7.9	6.6	5.1	3.3	1.4	0.7	47.5
Sonora	1.1	1.5	2.8	4.1	5.8	7.2	7.9	6.7	5.1	3.2	1.4	0.7	47.6
VENTURA													
Camarillo	2.2	2.5	3.7	4.3	5.0	5.2	5.9	5.4	4.2	3.0	2.5	2.1	46.1
Oxnard	2.2	2.5	3.2	3.7	4.4	4.6	5.4	4.8	4.0	3.3	2.4	2.0	42.3
Piru	2.8	2.8	4.1	5.6	6.0	6.8	7.6	7.8	5.8	5.2	3.7	3.2	61.5
Port Hueneme	2.0	2.3	3.3	4.6	4.9	4.9	4.9	5.0	3.7	3.2	2.5	2.2	43.5
Thousand Oaks	2.2	2.6	3.4	4.5	5.4	5.9	6.7	6.4	5.4	3.9	2.6	2.0	51.0
Ventura	2.2	2.6	3.2	3.8	4.6	4.7	5.5	4.9	4.1	3.4	2.5	2.0	43.5
YOLO													
Bryte	0.9	1.7	3.3	5.0	6.4	7.5	7.9	7.0	5.2	3.5	1.6	1.0	51.0
Davis	1.0	1.9	3.3	5.0	6.4	7.6	8.2	7.1	5.4	4.0	1.8	1.0	52.5
Esparto	1.0	1.7	3.4	5.5	6.9	8.1	8.5	7.5	5.8	4.2	2.0	1.2	55.8
Winters	1.7	1.7	2.9	4.4	5.8	7.1	7.9	6.7	5.3	3.3	1.6	1.0	49.4
Woodland	1.0	1.8	3.2	4.7	6.1	7.7	8.2	7.2	5.4	3.7	1.7	1.0	51.6
Zamora	1.1	1.9	3.5	5.2	6.4	7.4	7.8	7.0	5.5	4.0	1.9	1.2	52.8
YUBA													
Browns Valley	1.0	1.7	3.1	4.7	6.1	7.5	8.5	7.6	5.7	4.1	2.0	1.1	52.9
Brownsville	1.1	1.4	2.6	4.0	5.7	6.8	7.9	6.8	5.3	3.4	1.5	0.9	47.4
* The values in this table were derived from: 1) California Irrigation Management Information System (CIMIS) 2) Reference EvapoTranspiration Zones Map, UC Dept. of Land, Air & Water Resources and California Dept of Water Resources 1999, 3) Reference Evapotranspiration for California, University of California, Department of Agriculture and Natural Resources (1987) Bulletin 1922 4) Determining Daily Reference Evapotranspiration, Cooperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426													

§ 495.2 Appendix B – Sample Water Efficient Landscape Worksheet.

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package. Please complete all sections (A and B) of the worksheet.

PROJECT INFORMATION

Project Name		
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

SECTION A. HYDROZONE INFORMATION TABLE

Please complete the hydrozone table(s) for each irrigation point of connection. Use as many tables as necessary to provide the square footage of landscape area per valve.

Irrigation Point of Connection (P.O.C.) # _____					
Controller #	Valve Circuit #	Plant Type(s)*	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
TOTAL					100%

***Plant Type**
 CST= Cool Season Turf
 WST= Warm Season Turf
 HW = High Water Use Plants
 MW = Moderate Water Use Plants
 LW = Low Water Use Plants

****Irrigation Method**
 MS = Microspray
 S = Spray
 R = Rotor
 B= Bubbler
 D= Drip
 O = Other

SECTION B. WATER BUDGET CALCULATIONS

Section B1. Maximum Applied Water Allowance (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using this equation:

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

where:

- MAWA = Maximum Applied Water Allowance (gallons per year)
- ET_o = Reference Evapotranspiration Appendix A (inches per year)
- 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)

Maximum Applied Water Allowance = _____ gallons

Show calculations.

Effective Precipitation (Eppt)

If considering Effective Precipitation use (25% of annual precipitation) ~~in areas where precipitation is significant, use~~ the following equation to calculate Maximum Applied Water Allowance:

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

Maximum Applied Water Allowance = _____ gallons

Show calculations.

Section B2. Estimated Total Water Use (ETWU)

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

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

where:

- ETWU = Estimated total water use per year (gallons)
- ET_o = Reference Evapotranspiration (inches)
- PF = Plant Factor from WUCOLS (see Section 491)
- HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
- SLA = Special Landscape Area (square feet)
- 0.62 = Conversion Factor
- IE = Irrigation Efficiency (minimum 0.71)

Hydrozone Table for Calculating ETWU

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

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)	Area (square feet)	PF x Area (square feet)
			Sum	
	SLA			

Estimated Total Water Use = _____ gallons

Show calculations.

§ 495.3 Appendix C – Sample Certificate of Completion.

CERTIFICATE OF COMPLETION

This certificate is filled out by the project applicant upon completion of the landscape project.
Please complete all sections (A, B, C and D) below.

PART 1. SECTION A. PROJECT INFORMATION SHEET

Date		
Project Name		
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Project Address and Location:

Street Address		Parcel, tract or lot number, if available.
City		Latitude/Longitude (optional for GIS applications)
State	Zip Code	

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion ~~all of the contract documents~~ and that it is our responsibility to see that the project is maintained in accordance with the Schedule of Landscape and Irrigation Maintenance."

Property Owner Signature _____ Date

Please answer the questions below:

1. ~~Did you submit a~~ Date the Landscape Documentation Package was submitted to the local agency? _____ Yes No
2. ~~Was your~~ Date the Landscape Documentation Package was approved by the local agency? _____ Yes No
3. ~~Was~~ Date that a copy of the Water Efficient Landscape Worksheet (including the Water Budget Calculation) was submitted to the local water purveyor? _____ Yes No

PART 2. SECTION-G. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE AT FINAL OBSERVATION OR INSPECTION

"I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package."

Signature*		Date
Name (print)	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.		
Company	Street Address	
City	State	Zip Code

*Signer of the landscape design plan, signer of the irrigation plan or a licensed landscape contractor.

~~SECTION B. DOCUMENTS~~

PART 3. SECTION-B4. IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per ordinance Section 492.10.

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.

PART 5. SECTION-B2. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

~~SECTION B3. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE~~

~~Attach schedule of Landscape and Irrigation Maintenance per ordinance Section 492.11.~~

PART 6. SECTION-B4. SOIL MANAGEMENT PLAN

Attach soil analysis report, if not previously submitted with the Landscape Documentation Package per ordinance Section 492.5.

Attach documentation verifying implementation of recommendations from soil analysis report per ordinance Section 492.5.

~~SECTION D. PROPERTY OWNER~~

~~"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 Schedule of Landscape and Irrigation Maintenance."~~

Signature of Property Owner or his/her Designee		Date	
Name (print)		Telephone No.	
		Fax No.	
Title		Email Address	
Company		Street Address	
City		State	Zip Code

~~LOCAL AGENCY USE ONLY~~

Signature of the Local Agency Representative		
Name of the Local Agency Representative		
Title		
Telephone No.		Fax No.
Email Address		
Name of Local Agency		
Name of Department/Division/Unit		
Street Address		
City	State	Zip Code

**STAFF REPORT
TOWN COUNCIL MEETING OF NOVEMBER 10, 2009
CONSENT AGENDA**

TO: HONORABLE MAYOR AND MEMBERS OF THE TOWN COUNCIL

FROM: BRIAN FRAGIAO, DIRECTOR OF PUBLIC WORKS

DATE: NOVEMBER 2, 2009

RE: MODEL WATER EFFICIENT LANDSCAPE ORDINANCE

Recommendation:

For informational purposes only. No action at this time.

Issue Statement and Discussion

In 2006, the State enacted legislation (AB1881) requiring the Department of Water Resources (DWR) to update the State Model Water Efficient Landscape Ordinance. The update contains new landscape and irrigation design requirements to reduce water consumption and waste in landscape irrigation. In February 2008, DWR released a draft model ordinance for public review and comment. The final draft of the ordinance was released on May 2009.

Objectives of AB1881 and the DWR model ordinance is as follows:

- Encourage appropriate use of plants
- Establish "water budgets" for properties and describe penalties for exceeding established water budgets
- Require automatic irrigation systems and schedules
- Require soil assessment/soil management
- Promote use of, and manage, recycled water resources
- Minimize overspray and runoff

All jurisdictions and agencies are required to adopt the model ordinance or develop an ordinance by January 2010. Should no action be taken by the jurisdiction or agency, the DWR model ordinance would automatically become effective January 2010 by statute.

Staff is currently working with the Placer County Water Agency (Purveyor) to coordinate processing of the new ordinance. Staff is also gathering existing ordinances throughout the region for assistance on developing an ordinance that fits the Town. With the time constraints, staff will not be able to put together a Town ordinance before the January 2010 deadline. Therefore, the Town will automatically be covered under the DWR model ordinance. Staff is planning to develop an ordinance in the next several months. Attached is a copy of the DWR Model Water Efficient Landscape Ordinance (May 7, 2009) for your review.

CEQA Requirements

Once the Town has prepared it's own ordinance, staff will determine the environmental process involved. Staff is assuming that a Negative Declaration will be needed.

Financial and/or Policy Implications

No financial implications at this time.