Amendment to Title 19

AGENDA ITEM NO.: 4
WARD NO: CITYWIDE

PLANNING COMMISSION HEARING DATE: September 17, 2009

I. CASE NUMBER(S): P09-0309 (ZONING CODE AMENDMENT)

II. PROJECT SUMMARY:

1) **Proposal:** Proposal of the City of Riverside to amend Zoning Code (Title 19 of the Municipal Code) Chapter 19.570 – Water Efficient Landscaping and Irrigation for compliance with Assembly Bill 1881, the Water Conservation in Landscaping Act of 2006.

2) **Applicant:** City of Riverside – Community Development Department, Planning Division

3) **Case Planner:** Moises A. Lopez, Associate Planner
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III. RECOMMENDATION:

That the City Planning Commission:

1. Determine that this proposal is exempt from California Environmental Quality Act (CEQA) review pursuant to Sections 15061(b)(3) and 15304(b).

2. **RECOMMEND APPROVAL** of Planning Case P09-0309 based on the findings outlined in the staff report and summarized in the following and subject to the recommended conditions of approval:

   a. that the proposed Zoning Code Text Amendment is generally consistent with the goals, policies, and objectives of the General Plan 2025;

   b. that the proposed Zoning Code Text Amendment will not adversely affect surrounding properties;

   c. that the proposed Zoning Code Text Amendment promotes the public health, safety, and general welfare and serves the goals and purposes of the Zoning Code;

d. that the proposed Zoning Code Text Amendment is consistent with Assembly Bill 1881 – the Water Conservation in Landscaping Act of 2006;

e. that the proposed Zoning Code Text Amendment is as effective as the State Model Water Efficient Landscape Ordinance in the conservation of water; and

f. That the proposed Zoning Code Text Amendment is consistent with the Riverside County Water Task Force/Western Riverside Council of Governments Landscape Water Use Efficiency Ordinance.

IV. BACKGROUND/PROJECT DESCRIPTION:

Adopted by the State Legislature in 1990, Assembly Bill 325 – the Water Conservation in Landscaping Act – directed the California Department of Water Resources (DWR) to convene an advisory task force composed of a diverse set of stakeholders to develop a model landscape ordinance that would serve to promote the design, installation, and maintenance of water efficient landscapes. In 1992, the DWR formally adopted the State Model Water Efficient Landscape Ordinance, and pursuant to Assembly Bill 325, ordered all local jurisdictions to adopt and implement the State's Model Ordinance or a comparable water efficient landscape ordinance of their own. On January 5, 1993, the City of Riverside adopted its own Water Efficient Landscaping and Irrigation Ordinance (Ordinance No. 6032).

In 2004, Assembly Bill 2717 authorized the California Urban Water Conservation Council (CUWCC) to convene a stakeholder taskforce to evaluate and recommend changes to improve and promote greater water use efficiency in new and existing landscapes. Based on this directive, the CUWCC taskforce produced a comprehensive set of 43 recommendations to amend Assembly Bill 325 and to update the State's Model Ordinance. State Assembly Bill 1881 (AB 1881) – the Water Conservation in Landscaping Act of 2006 – directed the DWR to update the State's Model Ordinance based on the recommendations of the CUWCC taskforce, as well as to comply with other provisions contained in AB 1881. Since February 2008, the DWR has published four different drafts of the State Model Ordinance for public review and comment. Pursuant to AB 1881, the DWR was to have adopted the State Model Ordinance by January 1, 2009 to allow local jurisdictions sufficient time to update or develop a local water efficient landscape ordinance. As of the writing of this staff report, the DWR has not yet adopted a State Model Ordinance. Nevertheless, by January 1, 2010, all local jurisdictions must adopt the updated State Model Ordinance as their own or develop a local water efficient landscape ordinance that is at least as effective as the State Model Ordinance in the conservation of water. Upon adoption by the City Council, each local jurisdiction is required, no later than January 31, 2010, to notify the DWR as to whether the State Model Ordinance or a locally-developed water efficient landscape ordinance was adopted. If a locally-developed water efficient landscape ordinance was adopted, it must be submitted to the DWR for review; DWR's review is limited to accepting or rejecting the ordinance in its entirety. Should DWR reject the City's proposed ordinance, the City would be required to implement the State's Model Ordinance. The DWR has not notified local jurisdictions of the submittal process nor of its parameters for review given its delay in adopting an updated State Model Ordinance.

As a result of the State's mandate to improve the efficiency of water use in both new and existing landscapes and the preference of many local jurisdictions to develop an ordinance in lieu of

adopting the State Model Ordinance, the Riverside County Water Task Force (RCWTF) began developing a regionally-appropriate water efficient landscape ordinance to better reflect regional needs and circumstances, yet remain consistent with AB 1881. The RCWTF was established in 2004 by the Riverside County Board of Supervisors and various regional water agencies to address water availability issues and to develop conservation measures for Riverside County. Recognizing the benefit of a regional ordinance, on June 8, 2009, the Western Riverside Council of Governments (WRCOG) formally endorsed the RCWTF-developed water efficient landscape ordinance and recommended that local jurisdictions adopt the ordinance to allow for uniform implementation throughout the region. To that effect, this proposal seeks to update the City's existing water efficient landscape ordinance by implementing the regional water efficient landscape ordinance developed by the RCWTF and endorsed by WRCOG, and in concurrence with the fourth draft of the State Model Ordinance.

Exhibit 1 illustrates the proposed amendment in redline/strikeout format for the Zoning Code.

V. PROJECT ANALYSIS:

Chapter 19.570 of the Zoning Code – Water Efficient Landscape and Irrigation – establishes the minimum landscape development standards for all land uses in the City. All installations of new landscape and irrigation for public and private development projects are required to comply with the provisions of Chapter 19.570, subject to an administrative design review process. Existing single-family dwellings and duplexes, cemeteries, designated historical sites (subject to review under Title 20), ecological restoration projects or mined-land projects (that do not require a permanent irrigation system), as well as public parks are presently exempt from the provisions of Chapter 19.570.

In short, Chapter 19.570 requires all landscape and irrigation plan submittals to employ certain water conservation strategies. Among them, the Chapter currently requires or recommends:

- Compliance with the Annual Water Budget;
- Use of drought-tolerant and California-native plant species that are suitable for the climactic and soil conditions of the City/project site (there are no restrictions on the use of specific plant materials);
- Grouping together plants of similar water use in distinct hydrozones;
- Use of automatic irrigation controllers;
- Use of soil moisture sensors (where appropriate);
- Use of separate landscape-dedicated water meters (recommended);
- Completion of a soils analysis (optional); and
- Completion of an irrigation audit (optional).

The Proposed Ordinance

As noted previously, this amendment seeks to update the City's existing water efficient landscape ordinance by implementing the regional water efficient landscape ordinance developed by the RCWTF and endorsed by WRCOG. The update is intended to reflect modern day landscaping practices that include improvements to landscape and irrigation plan designs, improved irrigation technologies, and improved water management practices that reduce water use (demand) and waste. It is important to note that many elements of the City's existing water efficient landscape and irrigation standards will remain in place even as improvements are made. Additionally, the

proposed ordinance has been formatted to resemble the layout of the RCWTF regional ordinance as well as the State Model Ordinance. The proposed ordinance would amend the following provisions from the City's existing Water Efficient Landscape and Irrigation Chapter:

- *Applicability*
  All installations of landscape and irrigation for public and private development projects will remain subject to an administrative design review process. This proposal, however, would amend how projects are determined to be subject to the provisions of this ordinance; a project's applicability will now be based on its total landscape area. Public agency projects, private development projects (commercial, industrial, and office), and developer-installed landscapes for single-family and multiple-family residential projects would have to comply with the provisions of this ordinance if the project has a total landscape area equal to or greater than 2,500 square feet. Homeowner-provided and/or homeowner-hired landscapes for single-family and multiple-family residential projects would be subject to the provisions of this ordinance if the project has a total landscape area equal to or greater than 5,000 square feet. Existing landscapes and cemeteries are granted special considerations, but must still comply with a limited number of provisions, including irrigation audits and compliance with the Maximum Applied Water Allowance (MAWA).

  Public projects are presently exempt from compliance with the Zoning Code pursuant to Section 19.040.110 (Public Projects). Consistent with Assembly Bill 1881, public projects will now be required to comply with the provisions of this specific chapter; Section 19.040.110 has been amended to reflect this mandate.

  The following uses will be exempt from the proposed ordinance: any project with a total landscape area less than 2,500 square feet, a registered historical site (local, state, or federal), ecological restoration projects with an establishment period of less than three years and mined-land reclamation projects (that do not require a permanent irrigation system), and plant collections (as part of botanical gardens or arboretums open to the public).

- *The Maximum Applied Water Allowance (MAWA)*
  The MAWA – previously the Annual Water Budget – determines the maximum amount of water that a landscape may utilize on an annual basis. This proposal would amend the MAWA calculation, by reducing the Evapotranspiration Adjustment Factor from 0.8 to 0.7. This reduction, consistent with the fourth draft of the State Model Ordinance and the RCWTF regional ordinance, would result in an approximately twelve percent (12%) reduction in the amount of water that would be allotted to any landscape on an annual basis. Given this reduction, it can be expected that traditional grass-centric landscape designs will be limited.

- *Irrigation Controllers*
  Consistent with the fourth draft of the State Model Ordinance and the RCWTF regional ordinance, this proposal would require the installation of smart irrigation controllers, instead of automatic irrigation controllers, on all irrigation systems. Smart irrigation controllers are capable of automatically adjusting the frequency and/or duration of irrigation cycles in response to changing weather conditions (temperature, wind, rain, etc), whereas automatic irrigation controllers are only capable of scheduling when irrigation cycles will occur (time and day). In effect, smart irrigation controllers irrigate based on the need of the landscape, help avoid overwatering, and prevent excessive offsite runoff. According to the Metropolitan Water

District, the installation of a smart irrigation controller can save as much as 40 gallons of water per day (that equates to 14,600 gallons of water per year).

- *Recycled Water*
  A reference to the City's existing provisions – Chapter 14.28 (Mandatory Use of Recycled Water) – for the use of recycled water was inserted. Chapter 14.28 outlines the City's intent to require the use of recycled water (instead of potable water) where it is available and for certain uses. Adopted by the City in 2008, Chapter 14.28 was established prior to the release of the fourth draft of the State Model Ordinance and the RCWTF regional ordinance. As a matter of information, the City's Recycled Water Project is expected to provide nearly five billion gallons of recycled water per year by 2015 and thirteen billion gallons of recycled water per year by 2030.

- *Soils Analysis*
  A soils analysis reveals potential natural chemical imbalances in the soil that can result in poor plant performance and shortened plant life. Often times, property owners attribute this to a lack of water when in reality it is the soil's composition that may be at fault. A soils analysis is able to determine plant nutrient levels, pH, and soil texture, all critical components that contribute to healthy plant growth and limit unnecessary offsite runoff. To that end, this proposal would require the submittal of a soils analysis – consistent with the fourth draft of the State Model Ordinance and the RCWTF regional ordinance – that identifies the soil's texture and composition, water infiltration rate, existing nutrient levels, pH levels, and soil amendment recommendations.

- *Irrigation Audit*
  An irrigation audit is an after-installation inspection of the irrigation system that ensures that all components of the system are operating as intended. The audit serves to determine how well plant materials are being watered in addition to limiting any runoff resulting from overspray or malfunctioning equipment. Consistent with the fourth draft of the State Model Ordinance and the RCWTF regional ordinance, an irrigation audit shall be required and be submitted as an attachment to the Certificate of Completion. Furthermore, all irrigation audits shall be conducted by a certified irrigation auditor and be, at a minimum, compliant with established industry standards.

- *Second Water Meters*
  Consistent with Section 535 of the California Water Code, this proposal would require the installation of separate landscape-dedicated water meters on projects with a landscape area greater than 5,000 square feet. Single-family residential properties and properties used for the commercial production of agricultural crops or livestock are exempt from this provision.

Metropolitan Water District (MWD) – Conservation Elements

The RCWTF-developed water efficient landscape ordinance includes conservation elements drafted in response to a MWD directive (not included in the State Model Ordinance) that all local jurisdictions adopt a water conservation ordinance. The conservation elements include provisions that would require restrictions on water flow, the washing of paved surfaces, as well as establish maintenance and repair requirements, among others. While these elements can and do contribute toward greater water conservation efforts, staff has determined that it would be more appropriate

for these elements to be addressed in a separate amendment as they do not correlate to this proposal and lie beyond the scope of the Zoning Code. In order to comply with the MWD directive, the City's Public Utilities Department (RPU) is currently in the process of developing a citywide conservation ordinance. The RPU anticipates presenting a draft ordinance for adoption by Spring 2010. Noncompliance with the MWD directive would limit the City's ability to access certain program funds that are presently available to the City. By comparison, the State Model Ordinance includes provisions that are intended to promote and implement water conservation strategies that are directly related to landscaping and irrigation practices (requiring smart irrigation controllers, promoting water-efficient/California-native plant materials, limiting watering hours, etc.); this proposed ordinance has incorporated those measures. Moreover, the RPU already provides irrigation audits, surveys, and water use analyses as a free service to all City residents in addition to offering a series of rebates for landscaping and irrigation equipment.

VI. PUBLIC NOTICE AND COMMENTS:

Pursuant to Section 19.670.040 (Notice of Hearing for Legislative Actions) of the Zoning Code, a one-eighth page ad public notice was placed in the local newspaper of general circulation within the City (*The Press Enterprise*) ten (10) days prior to this hearing.

VII. EXHIBITS:

1. Proposed Amendment to Title 19 (Zoning Code) of the Riverside Municipal Code
2. Comparison of Water Efficient Landscape Ordinance Requirements
3. Fourth Draft of the State Model Water Efficient Landscape Ordinance (July 15, 2009)
4. Riverside County Water Task Force – Draft Landscape Water Use Efficiency Ordinance – Riverside Agencies (May 22, 2009)
5. Assembly Bill 1881 (Water Conservation in Landscaping Act of 2006)

RECOMMENDED CONDITIONS & GENERAL INFORMATION NOTES

Case Number: P09-0309 Meeting Date: September 17, 2009

CONDITIONS ***All mitigation measures are noted by an asterisk (*).***

Case Specific

- **Planning**

1. The Zoning Code shall be amended as shown on Exhibit 1.

2. The City Attorney's Office shall prepare the appropriate resolution for City Council adoption of the Zoning Code Text Amendment within thirty days.

GENERAL INFORMATION NOTES

1. Appeal Information

   a. Actions by the City Planning Commission, including any environmental finding, may be appealed to the City Council within ten calendar days after the decision.

   b. Appeal filing and processing information may be obtained from the Community Development Department, Planning Division, Public Information Section, located on the 3rd Floor of City Hall.

P09-0309, Exhibit #1

CITY PLANNING COMMISSION
PROPOSED AMENDMENTS TO TITLE 19

(Please note "**redline**" text reflects added language, the "~~strikeout~~" text indicates deleted language)

Chapter 19.040

ZONING CODE APPLICABILITY

19.040.110 Public Projects.

Notwithstanding any lawful exemptions to zoning regulations, the provisions of this Title, except for the provisions of Chapter 19.570 (Water Efficient Landscape and Irrigation), shall not apply to any buildings, improvements, lots or premises, owned, leased, operated or controlled by the City or any City Project for public purposes by the City of Riverside. (Ord. 6966 §1, 2007)

~~Chapter 19.570~~

~~WATER EFFICIENT LANDSCAPING AND IRRIGATION~~

~~19.570.010 Purpose.~~

~~A. This Chapter establishes minimum landscape standards for all uses for the purpose of enhancing the appearance of developments, reducing heat and glare, controlling soil erosion, conserving water, providing recreation areas, cleaning the air and water, offering fir protection, replacing ecosystems displaced by development, establishing a buffer and/or screen between residential and non-residential land uses, and ensuring the ongoing maintenance of landscape areas.~~

~~B. This Chapter also implements the California Water Conservation in Landscaping Act (Government Code Article 10.8) by establishing a structure for designing, installing and maintaining water efficient landscapes.~~

~~C. This Chapter promotes the use of recycled water for landscaping.~~

~~D. Promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible.~~

E. Establish a structure for designing, installing and maintaining water efficient landscapes. (Ord. 6966 §1, 2007)

19.570.020 Applicability.

A. Owners and/or occupants of properties fronting on, or adjacent to, any portion of a street shall landscape, irrigate and maintain required yards adjacent to the street and comply with the provisions of this Chapter as well as Chapters 6.14 (Landscape Maintenance) and 13.06 (Vegetation Maintenance) of the Municipal Code for any landscaping along said street or within the street right-of-way adjacent to their property fronting on, or adjacent to, any portion of the street.

B. Any Development that is subject to Design Review (Chapter 19.710) shall also comply with Sections 19.570.040 (Provisions for the Review and Certification of Landscaping and Irrigation) through 19.570.050 (Certificate of Substantial Completion) and 19.570.060 B (Efficient Water Use Educational Program), if applicable. (Ord. 6966 §1, 2007)

19.570.030 General Landscaping Standards.

These standards shall apply to all lots within the City.

A. Any landscaping required by this Chapter shall be installed, permanently irrigated and maintained in a healthy and thriving condition

B. Trees may be planted in any required yard areas.

C. To safeguard against vehicle, bicycle, and pedestrian collisions caused by visual obstructions at street intersections, a clear cross-visibility area shall be maintained at the intersection of all public rights-of-way pursuant to 19.550.050 (Sight Clearance Requirements).

D. Landscaping and vegetation throughout the City shall be maintained pursuant to Chapters 6.14 (Landscape Maintenance) and 13.06 (Vegetation Maintenance) of the Municipal Code.

E. Landscape planting shall emphasize drought-tolerant and native species, complement the architectural design of structures on the site, and be suitable for the soil and climatic conditions of the site.

F. All front and visible side yards shall be landscaped consistent with the provisions of this Chapter. (Ord. 6966 §1, 2007)

19.570.040 Provisions for the Review and Certification of Landscaping and Irrigation.

A. Applicability

1. Except as provided in subsection B, this Section shall apply to:

a. All installations of new landscaping and irrigation for public projects and private development projects that require review and approval by the Zoning Administrator;

b. Developer-installed landscaping and irrigation in multifamily projects that require review and approval by the Zoning Administrator.

2. Projects subject to this Chapter shall conform to the provisions of this Section and shall be subject to the review and approval of the Zoning Administrator in accordance with Chapter 19.710 (Design Review).

B. Exceptions

1. This Chapter shall not apply to:

a. Landscaping and irrigation of single-family dwellings and duplexes;

b. Cemeteries;

c. Designated historical sites that are subject to review under Title 20;

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;

f. Public parks.

C. Landscaping Submittal Package

1. An application shall be submitted to the Planning Division for review and approval by the Zoning Administrator. No certificate of occupancy or other final City approval shall be issued until the City reviews and approves the landscape plans and the landscaping and irrigation are installed in accordance with approved plans.

2. A copy of the approved landscape plans and conditions of approval 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. Applications submitted to the Planning Division requesting landscaping review shall include the following information:

Water Conservation Concept Statement:

a. The Water Conservation Concept Statement is a cover sheet that shall serve as a checklist to verify that the elements of the Landscape Documentation Package have been completed and as a narrative summary of the project.

b. Forms for the Water Conservation Concept Statement shall be available at the Planning Division.

Calculation of the Annual Water Budget:

c. The annual water budget is determined by the following formula:

~~AWB = (56.65) (0.8) (TLA)~~
~~1200~~

~~where:~~

~~AWB = Annual water budget in billing units per year (one billing unit = 100 cubic feet = 748 gallons).~~

~~56.65 = Reference evapotranspiration in inches of water per year.~~

~~0.8 = Allowable percentage.~~

~~TLA = Total landscaped area per water meter in square feet.~~

~~1200 = Conversion factor to produce a formula total in billing units. (To convert the answer to gallons, multiply the formula by 748).~~

~~d. Portions of landscaped areas in public and private projects such as parks, playgrounds, sports fields, golf courses, driving ranges, or school yards where turf serves recreational purposes may require a supply of water in addition to the Estimated Annual Water Budget. A statement shall be included with the Landscape Design Plan, designating those areas to be used for such purposes and specifying any needed amount of additional water above the Annual Water Budget.~~

~~***Estimated Annual Water Use:***~~

~~e. A calculation of the estimated annual water use shall be submitted with the landscape documentation package. The estimated annual water use shall be calculated using the following formula:~~

~~EAWU = (56.65) (KC) (HA) (DE) (AE) (1200)~~

~~where:~~

~~EAWU = Estimated annual water use in billing units per year (one billing unit = 100 cubic feet = 748 gallons).~~

~~56.65 = Reference evapotranspiration in inches of water per year.~~

~~KC = Crop coefficient (for a specific plant from the Water Needs of Plants list on file in the Planning Division).~~

~~HA = Hydrozone area in square feet.~~

~~DE = Distribution efficiency of the irrigation system expressed as a decimal as listed in Section 19.570.070 of this Chapter.~~

~~AE = Application efficiency of the irrigation system expressed as a decimal as listed in the 19.570.070 of this Chapter.~~

~~1200 = Conversion factor to produce a formula total in billing units. (To convert the answer to gallons, multiply the formula by 748).~~

~~f. If the Estimated Annual Water Use is greater than the Estimated Annual Water Budget, the Zoning Administrator may require revisions to the landscaping or irrigation specifications or design to achieve greater water efficiency.~~

~~***Landscape Design Plan:*** With the exception of projects having a net size of one-half acre or less, all plans required to be submitted under the provisions of this Chapter shall be wet stamped and signed by a landscape architect licensed to practice in the State of California.~~

g. Plant Selection and Grouping:

(1) Any plants may be used in the landscape; however, if the estimated annual water use exceeds the annual water budget, the Zoning Administrator may require revisions to the landscape and/or irrigation plans to achieve greater water efficiency.

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

(3) 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 Chapter.

(4) 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 the Riverside Fire Department or the California Department of Forestry.

(5) A mulch of at least two inches shall be applied to all new planting areas except turf as appropriate. Slopes exceeding 4:1 shall receive jute netting or another appropriate means of slope stabilization and water retention.

h. Water Features:

(1) Decorative water features shall be designed to re-circulate the water and avoid unnecessary flows to waste.

(2) Pool and spa covers are encouraged.

i. Landscape Design Plan Specifications. The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies:

(1) Designation of hydrozones.

(2) Landscape materials, trees, shrubs, ground cover, 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.

(3) Property line, compass directions and street names.

(4) Streets, driveways, walkways, and other paved areas.

(5) Pools, ponds, water features, fences, and retaining walls.

(6) Existing and proposed buildings and structures including elevations if applicable.

(7) Natural features including but not limited to rock outcroppings, existing trees, shrubs proposed to remain and those proposed to be removed.

(8) Tree staking, plant installation, soil preparation details, and any other applicable planting and installation details.

(9) Calculation of the total landscaped area in square feet.

(10)Designation of recreational areas.

Irrigation Design Plan: An irrigation design plan meeting the following conditions shall be submitted as part of the landscape application.

j. Irrigation Design Criteria:

(1) Run-off and overspray.

Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to minimize run-off, 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, thereby minimizing run-off.

Special attention shall be given to minimize run-off on slopes and to minimize 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.

(2) Equipment

Water meters. Separate developer installed landscape water submeters are recommended for all projects except for single-family homes or any project with a landscaped area of less than five thousand square feet.

(3) Controllers.

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

(4) Valves.

Plants that 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.

(5) 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.

(6) Soil Moisture Sensing Devices.

Soil moisture sensing devices shall be considered where appropriate.

k. Recycled Water:

(1) The installation of recycled water irrigation systems (dual distribution systems) may be required by the Zoning Administrator to allow for the current and future use of recycled water.

(2) The recycled water irrigation systems shall be designed and operated in accordance with all local and State codes.

l. 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 subdivision 4 of this subsection. The irrigation design plan shall accurately and clearly identify:

(1) Location and size of water meters for the landscape.

(2) 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, backflow prevention devices and all other information required by the Zoning Administrator.

(3) Static water pressure at the point of connection to the public water supply.

(4) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station.

(5) Recycled water irrigation systems as specified in subsection (C)(5)(b).

Irrigation Schedules: Irrigation schedules satisfying the following conditions shall be submitted as part of the landscape documentation package.

m. 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.

n. The irrigation schedule shall:

(1) Include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for each station; and

(2) 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.

o. The total amount of water for the project shall include water designated in the estimated annual water use calculation plus water needed for any water features, which shall be considered as a high water using hydrozone.

p. Recreational areas designated in the landscape design plan shall be highlighted and the irrigation schedule shall indicate the amount of water needed above the annual water budget because of high plant factors (but not due to irrigation inefficiency).

q. 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.

r. Whenever possible, landscape irrigation shall be scheduled to avoid irrigating during times of high wind or high temperature.

Landscape Irrigation Audit Schedules (Optional):

s. Irrigation audits shall be in accordance with the State of California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook (June 1990) version 5.5 (formerly Master Auditor Training).

t. A landscape irrigation audit shall be conducted by a certified landscape irrigation auditor at the completion of irrigation installation and prior to release of occupancy.

u. For all projects subject to this Chapter, the Public Utilities Department shall make available information regarding the benefits of regularly scheduled water audits.

Grading Design Plan: Grading design plans satisfying the following conditions shall be submitted as part of the landscape documentation package:

v. A grading design plan shall be drawn on project base sheets. It should be separate from but use the same format as the landscape design plan. If the irrigation design is drawn on the grading plan, all irrigation components and information must be clearly legible.

w. The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, landscape mounding and finish grade.

Soil Analysis (Optional):

x. It is recommended that a soils analysis satisfying the following conditions be submitted as part of the landscape application.

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

(2) 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.

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

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

19.570.050 Certificate of Substantial Completion.

A. After completing the installation of the landscaping and irrigation system, an audit shall be conducted by a certified landscape irrigation auditor prior to the final field observation.

B. The landscape architect, certified irrigation designer, or other designer responsible for the landscape and/or irrigation design shall conduct a final field observation and shall provide a Certificate of Substantial Completion to the Planning Division. 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. The Certificate of Substantial Completion shall be on a standard form provided by the Planning Division, and delivered to the Planning Division and owner of property.

1. No occupancy permit shall be issued until the Certificate of Substantial Completion is received and approved, and a final inspection is completed by the Planning Division.

2. All landscaping shall be maintained in a healthy, growing condition, free of weeds and appropriately trimmed, and all irrigation shall be maintained in a fully operational condition as approved by the Zoning Administrator.

19.570.060 Efficient Water Use Educational Program.

A. Publications

1. The Public Utilities Department will make available to the public, information regarding the design, installation, and maintenance of water efficient landscapes.

2. Information about the efficient use of landscape water shall be provided to water users throughout the community by the Public Utilities Department.

B. Model Homes

In each project consisting of eight or more homes, at least one model home that is landscaped shall demonstrate via installed landscaping and irrigation, the principles of water efficient landscaping and irrigation described in this Chapter.

1. The water efficient landscaped and irrigated model home site shall be identified as such by signs posted that identify such water efficient elements as hydrozones, irrigation equipment and others that contribute to the overall water efficient theme.

2. The developer shall provide information at the model home site about designing, installing, and maintaining water efficient landscaping and irrigation.

19.570.070 Definitions for the Purposes of this Chapter Only.

The words used in this Chapter have the meanings as set forth below:

A. "Allowable percentage" means a factor of 0.8, that, when applied to reference evapotranspiration, determines the annual maximum allowable water budget for an individually metered landscape project.

B. "Annual water budget" or "AWB" means the upper limit of allowable water use for the entire landscaped area per water meter in accordance with the formula in Section 19.570.040 C 3 (Calculation of the Annual Water Budget).

C. "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.

D. "Application efficiency" or "AE" is a measure of the efficiency of an irrigation system based upon the characteristics of various types of irrigation system controls as follows:

1. 0.85 for irrigation systems that have a centralized control system or controllers that measure or can be programmed to use evapotranspiration rates, or systems that use other irrigation efficiency controls such as moisture sensors;

2. 0.65 for irrigation systems that do not have any of the above soil or weather driven types of irrigation efficiency controls.

E. "Application rate" means the depth of water applied to a given area, usually measured in inches per hour.

F. “Applied water" means the portion of water supplied by the irrigation systems to the landscape.

G. "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.

H. "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.

I. "Conversion factor (1200)" means the number used to produce formula total in billing units of one hundred cubic feet. (To convert the answer to gallons, multiply the formula by 748).

J. "Crop coefficient" or "KC" means a factor, expressed as a decimal, that when multiplied by reference evapotranspiration, estimates the amount of water used by a specific plant.

K. "Distribution efficiency" or "DE" is a measure of the efficiency of an irrigation system based upon the characteristics of the various types of sprinklers and emitters as follows:

1. 0.70 for spray heads;

2. 0.85 for gear-driven, impact or ball-driven rotors;

3. 0.85 for bubbler heads;

4. 0.90 for drip irrigation systems.

L. "Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

M. "Emitter" means a drip irrigation fitting that delivers water slowly from the system to the soil.

N. "Established landscape" means the point at which plants in the landscape have developed roots into the soil adjacent to the root ball.

O. "Establishment period" means the first four months after installation of the plants in the landscape.

P. "Estimated annual water use" or "EAWU" means the estimated annual water use for an established landscaped area as calculated pursuant to the formula in Section 19.570.040 C 3 e (Estimated Annual Water Use).

Q. "Evapotranspiration" means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

R. "Flow rate" means the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second).

S. "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 nonirrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a nonirrigated hydrozone.

T. "Infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).

U. "Irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is the product of distribution efficiency (DE), based upon characteristics of the various types of sprinklers/emitters, and application efficiency (AE), based upon characteristics of the various types of irrigation system controls.

V. "Landscape irrigation audit" means a process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.

W. "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.

X. "Lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

Y. "Main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

Z. "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.

AA."Mulch" means any material such as leaves, bark, straw or other materials left loose and applied to the soil surface for the beneficial purpose of reducing evaporation.

BB."Operating pressure" means the pressure at which a system of sprinklers is designed to operate, usually indicated at the base of a sprinkler.

CC. "Overhead sprinkler irrigation systems" means those that apply water by spraying it into the air through nozzles.

DD. "Overspray" means the water that is delivered beyond the landscaped area, wetting pavements, walks, structures, or other non-landscaped areas.

EE."Record drawing" or "as-builts" means a set of reproducible drawings that show significant changes in the work made during construction and that are usually based on drawings marked up in the field and other data furnished by the contractor.

FF."Recreational area" means an area of active play or recreation such as a sports field, school yard, picnic ground, or other area with intense foot traffic.

GG. "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, but not intended for human consumption.

HH. "Reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters that affect the water use of plants. Reference evapo-transpiration is given as 56.65 inches of water per year, and represents the annual historic average evapotranspiration of a large field of four to seven inch tall cool season grass that is well watered and located in the area of Riverside County.

II. "Rehabilitated landscape" means any relandscaping project that requires a permit.

JJ. "Run-off" means water that is not absorbed by the soil or landscape to which it is applied and flows from the area. For example, run-off may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a severe slope.

KK."Soil moisture sensing device" means a device that measures the amount of water in the soil.

~~LL. "Soil texture" means the classification of soil based on the percentage of sand, silt, and clay in the soil.~~

~~MM."Sprinkler head" means a device that sprays water through a nozzle.~~

~~NN."Static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.~~

~~OO."Station" means an area served by one valve or by a set of valves that operate simultaneously.~~

~~PP."Turf" means a surface layer of earth containing mowed grass with its roots. Annual bluegrass, Kentucky bluegrass, perennial rye grass, red fescue, and tall fescue are cool-season grasses. Bermuda grass, kikuyu grass, seashore paspalum, St. Augustine grass, zoysia grass, and buffalo grass are warm-season grasses.~~

~~QQ."Valve" means a device used to control the flow of water in the irrigation system.~~

~~RR."Water conservation concept statement" means a narrative summary of the means employed to conserve water in a project's design along with documentation as to the means by which the annual water budget and estimated annual water use figures were derived. (Ord. 6966 §1, 2007)~~

Chapter 19.570

WATER EFFICIENT LANDSCAPING AND IRRIGATION

19.570.010 Purpose

The City finds that:

A. That the waters of the City and State are of limited supply and are subject to ever increasing demands;

1. That the continuation of the City’s and State’s economic prosperity is dependent on the availability of adequate supplies of water for future uses;

2. That it is the policy of the City and State to promote the conservation and efficient use of water and to prevent the waste of this valuable resource;

3. That landscapes are essential to the quality of life in the City and State 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;

4. That landscape design, installation, maintenance, and management can and should be water efficient; and

5. The City recognizes 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 Chapter of the Zoning Code 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, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects;

3. Reduce water demands from landscapes without a decline in landscape quality or quantity;

4. Retain flexibility and encourage creativity through appropriate design;

5. Establish provisions for water management practices and water waste prevention that eliminate water waste from overspray and/or runoff;

6. Use water efficiently without waste by setting a Maximum Applied Water Allowance (MAWA) as an upper limit for water use and reduce water use to the lowest practical amount;

7. Assure the attainment of water efficient landscape goals by requiring that landscapes not exceed a maximum water demand of seventy percent (70%) of its reference evapotranspiration (ETo) or any lower percentage as may be required;

8. Achieve water conservation by raising the public awareness of the need to conserve water through education and motivation to embrace an effective water demand management program; and

9. Promote the use of recycled water for landscaping.

19.570.020 Applicability

A. This Chapter 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 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 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 permit, plan check, or design review.

4. Existing landscapes are limited to Section 19.570.070.

5. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Section 19.570.080(A). Existing cemeteries are limited to Section 19.570.080(B).

6. Notwithstanding Section 19.040.110 (Public Projects), all public projects shall comply with the provisions of this Chapter.

B. This Chapter does not apply to:

1. Any project with a total landscape area less than 2,500 square feet;

2. Registered local, state or federal historical sites;

3. Ecological restoration projects that do not require a permanent irrigation system and have an establishment period of less than 3 years;

4. Mined-land reclamation projects that do not require a permanent irrigation system; and

5. Plant collections, as part of botanical gardens and arboretums open to the public.

19.570.030 Provisions for the Review and Certification of Landscaping and Irrigation

An applicant proposing any new or rehabilitated landscape subject to this Chapter shall prepare and submit an application to the Planning Division for review and approval by the Zoning

Administrator. The planting plan, irrigation plan, and soils management plan shall be reviewed to ensure that all components of the plans adhere to the requirements of this Chapter. No certificate of occupancy or other final City approval shall be issued until the City reviews and approves the landscape and irrigation plans and the landscape and irrigation are installed in accordance with the approved plans. A copy of the approved landscape and irrigation plans and conditions of approval shall be provided to the property owner or site manager along with any other information normally forwarded to the property owner or site manager.

Applications submitted to the Planning Division shall include the following information:

A. Planting Plan Requirements

The following requirements shall be implemented in tandem with the landscape policies contained in the Citywide Design and Sign Guidelines.

1. The "Riverside County Guide to California Friendly Landscaping" (Landscaping Guide), Western Municipal Water District's Water-wise 140, or any other plant list that promotes the use of water efficient or California native plant materials is hereby incorporated by reference to assist with developing water efficient landscapes.

2. Plant types shall be grouped together in regard to their water, soil, sun, and shade requirements and in relationship to the buildings. Plants with different water needs shall be irrigated separately. Plants with the following classifications shall be grouped accordingly: high and moderate, moderate and low, low and very low. Deviation from these groupings shall not be permitted.

3. Trees for shade shall be provided for residential, commercial and industrial buildings, parking lots and open space areas. These trees can be deciduous or evergreen and are to be incorporated to provide natural cooling opportunities for the purpose of energy and water conservation.

4. Plants shall be placed in a manner considerate of solar orientation to maximize summer shade and winter solar gain.

5. Plant selection 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). Fire-prone plant materials and highly flammable mulches shall be avoided.

6. 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.

   a. Projects in the Sycamore Canyon, Canyon Springs, Mission Grove, and Canyon Crest Neighborhoods shall consult Table 6-2 (Plants That Should

be Avoided Adjacent to the MSHCP Conservation Area) of the Multiple Species Habitat Conservation Plan to avoid the use of invasive plant species.

7. All exposed surfaces of non-turf areas within the developed landscape area shall be mulched with a minimum three inch (3") layer of material, except in areas with groundcover planted from flats where mulch depth shall be one and one half inches (1 ½").

8. Stabilizing mulching products shall be used on slopes.

9. Turf areas shall be used in response to functional needs and in compliance with the water budget.

10. Decorative water features shall use recirculating water systems.

11. Recycled water shall be used where available as the source for irrigation and decorative water features consistent with the provisions of Section 19.570.070 (Recycled Water).

12. Planting Plans shall identify and site the following:

    a. New and existing trees, shrubs, ground covers, and turf areas within the proposed landscape area;

    b. Planting legend indicating all plant species by botanical name and common name, spacing, and quantities of each type of plant by container size;

    c. Designation of hydrozones;

    d. Area, in square feet, devoted to landscaping and a breakdown of the total area by landscape hydrozones;

    e. Property lines, streets, and street names;

    f. Building locations, driveways, sidewalks, retaining walls, and other hardscape features;

    g. Appropriate scale and north arrow;

    h. Any special landscape areas;

    i. Type of mulch and application depth;

    j. Type and surface area of any water features;

k. Type and installation details of any applicable stormwater best management practices;

l. Planting specifications and details, including the recommendations from the soils analysis, pursuant to the provisions of Section 19.570.030(C).

m. Maximum Applied Water Allowance (MAWA):

i. Planting Plans shall be prepared using the following Water Budget Formula:

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

Where:

MAWA – Maximum Applied Water Allowance (gallons per year)
ET_o – Reference Evapotranspiration (inches per year)
0.62 – Conversion Factor (to gallons)
0.7 – ET Adjustment Factor (ETAF)
LA – Landscape Area including SLA (square feet)
0.3 – Additional Water Allowance for SLA
SLA – Special Landscape Area (square feet)

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

n. Estimated Annual Water Use (EAWU):

i. EAWU for a given hydrozone is calculated as follows:

EAWU (in gallons) = $(ET_o)(0.62)[((PFxHA)/IE) +SLA]$

Where:

EAWU – Estimated Annual Water Use
ET_o – Reference Evapotranspiration (inches per year)
PF – Plan Factor from Water Use Classification of Landscape Species (WUCOLS)
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)

ii. Landscaping plans shall provide EAWU (in the same units as the MAWA) for each valve circuit in the irrigation hydrozone. The sum of all EAWU calculations shall not exceed the MAWA for the project.

iii. The plant factor used shall be from Water Use Classification of Landscape Species (WUCOLS). The plant factor for low water use plants range from 0 to 0.3, for moderate water use plants range from 0.4 to 0.6, and for high water use plants range from 0.7 to 1.0.

iv. The plant factor calculation is based on the proportions of the respective plant water uses and their plant factor, or the plant factor of the higher water using plant is used.

v. The surface area of a water features shall be included in the high water use hydrozone area of the water budget calculation and temporarily irrigated areas in the low water use hydrozone.

13. Planting Plans and Irrigation Plans shall be drawn at the same size and scale.

14. The Planting Plan shall be prepared, wet-stamped, and signed by a landscape architect consistent with Section 19.570.090(CC). Any plans submitted without the signature of a licensed landscape architect shall not be accepted for review.

B. Irrigation Design Plan Requirements

1. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average irrigation efficiency of 0.71.

2. All irrigation systems shall be designed to prevent runoff, over-spray, lowhead drainage and other similar conditions where water flows off-site on to adjacent property, non-irrigated areas, walk, roadways, or structures. Irrigation systems shall be designed, constructed, managed, and maintained to achieve as high an overall efficiency as possible. 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.

3. Landscaped areas shall be provided with a smart irrigation controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions. The planting areas shall be grouped in relation to moisture control zones based on similarity of water requirements (i.e., turf separate from shrub and groundcover, full sun exposure areas separate from shade areas, top of slope separate from toe of slope). Additional water conservation technology (i.e., soil moisture sensors) may be required, where necessary, at the discretion of the Zoning Administrator.

4. Water systems for common open space areas shall use non-potable water, if approved facilities are made available by the water purveyor. Provisions for the conversion to a non-potable water system shall be provided within the landscape plan. Water systems designed to utilize non-potable water shall be designed to meet all applicable standards of the California Regional Water Quality Control Board, the Riverside County Health Department, and the water purveyor.

5. Separate valves shall be provided for separate water use planting areas, so that plants with similar water needs are irrigated by the same irrigation valve. All installations shall rely on highly efficient state of the art irrigation systems to eliminate runoff and maximize irrigation efficiency.

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

7. The capacity of the irrigation system shall not exceed:

    a. the capacity required for peak water demand based on water budget calculations;

    b. meter capacity; or

    c. backflow preventer type and device capacity.

8. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer.

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

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

11. 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.

12. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. There are no restrictions on the irrigation system type if the landscape area is adjacent to permeable surfacing and no overspray and runoff occurs.

13. Overhead irrigation shall be limited to the hours between 7 p.m. and 9 a.m.

14. All irrigation systems shall be equipped with the following:

    a. A smart irrigation controller as noted in Section 19.570.030(B)(3) of this Chapter;

    b. A rain sensing device to prevent irrigation during rainy weather;

    c. Anti-drain check valves installed at strategic points to minimize or prevent low-head drainage;

    d. A manual shut-off 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 or routine repair;

    e. A pressure regulator when the static water pressure is above or below the recommended operating pressure of the irrigation system;

    f. Backflow prevention devices; and

    g. Riser protection components for all risers in high traffic areas.

15. Dedicated landscape water meters shall be required for all projects with a landscape area equal to or greater than 5,000 square feet. Single-family residences and properties used for the commercial production of agricultural crops or livestock are exempt from this provision (California Water Code, Section 535).

16. Irrigation Design Plans shall identify and site the following:

    a. Hydrozones.

        i. Each hydrozone shall be designated by number, letter or other designation

        ii. A Hydrozone Information Table shall be prepared for each hydrozone

    b. The areas irrigated by each valve;

    c. Irrigation point of connection (POC) to the water system;

    d. Static water pressure at POC;

    e. Location and size of water meter(s), service laterals, and backflow preventers;

    f. Location, size, and type of all components of the irrigation system,

including automatic controllers, main and lateral lines, valves, sprinkler heads and nozzles, pressure regulator, drip and low volume irrigation equipment;

g. Total flow rate (gallons per minute), and design operating pressure (psi) for each overhead spray and bubbler circuit, and total flow rate (gallons per hour) and design operating pressure (psi) for each drip and low volume irrigation circuit;

h. Precipitation rate (inches per hour) for each overhead spray circuit;

i. Irrigation legend with the manufacturer name, model number, and general description for all specified equipment, separate symbols for all irrigation equipment with different spray patterns, spray radius, and precipitation rate;

j. Irrigation system details for assembly and installation; and

k. Recommended irrigation schedule for each month, including number of irrigation days per week, number of start times (cycles) per day, minutes of run time per cycle, and estimated amount of applied irrigation water, expressed in gallons per month and gallons per year, for the established landscape.

17. For each valve, two irrigation schedules shall be prepared, one for the initial establishment period of six months and one for the established landscape, which incorporate the specific water needs of the plants and turf throughout the calendar year.

18. Planting Plans (Section 19.570.030(A)) and Irrigation Design Plans (Section 19.570.050(B)) shall be drawn at the same size and scale.

19. The Irrigation Design Plan shall be prepared, wet-stamped, and signed by a certified irrigation designer, as defined in Section 19.570.090(D).

C. Soil Management Plan Requirements

1. After mass grading, the project applicant or his/her designee shall:

a. perform a preliminary site inspection;

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

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

d. obtain appropriate soil sample(s).

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

a. Soil texture;

b. Infiltration rate determined by laboratory test or soil texture infiltration rate tables;

c. pH;

d. Total soluble salts;

e. Sodium; and

f. Soil amendment recommendations.

3. The project applicant or his/her designee shall prepare documentation describing the following:

a. Soil type;

b. Identification of limiting soil characteristics;

c. Identification of planned soil management actions to remediate limiting soil characteristics; and

d. Submit the soil analysis report and documentation verifying implementation of soil analysis report recommendations to the Planning Division.

D. Grading Design Plan Requirements (if applicable)

1. The project submittal shall include rough/precise grade elevations in accordance with Title 17 (Grading) of the Riverside Municipal Code and be prepared by a licensed civil engineer.

19.570.040 Landscape Maintenance and Irrigation Schedules

A. Irrigation Schedules

1. Two irrigation schedules shall be prepared which incorporate the specific water needs of the plants and turf throughout the calendar year:

a. One irrigation schedule shall be prepared for the initial establishment period (first six months); and

b. One irrigation schedule for the established landscape (after six months).

2. The irrigation schedules shall:

a. take into account the recommendations of the Soil Management Plan (Section 19.570.030 (C));

b. be continuously available on site to those responsible for the landscape maintenance;

c. contain specifics as to optimum run time and frequency of watering and irrigation hours per day

3. The irrigation schedule currently in effect shall be posted at the controller and be protected to withstand all weather conditions so as to remain legible over time.

B. A regular maintenance schedule and Certificate of Completion shall be submitted to the Planning Division, property owner, and water purveyor (if applicable). A regular maintenance schedule shall include, but not be limited to:

1. Routine inspection, adjustments, and repair of the irrigation system and its components;

2. Aerating and dethatching of turf areas;

3. Replenishing mulch;

4. Fertilizing;

5. Pruning, weeding in all landscape areas, and removing any obstruction to irrigation devices.

C. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance.

D. Information shall be provided to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.

19.570.050 Certificate of Compliance

A. Prior to issuance of a certificate of occupancy or final inspection for a project subject to this Chapter, a regular maintenance schedule and a Certificate of Completion shall be

submitted to the Planning Division certifying that the landscaping has been completed in accordance with the approved planting, irrigation, soil management, and grading design plans for the project. The Certificate of Completion shall be signed by a licensed landscape architect and shall indicate:

1. Date

2. Project information

3. Prior to backfilling, evidence that the party responsible for irrigation installation conducted a preliminary field inspection of the irrigation system (evidence of field inspection shall be attached).

4. The landscape has been installed in conformance with the approved planting and irrigation plans;

5. Irrigation audit report performed by a certified irrigation auditor after project installation (audit report shall be attached);

6. The smart irrigation controller has been set according to the irrigation schedule;

7. The irrigation system has been adjusted to maximize irrigation efficiency and eliminate overspray and runoff;

8. A copy of the approved landscape and irrigation design plans, the irrigation schedule, and the maintenance schedule has been given to the property owner and local water purveyor; and

9. Verification that the maintenance schedule has been provided to the Planning Division.

B. At a minimum, all landscape irrigation audits shall comply with the Irrigation Association's "Certified Landscape Irrigation Auditor Training Manual" and shall be conducted by a certified landscape irrigation auditor. This document can be found online at the Irrigation Association's website (http://www.irrigation.org/default.aspx).

C. The Zoning Administrator or his/her designee shall have the right to enter upon the project site at any time before, during and after installation of the landscaping, to conduct inspections for the purpose of enforcing this Chapter.

19.570.060 Recycled Water

A. The installation of recycled water irrigation systems (dual distribution systems) may be required by the Zoning Administrator to allow for the current and future use of recycled water.

B. Recycled water irrigation systems shall be designed and operated in accordance with local and State codes.

C. Chapter 14.28 – The Mandatory Use of Recycled Water is hereby incorporated by reference.

19.570.070 Existing Landscapes

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

1. For all landscapes that have a dedicated water meter, the water purveyor shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys, irrigation audits, and irrigation equipment rebates to evaluate water use and provide recommendations as necessary to reduce landscape water use to a level that does not exceed the Maximum Applied Water Allowance (MAWA) for existing landscapes. The MAWA for existing landscapes shall be calculated as: MAWA = (0.8)(ETo)(LA)(0.62).

2. For all landscapes that do not have a dedicated water meter, the water purveyor shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys, irrigation audits, and irrigation equipment rebates to evaluate water use and provide recommendations as necessary in order to prevent water waste.

B. Water waste resulting from inefficient landscape irrigation shall be prevented 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.

19.570.080 Cemeteries

A. New cemeteries shall comply with the provisions of Section 19.570.030(A) and (B), 19.570.040(A) and (B), and 19.570.050.

B. Existing cemeteries shall comply with the provisions of Section 19.570.070.

19.570.090 Definitions

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

A. “applied water” means the portion of water supplied by the irrigation system to the landscape.

B. “backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation

system.

C. “Certificate of Completion” means the document required under Section 19.570.060(B).

D. “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 Landscape Irrigation Designer program.

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. “controller” means an automatic timing device used to remotely control valves to operate an irrigation system. A smart irrigation controller is a *weather-based* irrigation controller or a *self-adjusting* irrigation controller. 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).

H. “conversion factor (0.62)” means the number that converts acre-inches per acre per year to gallons per square foot per year.

I. “drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

J. “ecological restoration project” means a project where the site is intentionally alters to establish a defined, indigenous, historic ecosystem.

K. “effective precipitation” or “usable rainfall” (Eppt) means the portion of total precipitation which becomes available for plant growth.

L. “emitter” means a drip irrigation emission device that delivers water slowly from the system to the soil.

M. “established landscape” means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.

N. "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. Typically, most plants are established after one or two years of growth.

O. "Estimated Annual Water Use" (EAWU) means the total water used for the landscape as described in Section 19.570.040(A)(12)(n).

P. "ET adjustment factor" (ETAF) means a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET adjustment factor is (0.7) = (0.5/0.71). ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing, non-rehabilitated landscapes is 0.8.

Q. "evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

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

S. "hardscapes" means any durable material (pervious and non-pervious).

T. "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. A homeowner, for the purposes of this Chapter, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.

U. "hydrozone" (HA) means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

V. "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).

W. "invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by County agricultural agencies as noxious species. "Noxious" weeds means any weed designated by the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

X. "irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

Y. "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 Chapter is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

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

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

BB. "landscape architect" means a person who holds a license to practice landscape architecture in the State of California Business and Professions Code, Section 5615.

CC. "landscape area" 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 includes 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).

DD. "landscape contractor" means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

EE. "landscape project" means the total area of landscape in a project as defined in "landscape area" for the purposes of this Chapter.

FF. "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

GG. "local agency" means a city or county, including charter city or charter county, that is responsible for adopting and implementing this Chapter. 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.

HH. "local water purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.

II. "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 or water slowly at or near the root zone of plants.

JJ. "main line" means the pressurized pipeline that delivers water from the water sources to the valve or outlet.

KK. "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated 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 irrigation with recycled water are subject to the MAWA with an ETAF not to exceed 1.0.

LL. "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.

MM. "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.

NN. "mulch" means any organic material such as leaves, bark, straw, compost, or 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.

OO. "new construction" means, for the purposes of this Chapter, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

PP. "operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

QQ. "overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).

RR. "overspray" means the irrigation water which is delivered beyond the target area.

SS. "permit" means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

TT. "pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.

UU. "plant factor" or "plant water use factor" (PF) is a factor, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this Chapter, 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 Chapter are derived from the Department of Water Resources 2000 publication, "Water Use Classification of Landscape Species."

VV. "precipitation rate" means the rate of application of water measures in inches per hour.

WW. "project applicant" means the individual or entity submitting a landscape documentation package 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.

XX. "rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.

YY. "recreational area" means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.

ZZ. "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.

AAA. "reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is given expressed in inches per day, month, or year, 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. Refer to the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.

BBB. "rehabilitated landscape" means an re-landscaping project that requires a permit, plan check, or design review, and where the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area, and the modifications are completed within one year.

CCC. "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 slope.

DDD. "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.

EEE. "soil texture" means the classification of soil based on its percentage of sand, silt, and clay.

FFF. "Special Landscaped 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.

GGG. "sprinkler head" means a device which delivers water through a nozzle.

HHH. "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.

III. "station" means an area served by one valve or by a set of valves that operate simultaneously.

JJJ. "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.

KKK. "turf" means 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.

LLL. "valve" means a device used to control the flow of water in the irrigation system.

MMM. "water conserving plant species" means a plant species identified as having a low plant factor.

NNN. "water feature" means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artifical 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.

OOO. "watering window" means the time of day irrigation is allowed.

PPP. "WUCOLS" means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources, and the Bureau of Reclamation, 2000.

P09-0309, EXHIBIT 2

COMPARISON OF WATER EFFICIENT LANDSCAPE ORDINANCE REQUIREMENTS
SEPTEMBER 2009

MAJOR PROVISIONS	CITY OF RIVERSIDE EXISTING (1993)	CITY OF RIVERSIDE PROPOSED (2009)	DRAFT STATE MODEL ORDINANCE	WRCOG ORDINANCE
APPLICABILITY				
Homeowner-provided or hired (SFRs and MFRs)	Discretionary Projects: Commercial Industrial Multi-Family Residential Common Space	New construction landscapes in single-family and multiple-family residential projects with a landscape area equal to or greater than 5,000 square feet	New construction landscapes in single-family and multiple-family residential projects with a landscape area equal to or greater than 5,000 square feet	New construction landscapes in single-family and multiple-family residential projects with a landscape area equal to or greater than 5,000 square feet
Developer-installed (SFRs and MFRs)		New construction and rehabilitated landscapes in single-family and multiple-family residential projects with a landscape area equal to or greater than 2,500 square feet	New construction and rehabilitated landscapes in single-family and multiple-family residential projects with a landscape area equal to or greater than 2,500 square feet	New construction and rehabilitated landscapes in single-family and multiple-family residential projects with a landscape area equal to or greater than 2,500 square feet
Public agency/private developments		All other landscape projects with a landscape area equal to or greater than 2,500 square feet	All other landscape projects with a landscape area equal to or greater than 2,500 square feet	All other landscape projects with a landscape area equal to or greater than 2,500 square feet
Existing Landscapes		-Existing landscapes with a dedicated landscape water meter shall verify compliance with the MAWA for established landscapes (Section 19.570.070(A)(1)). -Existing landscapes without a dedicated landscape water meter shall verify proper operation of irrigation system to prohibit runoff/water waste -RPU already provides audits, surveys, and water use analyses as a free service to residents in addition to offering a series of rebates for landscaping & irrigation equipment.	Existing landscapes (over one acre) are only subject to: -local agencies shall administer programs that include audits, surveys, and water use analyses -prohibit runoff/water waste prevention	Existing Landscapes are subject to: -compliance with the measures listed under Conservation Element/Restrictions
Cemeteries	Cemeteries are exempt	-New Cemeteries and rehabilitated shall comply with the provisions for Landscape Planting Plans and Irrigation Design Plans (Section 19.570.030 (A) and (B)), Landscape Maintenance and Irrigation Schedules (Section 19.570.040(A) and (B)), and Submittal Process and Certificate of Compliance (Section 19.570.050). -Existing Cemeteries shall comply with the provisions of Existing Landscapes (Section 19.570.070).	New and rehabilitated cemeteries only subject to: -submittal of Water Efficient Landscape Worksheet (water budget calculations) -submittal of maintenance schedule -irrigation audits, surveys, and water use analyses -prohibiting runoff Existing Cemeteries: -same as existing landscape requirements (audits, surveys, and water use analyses)	New and rehabilitated cemeteries only subject to: -submittal of two irrigation schedules (initial establishment and established landscapes) -submittal of maintenance schedule Existing Cemeteries: -compliance with the measures listed under Conservation Element/Restrictions -installation of second water meter and compliance with MAWA (water budget)

MAJOR PROVISIONS	CITY OF RIVERSIDE EXISTING (1993)	CITY OF RIVERSIDE PROPOSED (2009)	DRAFT STATE MODEL ORDINANCE	WRCOG ORDINANCE
Other				In the event CC&Rs are required for any permit issuance (related to this ordinance), a condition shall be added prohibiting the use of water-intensive landscaping.
EXCLUSIONS				
	Single Family Dwellings Duplexes Registered Historical Sites Ecological restoration projects* Mined-land restoration projects* Cemeteries Public Parks * if no permanent irrigation system	-Any project with a total landscape area less than 2,500 square feet -Registered local, state, or federal historical sites -Ecological restoration projects -Mined-land restoration projects -Plant collections, as part of botanical gardens and arboretums open to the public	-Registered (local, state, or federal) Historical Sites -Ecological restoration projects* -Mined-land restoration projects* -Plant collections, botanical gardens, and arboretums * if no permanent irrigation system	-Any project with a total landscape area less than 2,500 square feet -Registered local, state, or federal historical sites -Ecological restoration projects -Mined-land restoration projects -Plant collections, as part of botanical gardens and arboretums open to the public
PLANT REQUIREMENTS				
	"…emphasize drought-tolerant and native species …, and be suitable for the soil and climatic conditions of the site."	Riverside County Guide to California Friendly Landscaping, Western Municipal Water District's Water-wise 140, or any other plant list that promotes the use of water efficient or California native plant materials (incorporated by reference)	Any plant may be selected for the landscape, providing the water use does not exceed the maximum applied water allowance (water budget)	Riverside County Guide to California Friendly Landscaping (incorporated by reference)
WATER BUDGET				
	Allowable percentage = 0.8ETo	Allowable percentage = 0.7ETo	Allowable percentage = 0.7ETo	Allowable percentage = 0.7ETo
SPRINKLER CONTROLLER				
	Automatic Irrigation Controller	Smart Controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions…additional water conservation technology may be required, where necessary, at the discretion of the Zoning Administrator	Weather based irrigation controllers or soil moisture based controllers or other self-adjusting irrigation controllers… sensors, either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climactic conditions…irrigation should be avoided during windy or freezing weather or during rain	Smart Controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions…additional water conservation technology may be required, where necessary, at the discretion of the Planning Director
SOILS ANALYSIS				
	Optional	Required	Required	Required

MAJOR PROVISIONS	CITY OF RIVERSIDE EXISTING (1993)	CITY OF RIVERSIDE PROPOSED (2009)	DRAFT STATE MODEL ORDINANCE	WRCOG ORDINANCE
RECYCLED WATER PROVISIONS				
	At discretion of Zoning Administrator	Where available, recycled water shall be used as the source for irrigation and water features	The installation of recycled water systems shall allow for the current and future use of recycled water, unless a written exemption has been granted stating that recycled water is not available and will not be available for the foreseeable future Where available, the use of recycled water shall be used as a source for decorative water features	Where available, recycled water shall be used as the source for irrigation and water features
LANDSCAPE IRRIGATION AUDITS				
	Optional	Irrigation audits shall be completed by a certified irrigation auditor An irrigation audit report shall be submitted with the Certificate of Completion	Irrigation audits shall be completed by a certified irrigation auditor An irrigation audit report shall be submitted with the Certificate of Completion	Irrigation audits shall be completed by a certified irrigation auditor An irrigation audit report shall be submitted with the Certificate of Completion
SECOND WATER METER (LANDSCAPE DEDICATED)				
	Not Required	California Water Code, Section 535 – separate water meters shall be required if the connection serves a property with more than 5,000 square feet of irrigated landscape and the connection is supplied by a water purveyor that serves 15 or more service connections Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet Exempt from this provision are single-family homes, commercial connections for the production of agricultural crops/livestock, and any project with less than 5,000 square feet of irrigated landscape.	California Water Code, Section 535 – separate water meters shall be required if the connection serves a property with more than 5,000 square feet of irrigated landscape and the connection is supplied by a water purveyor that serves 15 or more service connections Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet Exempt from this provision are single-family homes, commercial connections for the production of agricultural crops/livestock, and any project with less than 5,000 square feet of irrigated landscape.	A second water meter shall be required for landscape areas greater than or equal to 2,500 except for single family residences

MAJOR PROVISIONS	CITY OF RIVERSIDE EXISTING (1993)	CITY OF RIVERSIDE PROPOSED (2009)	DRAFT STATE MODEL ORDINANCE	WRCOG ORDINANCE
CONSERVATION ELEMENTS				
	Irrigation shall be schedule to avoid irrigating during times of high wind or high temperature	Overhead irrigation shall be limited to the hours between 7 p.m. and 9 a.m. **Additional Conservation Ordinance elements to be pursued separately by the Riverside Public Utilities Department**	-overhead irrigation shall be scheduled between 8pm and 10am -provisions for irrigation audits (as noted previously) -encourage local agencies/water purveyors to use economic incentives that promote the efficient use of water, such as implementing tiered-rate structures	Restrictions/conservation elements: -Limiting watering hours 7pm-9am -No excessive water flow or runoff -No washing down hard or paved surfaces -obligation to fix leaks, breaks, or malfunctions Water purveyor programs that enhance water use efficiency: -tiered water rate structure -allocation-based conservation water pricing -irrigation audits and/or surveys -penalties for water waste

P09-0309, EXHIBIT 3

Model Water Efficient Landscape Ordinance
July 15, 2009

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

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 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, 493.1 and 493.2.
(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)~~(c)~~ "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) "automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
(c)~~(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.
(d) "Certificate of Completion" means the document required under Section 492.9.
(e) "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.
(f) "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.
(g) "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.
(h) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.
(i)~~(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:~~
~~(325,851 gallons/43,560 square feet)/12 inches = (0.62)~~

~~325,851 gallons = one acre foot~~
~~43,560 square feet = one acre~~
~~12 inches = one foot~~
~~To convert gallons per year to 100-cubic-feet per year, another common billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet.)~~
(j) "drip irrigation" means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
(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 *which becomes available for plant growth.* ~~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* root~~s~~ *growth* into the 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. Typically, most plants are established after one or two years of growth.*
~~(*l*) "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(c)(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(c)(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. A homeowner, for purposes of this ordinance, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.
(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 plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. "Noxious weeds" means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

(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 ~~0.65~~0.71. 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 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)~~ "landscape~~d~~ 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 by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

(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. ~~(c)(2)~~ It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape~~d~~ 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, *compost* 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, such as a park, playground or greenbelt without an associated building.

(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.~~, wetting pavements, walks structures, or other non-landscaped areas.~~

(uu) "permit" means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

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

(ww)~~(dd)~~ "plant factor" *or "plant water use factor"* ~~means~~ *is* a factor ~~that~~, when multiplied by ~~reference evapotranspiration~~ ETo, 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 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 "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo 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 the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area, and the modifications are completed 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 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 495.1, Appendix A. For geographic areas not covered in Appendix A, use data from other cities located nearby in the same reference evapotranspiration zone, as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.
(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) (0.8) (LA) (0.62) 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;
MAWA = (ETo) (0.62) [(0.7 x LA)+ (0.3 x SLA)]
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, automatic irrigation controllers are required and shall use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.
(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 = (ETo) (0.62) [(0.7 x LA)+ (0.3 x SLA)]
MAWA = Maximum Applied Water Allowance (gallons per year)
ETo = Reference Evapotranspiration (inches per year)
0.62 = Conversion Factor (to gallons)
0.7 = ET Adjustment Factor (ETAF)
LA = Landscape Area including SLA (square feet)
0.3 = Additional Water Allowance for SLA
SLA = Special Landscape Area (square feet)
MAWA = (51.1 inches) (0.62) [(0.7 x 50,000 square feet) + (0.3 x 0)]
= 1,108,870 gallons per year
To convert from gallons per year to hundred-cubic-feet per year:
= 1,108,870/748 = 1,482 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 ETo value of 51.1 inches and a total landscape area of 50,000 square feet. Within the 50,000 square foot project, there is now a 2,000 square foot area planted with edible plants. This 2,000 square foot area is considered to be a Special Landscape Area.
MAWA = (ETo) (0.62) [(0.7 x LA)+ (0.3 x SLA)]
MAWA = (51.1 inches) (0.62) [(0.7 x 50,000 square feet) + (0.3 x 2,000 square feet)]
= 31.68 x [35,000 +600] gallons per year
= 31.68 x 35,600 gallons per year
=1,127,808 gallons per year or 1,508 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 (hydrozone) = (ETo) (PF) (HA) (.62)~~
~~÷ (IE)~~
~~EWU (hydrozone = Estimated Water Use (gallons per year)~~
~~ETo = 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. The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed MAWA.

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

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 are no Special Landscape Areas (recreational area, area permanently and solely dedicated to edible plants and area irrigated with recycled water) in this example.

Hydrozone	*Plant Water Use Type(s)*	*Plant Factor (PF)**	*Hydrozone Area (HA) (square feet)*	*PF x HA (square feet)*
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*
			Sum	*24,700*

**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: For this example MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 0)] = 1,108,870 gallons per year. 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 (SLA). The reference evapotranspiration value is 51.1 inches per year. The plant type, plant factor and hydrozone area are shown in the table below.

Hydrozone	*Plant Water Use Type(s)*	*Plant Factor (PF)**	*Hydrozone Area (HA) (square feet)*	*PF x HA (square feet)*
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*
			Sum	*23,500*
6	*SLA*	*1.0*	*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 gallons per year
Compare ETWU with MAWA. For this example:
MAWA = (51.1) (0.62) [(0.7 x *50,000) + (0.3* x *2000)]*
= 31.68 x *[35000 +600]*
= 31.68 x *35,600*
=1,127,808 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 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 and turf species;
3. selection of plants based on disease and pest resistance;
4. selection of trees based on applicable local tree ordinances or tree shading guidelines; and
5. 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 hydrozones with plants of mixed water use, as specified in Section 492.7(a)(2)(D).

(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 strongly discouraged.
(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.
~~(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, at a minimum, shall:
(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) bear the signature of a licensed landscape architect, licensed landscape contractor or any other person 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 Title16 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 and Section 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 manufacturers' 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) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data 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 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, at a minimum, the 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 recommendations.
(O) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's 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) 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 system.
(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 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 the 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 the 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 the irrigation audit 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 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, licensed landscape contractor or any other person 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 Title16 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 shall bear the signature of a licensed professional as authorized 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:

l/we certify that work has been installed in accordance with the contract documents.

Contractor Signature Date State License Number

l/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

l/we certify that l/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:

(1) project information sheet that contains:

(A) date;

(B) project name;

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

(D) project address and location; and

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

(2) 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;

(A) where there have been significant changes made in the field during construction, these "as-built" or record drawings shall be included with the certification;

(3) irrigation scheduling parameters used to set the controller (see Section 492.10);

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

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

(6) 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 be regulated by automatic irrigation controllers.

(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 regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.

(4) Parameters used to set the automatic 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. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
(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) All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.
(b) 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 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, cisterns, and other landscapes features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage 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 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 to evaluate water use and provide recommendations as necessary to reduce landscape water use

to a level that 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) (ETo)(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 to evaluate water use and provide recommendations as necessary in order to prevent water waste.
(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 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 and runoff may be modified if:
(1) the landscape area is adjacent to permeable surfacing and no 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= (ETo-Eppt) (0.62)[(0.7 x LA) + (0.3 x 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 (ETo) Table.

495

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
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	1.1	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
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
	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	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
	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	4.9	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
	Calipatria	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	3.5	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	49.0
	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	Corcoran	0.9	1.5	3.3	5.2	7.2	7.9	8.4	7.3	5.8	3.4	1.4	0.7	53.1
	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 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	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	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	51.5
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	Castroville	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	2.1	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
	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
	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
	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	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	2.3	3.1	4.9	6.7	9.3	10.0	11.2	9.8	7.4	5.1	2.8	1.8	74.6

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	2.1	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	4.1	3.3	2.4	2.0	42.9
	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	2.5	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	2.1	2.7	3.7	4.5	5.5	6.1	6.6	6.2	5.4	3.8	2.6	2.0	51.1
	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	35.1
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
	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	49.5
	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	50.1
	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	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
	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	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
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	41.1
	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	2.2	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	3.1	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 Camo	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
	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	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
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
	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	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
	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 (ETo) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
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
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
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 (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
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 (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
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 (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
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 (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
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 (ETo) Table*													
County and City	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual ETo**
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.

SECTION A. HYDROZONE INFORMATION TABLE

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

Hydrozone*	***Zone or Valve***	***Irrigation Method****	***Area (Sq. Ft.)***	***% of Landscape Area***
	Total			***100%***

**** Hydrozone***
HW = High Water Use Plants
MW = Moderate Water Use Plants
LW = Low Water Use Plants

*****Irrigation Method***
MS = Micro-spray
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 = (ETo)(0.62)[(0.7 x LA) + (0.3 x SLA)]

where:

MAWA = Maximum Applied Water Allowance (gallons per year)
ETo = Reference Evapotranspiration from Appendix A (inches per year)
0.7 = ET Adjustment Factor (ETAF)
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 per year

Show calculations.

Effective Precipitation (Eppt)

If considering Effective Precipitation, use 25% of annual precipitation. Use the following equation to calculate Maximum Applied Water Allowance:

MAWA= (ETo – Eppt) (0.62)[(0.7 x LA)+(0.3 x SLA)]

Maximum Applied Water Allowance** = _____**gallons per year

Show calculations.

Section B2. Estimated Total Water Use (ETWU)

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

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

where:

ETWU = Estimated total water use per year (gallons per year)
ETo = Reference Evapotranspiration (inches per year)
PF = Plant Factor from WUCOLS (see Definitions)
HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
SLA = Special Landscape Area (square feet)
0.62 = Conversion Factor (to gallons per square foot)
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 (HA) (square feet)*	*PF x HA (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.

PART 1. 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)*
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 and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

_____

Property Owner Signature *Date*

Please answer the questions below:

1. *Date the Landscape Documentation Package was submitted to the local agency*_____
2. *Date the Landscape Documentation Package was approved by the local agency*_____
3. *Date that a copy of the Water Efficient Landscape Worksheet (including the Water Budget Calculation) was submitted to the local water purveyor*_____

PART 2. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE

"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.*

PART 3. 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. LANDSCAPE IRRIGATION AUDIT REPORT

Attach Landscape Irrigation Audit Report per ordinance Section 492.12.

PART 6. SOIL MANAGEMENT REPORT

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.

Symbol Key	☐ = City/County ● = Water Agency ◆ = City that also provides retail water service

Who should adopt this section?	Ordinance Section	Toolbox
	ORDINANCE NO. ___ **AN ORDINANCE OF THE COUNTY OF RIVERSIDE AND ASSOCIATED CITIES ESTABLISHING LANDSCAPE WATER USE EFFICIENCY REQUIREMENTS** The *City Council/Board of Supervisors/Board of Directors* of _____ does ordain as follows:	
§1 ☐ ● ◆	**Section 1. SHORT TITLE.** This Ordinance shall be known as the "Landscape Water Use Efficiency Ordinance".	
§2 ☐ ● ◆	**Section 2. INTENT.** It is the intent of the *City Council/Board of Supervisors/Board of Directors* in adopting this Ordinance to: A. Establish provisions for water management practices and water waste prevention; B. Establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects; C. To reduce the water demands from landscapes without a decline in landscape quality or quantity; D. To retain flexibility and encourage creativity through appropriate design; E. To assure the attainment of water-efficient landscape goals by requiring that landscapes not exceed a maximum water demand of seventy percent (70%) of its reference evapotranspiration (ET_o) or any lower percentage as may be required by water purveyor policy or state legislation, whichever is stricter; F. To eliminate water waste from overspray and/or runoff; G. To achieve water conservation by raising the public awareness of the need to conserve water through education and motivation to embrace an effective water demand management program; and H. To implement the requirements to meet the state of California Water Conservation in Landscaping Act 2006 and the California Code of Regulations Title 23, Division 2, Chapter 2.7.	
§3 ☐ ● ◆	**Section 3. DEFINITIONS.** The terms used in this ordinance have the meaning set forth below: A. "backfilling" means to refill an excavation, usually with excavated material B. "backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system. C. "check valve" or "anti-drain valve" means a valve located under a sprinkler head or other location in the irrigation system to hold water in the system to prevent drainage from the sprinkler heads when the system is off. D. "established landscape" means the point at which plants in the landscape have developed significant root growth into the site. Typically, most plants are established after one or two years of growth.	

Who should adopt this section?	Ordinance Section	Toolbox
	E. "Estimated Annual Water Use" or "EAWU" means estimated total water use per year as calculated by the formula contained in Section 5.B.12.n. F. "hydrozone" means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated. G. "invasive species" are non-indigenous species (e.g., plants or animals) that adversely affect the habitats they invade economically, environmentally, or ecologically. Lists of invasive species are included within the Western Riverside County Multi-Species Habitat Conservation Plan and the Coachella Valley Multi-Species Habitat Conservation Plan (incorporated by reference). In addition, for the purposes of this ordinance, invasive species include other locally invasive species as further defined by a local lead agency. H. "landscape architect" means a person who holds a license to practice landscape architecture in the state of California (Government Code Section 5615). I. "landscaped area" or "LA" means all of the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance (MAWA) 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 impervious hardscapes, and other non-irrigated areas designated for non-development (e.g. , open spaces and existing native vegetation). J. "local water purveyor" means any entity, including a public agency, city, county or private water company that provides retail water service to customers in Riverside County. K. "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. L. "Maximum Applied Water Allowance" or "MAWA" means the upper limit of annual applied water allowed for the established landscaped area. M. "overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g. , pop ups, impulse sprinklers, spray heads and rotors, etc.). N. "reference evapotranspiration" or "ET_o" means a standard measurement of environmental parameters which affect the water use of plants. ET_o is given in inches per day, month, or year. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances so that regional differences in climate can be accommodated. Reference evapotranspiration numbers shall be taken from the most current EvapoTranspiration Zones Map by the California Department of Water Resources. For geographic areas not covered by the EvapoTranspiration Zones Map, data from nearby areas shall be used. O. "rehabilitated landscapes" means any re-landscaping project that requires a permit, plan check, or design review, and/or would meet the requirements of Section 4. P. "special landscape area" means an area of the landscape dedicated to edible plants, areas irrigated with recycled water, and publicly accessible areas dedicated to active play such as parks, sports fields, golf courses, where turf provides a playing field or where turf is needed for high traffic activities. Q. "temporarily irrigated" means irrigation for the purposes of establishing plants, or irrigation which will not continue after plant establishment. Temporary irrigation is for a period of six months or less.	

Who should adopt this section?	Ordinance Section	Toolbox
	R. "water intensive landscaping" means a landscape with a WUCOLS plant factor of 0.7 or greater. S. "WUCOLS" means the publication entitled "Water Use Classification of Landscape Species" by the U.C. Cooperative Extension (1999 or most current version).	
varies by sub-section	**Section 4. APPLICABILITY.**	
§4A ●	A. The water-efficient landscape requirements contained in this Ordinance apply to existing properties with landscape areas one acre or greater in size or properties served by a dedicated landscape irrigation meter.	This version of section 4A is specific to water agencies "●".
§4A □ ◆	A. The water-efficient landscape requirements contained in this Ordinance shall be applicable to all new construction landscapes which are homeowner-provided and or homeowner-hired in single-family and multi-family projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan checks or design review and/or all other landscape projects with a landscape area equal to or greater than 2,500 square feet subject to discretionary permits, plan checks, design reviews, and/or approvals.	This version of section 4A is specific to cities/counties "□" and cities that also provide retail water service "◆".
§4B □ ◆	B. In the event Covenants, Conditions and Restrictions are required by the *County/City* for any permit subject to this Ordinance, a condition shall be incorporated into any project approval prohibiting the use of water-intensive landscaping and requiring the use of low water use landscaping pursuant to the provisions of this Ordinance in connection with common area/open space landscaping. Additionally, such a condition shall also require the Covenants, Conditions and Restrictions to incorporate provisions concerning landscape irrigation system management and maintenance. This Ordinance shall not be construed as requiring landscaping of common areas or open space that is intended to remain natural. Covenants, Conditions, and Restrictions shall not prohibit use of low-water use plants. Covenants, Conditions, and Restrictions shall not prohibit the replacement of turf with less water intensive plant species.	
§4C □ ◆	C. Section 8 of this Ordinance applies to existing properties with landscape areas one acre or greater in size or properties served by a dedicated landscape irrigation meter.	
§4D □ ◆	D. Recognizing the special landscape needs of cemeteries, new and rehabilitated cemeteries are limited to sections 6.A, 6.B, and 6.C. Existing cemeteries are limited to Section 8.	
§4E □ ◆	E. The following are exempt from the provisions of this chapter: 1. Any project with a total landscaped area less than 2,500 square feet; 2. Registered local, state or federal historical sites; 3. Ecological restoration projects that do not require a permanent irrigation system and have an establishment period of less than 3 years; 4. Mined-land reclamation projects that do not require a permanent irrigation system; and 5. Botanical gardens and arboretums open to the public.	

Who should adopt this section?	Ordinance Section	Toolbox
varies by sub-section	**Section 5. LANDSCAPE DOCUMENTATION PACKAGE REQUIREMENTS.**	
§5 ●	An applicant proposing any new landscape that is subject to this ordinance (Section 4) and designated for recycled water use, is advised that recycled water irrigation systems will entail additional coordination with the local water purveyor, the land use agency and the maintenance entity's standards, approvals, and implementation requirements. Therefore, applicants shall consult with the appropriate water purveyor early in the development review process to ensure that future recycled water facilities meet the projected demand and that subsequent landscape plans comply with the applicable standards, approvals, and implementation requirements of the local water purveyor, land use agency, and maintenance entity. Water systems for common open space areas shall use non-potable water if approved facilities are made available by the water purveyor. Provisions for a non-potable water system shall be provided within the landscape plan. Water systems designed to utilize non-potable water shall be designed to meet all applicable standards of the California Regional Water Quality Control Board and the Riverside County Health Department.	This version of section 5 is specific to water agencies "●".
§5 □ ◆	An applicant proposing any new or rehabilitated landscape subject to this ordinance (Section 4) shall prepare and submit to the planning director documentation including the following: 1. Project Information (Section 5.A); 2. Planting Plan (see Section 5.B); 3. Irrigation Design Plan (see Section 5.C); 4. Soil Management Plan (see Section 5.D); and 5. Grading Design Plan (see Section 5.E). An applicant proposing any new landscape that is subject to this ordinance (Section 4) and designated for recycled water use, is advised that recycled water irrigation systems will entail additional coordination with the local water purveyor, the land use agency and the maintenance entity's standards, approvals, and implementation requirements. Therefore, applicants shall consult with the appropriate water purveyor early in the development review process to ensure that future recycled water facilities meet the projected demand and that subsequent landscape plans comply with the applicable standards, approvals, and implementation requirements of the local water purveyor, land use agency, and maintenance entity. Water systems for common open space areas shall use non-potable water if approved facilities are made available by the water purveyor. Provisions for a non-potable water system shall be provided within the landscape plan. Water systems designed to utilize non-potable water shall be designed to meet all applicable standards of the California Regional Water Quality Control Board and the Riverside County Health Department. A. PROJECT INFORMATION 1. Date 2. Applicant and applicant contact information 3. Project owner and contact information 4. Project address including parcel and lot numbers 5. Total landscape area (sq. ft.) 6. Project type (e.g., new, rehabilitated, public, private)	This version of section 5 is specific to cities/counties "□" and cities that also provide retail water service "◆". *A City/County should augment this part of the ordinance with information on when they will require the landscape documentation package (e.g., prior to building permit).*

Who should adopt this section?	Ordinance Section	Toolbox
	7. Water supply (e.g., potable, well, recycled). Use of recycled water is encouraged. 8. Applicant signature and date with statement "I agree to comply with the requirements of Ordinance __ and submit a complete Landscape Documentation Package" B. PLANTING PLAN REQUIREMENTS 1. The "Riverside County Guide to California Friendly Landscaping" (Landscaping Guide) is hereby incorporated by reference to assist with developing water efficient landscapes. 2. Plant types shall be grouped together in regards to their water, soil, sun and shade requirements and in relationship to the buildings. Plants with different water needs shall be irrigated separately. Plants with the following classifications shall be grouped accordingly: high and moderate, moderate and low, low and very low. Deviation from these groupings shall not be permitted. 3. Trees for shade shall be provided for residential, commercial and industrial buildings, parking lots and open space areas. These trees can be deciduous or evergreen and are to be incorporated to provide natural cooling opportunities for the purpose of energy and water conservation. 4. Plants shall be placed in a manner considerate of solar orientation to maximize summer shade and winter solar gain. 5. Plant selection 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). Fire-prone plant materials and highly flammable mulches shall be avoided. 6. Invasive species of plants shall be avoided especially near parks, buffers, greenbelts, water bodies, and open spaces because of their potential to cause harm in to environmentally sensitive areas. 7. All exposed surfaces of non-turf areas within the developed landscape area shall be mulched with a minimum three inch (3") layer of material, except in areas with groundcover planted from flats where mulch depth shall be one and one half inches (1 ½"). 8. Stabilizing mulching products shall be used on slopes. 9. Turf areas shall be used in response to functional needs and in compliance with the water budget. 10. Decorative water features shall use recirculating water systems. 11. Where available, recycled water shall be used as the source for irrigation and decorative water features. 12. Planting Plans shall identify and site the following: a. New and existing trees, shrubs, ground covers, and turf areas within the proposed landscape area; b. Planting legend indicating all plant species by botanical name and common name, spacing, and quantities of each type of plant by container size; c. Designation of hydrozones; d. Area, in square feet, devoted to landscaping and a breakdown of the total area by landscape hydrozones; e. Property lines, streets, and street names; f. Building locations, driveways, sidewalks, retaining walls, and other	

Who should adopt this section?	Ordinance Section	Toolbox
	hardscape features; g. Appropriate scale and north arrow; h. Any special landscape areas; i. Type of mulch and application depth; j. Type and surface area of any water features; k. Type and installation details of any applicable stormwater best management practices; l. Planting specifications and details, including the recommendations from the soils analysis, if applicable. m. Maximum Applied Water Allowance: i. Planting Plans shall be prepared using the following Water Budget Formula: MAWA (in gallons)= $(ET_o)(0.62)[0.7 \times LA+0.3 \times SLA]$ *where* *ET_o is reference evapotranspiration* *SLA is the amount of special landscape area in square feet* *LA is total lan*dscape area (including the SLA) in square feet ii. For the purposes of determining the 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 irrigation efficiency of 0.71. n. Estimated Annual Water Use (EAWU): i. EAWU for a given hydrozone is calculated as follows: *EAWU (in gallons) = $(ET_o)(0.62)[((PF \times HA)/IE) + SLA]$* *where* *$ET_o$ is reference evapotranspiration* *PF is Plant Factor* *HA is hydrozone area in square feet* *IE is irrigation efficiency (minimum 0.71)* *SLA is the amount of special landscape area in square feet* ii. Landscaping plans shall provide EAWU (in the same units as the MAWA) for each valve circuit in the irrigation hydrozone . The sum of all EAWU calculations shall not exceed the MAWA for the project. iii. The plant factor used shall be from WUCOLS. The plant factor for low water use plants range from 0 to 0.3, for moderate water use plants range from 0.4 to 0.6, and for high water use plants range from 0.7 to 1.0. iv. The plant factor calculation is based on the proportions of the respective plant water uses and their plant factor, or the plant factor of the higher water using plant is used. v. The surface area of a water features shall be included in the high water use hydrozone area of the water budget calculation and temporarily irrigated areas in the low water use hydrozone.	

Who should adopt this section?	Ordinance Section	Toolbox
	13. Planting Plans and Irrigation Plans (Section 5.C) shall be drawn at the same size and scale 14. The Planting Plan shall be prepared by a Landscape Architect licensed by the State of California. C. IRRIGATION DESIGN PLAN REQUIREMENTS. 1. The "Riverside County Guide to California Friendly Landscaping" (Landscaping Guide) is hereby incorporated by reference to assist the applicant in designing, constructing, and maintaining an efficient irrigation system. 2. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average irrigation efficiency of 0.71. 3. All irrigation systems shall be designed to prevent runoff, over-spray, lowhead drainage and other similar conditions where water flows off-site on to adjacent property, non-irrigated areas, walk, roadways, or structures. Irrigation systems shall be designed, constructed, managed, and maintained to achieve as high an overall efficiency as possible. 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. 4. Landscaped areas shall be provided with a smart irrigation controller which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions unless the use of the property would otherwise prohibit use of a timer. The planting areas shall be grouped in relation to moisture control zones based on similarity of water requirements (i.e., turf separate from shrub and groundcover, full sun exposure areas separate from shade areas, top of slope separate from toe of slope). Additional water conservation technology may be required, where necessary, at the discretion of the Planning Director. 5. Water systems for common open space areas shall use non-potable water, if approved facilities are made available by the water purveyor. Provisions for the conversion to a non-potable water system shall be provided within the landscape plan. Water systems designed to utilize non-potable water shall be designed to meet all applicable standards of the California Regional Water Quality Control Board and the Riverside County Health Department. 6. Separate valves shall be provided for separate water use planting areas, so that plants with similar water needs are irrigated by the same irrigation valve. All installations shall rely on highly efficient state of the art irrigation systems to eliminate runoff and maximize irrigation efficiency as required by the Landscaping Guide. 7. Static water pressure, dynamic or operating pressure and flow reading of the water supply shall be measured. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at the installation. 8. The capacity of the irrigation system shall not exceed: a. the capacity required for peak water demand based on water budget calculations; b. meter capacity; or c. backflow preventer type and device capacity 9. Sprinkler heads and other emission devices shall have matched precipitation	

Who should adopt this section?	Ordinance Section	Toolbox
	rates, unless otherwise directed by the manufacturer. 10. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone. 11. Non-turf areas on slopes greater than 25% shall be irrigated with drip irrigation or other low volume irrigation technology. 12. 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. 13. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. There are no restrictions on the irrigation system type if the landscape area is adjacent to permeable surfacing and no overspray and runoff occurs. 14. Overhead irrigation shall be limited to the hours of 8 p.m. to 9 a.m. 15. All irrigation systems shall be equipped with the following: a. A smart irrigation controller as defined in Section 5.C.4 of this Ordinance; b. A rain sensing device to prevent irrigation during rainy weather; c. Anti-drain check valves installed at strategic points to minimize or prevent low-head drainage; d. A manual shut-off 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 or routine repair; e. A pressure regulator when the static water pressure is above or below the recommended operating pressure of the irrigation system; f. Backflow prevention devices; and g. Riser protection components for all risers in high traffic areas. 16. Dedicated landscape meters shall be required for all projects greater than 2,500 sq. ft. except single-family residences. 17. Irrigation Design Plans shall identify and site the following: a. Hydrozones. i. Each hydrozone shall be designated by number, letter or other designation ii. A Hydrozone Information Table shall be prepared for each hydrozone b. The areas irrigated by each valve; c. Irrigation point of connection (POC) to the water system; d. Static water pressure at POC; e. Location and size of water meter(s), service laterals, and backflow preventers; f. Location, size, and type of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads and nozzles, pressure regulator, drip and low volume irrigation equipment; g. Total flow rate (gallons per minute), and design operating pressure (psi) for each overhead spray and bubbler circuit, and total flow rate (gallons per hour) and design operating pressure (psi) for each drip and low volume irrigation circuit; h. Precipitation rate (inches per hour) for each overhead spray circuit; i. Irrigation legend with the manufacturer name, model number, and general description for all specified equipment, separate symbols for	*Example hydrozone tables are provided in the Riverside County Guide to California Friendly Landscaping and in the Model Water Efficient Landscape Ordinance (CCR Title 23 Div 2 Chapter 2.7).*

Who should adopt this section?	Ordinance Section	Toolbox
	all irrigation equipment with different spray patterns, spray radius, and precipitation rate; j. Irrigation system details for assembly and installation; k. Recommended irrigation schedule for each month, including number of irrigation days per week, number of start times (cycles) per day, minutes of run time per cycle, and estimated amount of applied irrigation water, expressed in gallons per month and gallons per year, for the established landscape; and l. Irrigation Design Plans shall contain the following statement, "I agree to comply with the criteria of the ordinance and to apply them for the efficient use of water in the Irrigation Design Plan" 18. For each valve, two irrigation schedules shall be prepared, one for the initial establishment period of six months and one for the established landscape, which incorporate the specific water needs of the plants and turf throughout the calendar year. 19. Irrigation Plans and Planting Plans (Section 5.B) shall be drawn at the same size and scale D. SOIL MANAGEMENT PLAN REQUIREMENTS. 1. After mass grading, the project applicant or his/her designee shall: a. perform a preliminary site inspection; b. determine the appropriate level of soil sampling and sampling method needed to obtain representative soil sample(s); c. conduct a soil probe test to determine if the soil in the landscape area has sufficient depth to support the intended plants; and d. obtain appropriate soil sample(s). 2. The project applicant or his/her designee shall submit soil sample(s) to laboratory for analysis and recommendation. The soil analysis may include: a. soil texture; b. infiltration rate determined by laboratory test or soil texture infiltration rate tables; c. pH; d. total soluble salts; e. sodium; and f. recommendations. 3. The project applicant or his/her designee shall prepare documentation describing the following: a. soil type; b. identification of limiting soil characteristics; c. identification of planned soil management actions to remediate limiting soil characteristics; and d. Submit the soil analysis report and documentation verifying implementation of soil analysis report recommendations to the *City/County* pursuant to the requirements of Section 7.C Certificate of Completion. E. GRADING DESIGN PLAN REQUIREMENTS, if applicable 1. The Landscape Documentation Package shall include rough/precise grade elevations prepared for the project by a licensed civil engineer.	*If your agency has specific timing for these requirements in its existing planning regulations, they can be inserted here. If not, your agency could utilize the timing included in the County ordinance which requires submittal of this plan before a building permit can be issued.* *When in the land use approval process a City/County requires the Landscape Documentation Package will affect whether this part of the ordinance refers to rough or precise grading.*

Who should adopt this section?	Ordinance Section	Toolbox
§6 ☐ ◆	**Section 6. LANDSCAPE IRRIGATION AND MAINTENANCE.** This section applies to all landscape projects subject to this ordinance (Section 4). A. The "Riverside County Guide to California Friendly Landscaping" (Landscaping Guide) is hereby incorporated by reference to assist the applicant in implementing landscape maintenance to ensure water use efficiency. B. Two irrigation schedules shall be prepared, one for the initial establishment period of six months and one for the established landscape, which incorporate the specific water needs of the plants and turf throughout the calendar year. The irrigation schedule shall take into account the particular characteristics of the soil; shall be continuously available on site to those responsible for the landscape maintenance; and shall contain specifics as to optimum run time and frequency of watering, and irrigation hours per day. The schedule currently in effect shall be posted at the controller. C. A regular maintenance schedule and Certificate of Completion shall be submitted to the Planning Director, property owner, and water purveyor. A regular maintenance schedule shall include, but not be limited to, routine inspection, adjustments, 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 any obstruction to irrigation devices. Repair of all irrigation equipment shall be done with the originally installed components or equivalent. D. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance. E. Information shall be provided to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.	
§7 ☐ ◆	**Section 7. COMPLIANCE/PLAN SUBMITTAL PROCESS.** The Planning Director or designee shall have the duty and authority to administer and enforce this ordinance. A. As part of the land development process and prior to construction, the *City/County* shall: 1. Provide the project applicant with the ordinance and procedures for permits, plan checks, or design reviews; 2. Review the Landscape Documentation Package (Section 5) submitted by the project applicant; 3. Approve or reject the Landscape Documentation Package; and 4. Issue a permit or approve the plan check or design review for the project applicant. B. As part of the land development process and prior to construction, the project applicant shall: 1. Submit a Landscape Documentation Package to the *City/County* for review and approval by the Planning Director. The Planting Plan, Irrigation Plan, and Soils Management Plan shall be reviewed by an independent licensed landscape architect to ensure that all components of the Plans adhere to the requirements of this Ordinance. The licensed landscape architect shall sign the Plans verifying that the Plans comply with this Ordinance. Any Plans submitted without the signature of a licensed landscape architect shall not be accepted for review.	*A City/County should augment this part of the ordinance with information about when they will require the Landscape Documentation Package (e.g., prior to building permit).*

Who should adopt this section?	Ordinance Section	Toolbox
	C. Prior to issuance of a certificate of occupancy or final inspection for a project subject to this ordinance, a regular maintenance schedule and a Certificate of Completion shall be submitted to the Planning Director certifying that the landscaping has been completed in accordance with the approved Planting, Irrigation, Soil Management, and Grading Design plans for the project. The Certificate of Completion shall be signed by a licensed landscape architect and shall indicate: 1. Date 2. Project information a. Project name b. Project applicant name, telephone, mailing address c. Project address and location d. Property owner name and mailing address 3. Prior to backfilling, evidence that the party responsible for irrigation installation conducted a preliminary field inspection of the irrigation system (evidence of field inspection shall be attached). 4. The landscaping has been installed in conformance with the approved Planting and Irrigation Plans; 5. Irrigation audit report performed by a certified irrigation auditor after project installation (audit report shall be attached) 6. The smart irrigation controller has been set according to the irrigation schedule; 7. The irrigation system has been adjusted to maximize irrigation efficiency and eliminate overspray and runoff; and 8. A copy of the approved Landscape Documentation Package (Section 5), the irrigation schedule (Section 6.B), and the maintenance schedule (Section 6.C) has been given to the property owner and local water purveyor. 9. Verification that the maintenance schedule has been provided to the Planning Director D. At a minimum, all landscape irrigation audits shall comply with the "Irrigation Association Certified Landscape Irrigation Auditor Training Manual (2004 or most current) and shall be conducted by a certified landscape irrigation auditor. E. The Planning Director or his/her designee shall have the right to enter upon the project site at any time before, during and after installation of the landscaping, to conduct inspections for the purpose of enforcing this Ordinance.	
varies by sub-section	**<u>Section 8.</u> LANDSCAPE WATER USE EFFICIENCY ENFORCEMENT**	For water agencies "●" this will be section 6.
<u>§8A</u> ☐	*[Name of City/County]* will rely on water purveyors to enforce landscape water use efficiency requirements. *[Name of City/County]* shall coordinate with local water purveyors and identify programs that enhance and encourage landscape water use efficiency such as: 1. tiered water rate structure, or 2. allocation-based conservation water pricing structure, or 3. a rate structure at least as effective as the above options or 4. irrigation audits and/or irrigation surveys 5. penalties for water waste.	

Who should adopt this section?	Ordinance Section	Toolbox
§8A ● ◆	A. RESTRICTIONS. The following water conservation requirements are intended to avoid water waste, are effective at all times, and are permanent. 1. Limits on Watering Hours: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 9:00 a.m. and 5:00 p.m. on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. Overhead irrigation shall be limited to the hours of 8 pm to 9 am. 2. No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited. 3. No Washing Down Hard or Paved Surfaces: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom. 4. Obligation to Fix Leaks, Breaks or Malfunctions: Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven (7) days, is prohibited.	For water agencies "●" this will be section 6A. *If an agency has a water conservation or water shortage contingency ordinance in effect, insert into this section: "NAME Ordinance, #, adopted DATE, is hereby incorporated by reference."*
§8B ● ◆	B. LANDSCAPE METER REQUIREMENTS. 1. A separate dedicated meter is required for landscape areas greater than or equal to 2,500 square-feet 2. The efficient use of water should be considered in the design of any new landscape area. The MAWA will be calculated for customers that request a new account using the formula in section 5.B.12.m of this ordinance. 3. Prior to the issuance of a meter, the new customer shall calculate the EAWU for each landscape area using the formula provided in 5.B.12.n. The EAWU shall be submitted to the local water purveyor for review. For the new meter to be issued, the calculated water budget for the landscape area cannot exceed the MAWA calculated in part 9.B.2 of this ordinance. 4. New accounts that have to comply with equivalent or more stringent water use efficiency measures imposed by another jurisdiction, do not need to comply with the requirements of this section of the Ordinance, but do need to provide information about the landscape area to the local water purveyor.	For water agencies "●" this will be section 6B.

Who should adopt this section?	Ordinance Section	Toolbox
§8C ● ◆	C. ENFORCEMENT. *[Name of water purveyor]* is employing *[insert name of mechanism]* to ensure water is being used efficiently.	For water agencies "●" this will be section 6C. *The concept here is to provide an equivalent to the "irrigation water use analysis" suggested by the state model ordinance. The water purveyor should describe the mechanism utilized to encourage water conservation in landscapes. Preferred mechanisms are described below:* *1. tiered rate structure, or* *2. allocation-based conservation water pricing structure, or* *3. a rate structure at least as effective as the above options or* *4. for landscapes installed more than [number of years to be defined by purveyor] years, the water purveyor shall administer irrigation audits and/or irrigation surveys to insure the landscape area meets the applicable MAWA* *a. For landscapes installed before January 1, 2010, the applicable MAWA (in gallons)= (ETo)(0.62)(0.8)(LA)* *b. For landscapes installed after January 1, 2010, the applicable MAWA (in gallons)= (ETo)(0.62)[0.7 x LA+0.3 x SLA]* *where* *ET_o is reference evapotranspiration* *SLA is the amount of special landscape area in square feet* *LA is total landscape area (including the SLA) in square feet* *5. penalties, including fees for all existing and future customers that violate section 8.A of this ordinance.*
§9 □ ● ◆	**Section 9. DATE OF EFFECT** The provisions of this ordinance shall take effect thirty (30) days after its adoption.	For water agencies "●" this will be section 7.

P09-0309, EXHIBIT 5

Assembly Bill No. 1881

CHAPTER 559

An act to add Section 1353.8 to the Civil Code, to repeal and add Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code, to add Section 25401.9 to the Public Resources Code, and to add Article 4.5 (commencing with Section 535) to Chapter 8 of Division 1 of the Water Code, relating to water conservation.

[Approved by Governor September 28, 2006. Filed with Secretary of State September 28, 2006.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1881, Laird. Water conservation.

(1) Existing law, the Davis-Sterling Common Interest Development Act, defines and regulates common interest developments, which include community apartment projects, condominium projects, planned developments, and stock cooperatives.

This bill would provide that the architectural guidelines of a common interest development shall not prohibit or include conditions that have the effect of prohibiting the use of low water-using plants as a group.

(2) The Water Conservation in Landscaping Act requires the Department of Water Resources to appoint an advisory task force to work with the department to draft a model local water efficient landscape ordinance that local agencies may adopt, requires the task force to submit the ordinance to the department on or before May 1, 1991, and requires the task force to cease to exist on the date the department adopts the model ordinance or January 1, 1992, whichever occurs first. The act requires the department, not later than January 1, 1992, to adopt a model local water efficient landscape ordinance which each local agency may adopt. The act makes the model local water efficient landscape ordinance adopted by the department applicable within the jurisdiction of a local agency if that local agency, by January 1, 1993, has not adopted a water efficient landscape ordinance or has not adopted certain findings that the adoption of the ordinance is unnecessary.

This bill would specify that the provision making the model ordinance applicable to a local agency on and after January 1, 1993, does not apply to chartered cities. The bill would require the department, to the extent funds are appropriated, not later than January 1, 2009, by regulation, to update the model ordinance in accordance with specified requirements. The bill would require the department to prepare and submit to the Legislature a prescribed report before the adoption of the updated model ordinance. The bill would require a local agency, not later than January 1, 2010, to adopt the updated model ordinance or other water efficient

landscape ordinance that is at least as effective in conserving water as the updated model ordinance. The bill would make the updated model ordinance applicable within the jurisdiction of a local agency, including a chartered city, if, by January 1, 2010, the local agency has not adopted its own water efficient landscape ordinance or the updated model ordinance. The bill would require each local agency, not later than January 31, 2010, to notify the department as to whether the local agency is subject to the department's updated model ordinance and, if not, to submit to the department a copy of the water efficient landscape ordinance adopted by the local agency, among other documents. The bill would require the department, to the extent funds are appropriated, not later than January 31, 2011, to prepare and submit a report to the Legislature relating to the status of water efficient landscape ordinances adopted by local agencies.

By imposing requirements on local agencies in connection with the adoption of water efficient landscape ordinances, the bill would impose a state-mandated local program.

(3) Existing law requires the State Energy Resources Conservation and Development Commission (Energy Commission), after one or more public hearings, to take specified action to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy. Existing law requires the Energy Commission, by January 1, 2004, to amend specified regulations to require that residential clothes washers manufactured on or after January 1, 2007, be at least as water efficient as commercial clothes washers, and to take certain other related action.

This bill would require the Energy Commission, in consultation with the department, to adopt, to the extent funds are available, by regulation performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water. The bill would require the Energy Commission to adopt those requirements for landscape irrigation controllers and moisture sensors by January 1, 2010, and, on and after January 1, 2012, would prohibit the sale or installation of an irrigation controller or moisture sensor for landscape use unless the controller or sensor meets those adopted requirements. The bill would require the Energy Commission, on or before January 1, 2010, to prepare and submit to the Legislature a report that sets forth a proposed schedule for adopting performance standards and labeling requirements for emission devices and valves.

(4) Existing law generally requires an urban water supplier to install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

This bill would require a water purveyor as defined, to require as a condition of new retail water service on and after January 1, 2008, the installation of separate water meters to measure the volume of water used exclusively for landscape purposes. The bill would make this requirement applicable to specified service connections.

(5) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that, if the Commission on State Mandates determines that the bill contains costs mandated by the state, reimbursement for those costs shall be made pursuant to these statutory provisions.

The people of the State of California do enact as follows:

SECTION 1. Section 1353.8 is added to the Civil Code, to read:

1353.8. The architectural guidelines of a common interest development shall not prohibit or include conditions that have the effect of prohibiting the use of low water-using plants as a group.

SEC. 2. Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code is repealed.

SEC. 3. Article 10.8 (commencing with Section 65591) is added to Chapter 3 of Division 1 of Title 7 of the Government Code, to read:

Article 10.8. Water Conservation in Landscaping

65591. This article shall be known and may be cited as the Water Conservation in Landscaping Act.

65592. Unless the context requires otherwise, the following definitions govern the construction of this article:

(a) "Department" means the Department of Water Resources.

(b) "Local agency" means any city, county, or city and county, including a charter city or charter county.

(c) "Water efficient landscape ordinance" means an ordinance or resolution adopted by a local agency, or prepared by the department, to address the efficient use of water in landscaping.

65593. The Legislature finds and declares all of the following:

(a) The waters of the state are of limited supply and are subject to ever increasing demands.

(b) The continuation of California's economic prosperity is dependent on adequate supplies of water being available for future uses.

(c) It is the policy of the state to promote the conservation and efficient use of water and to prevent the waste of this valuable resource.

(d) 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.

(e) Landscape design, installation, maintenance, and management can and should be water efficient.

(f) 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 use or unreasonable method of use.

(g) (1) The Legislature, pursuant to Chapter 682 of the Statutes of 2004, requested the California Urban Water Conservation Council to convene a stakeholders work group to develop recommendations for improving the efficiency of water use in urban irrigated landscapes.

(2) The work group report includes a recommendation to update the model water efficient landscape ordinance adopted by the department pursuant to Chapter 1145 of the Statutes of 1990.

(3) It is the intent of the Legislature that the department promote the use of this updated model ordinance.

(h) Notwithstanding Article 13 (commencing with Section 65700), this article addresses a matter that is of statewide concern and is not a municipal affair as that term is used in Section 5 of Article XI of the California Constitution. Accordingly, it is the intent of the Legislature that this article, except as provided in Section 65594, apply to all cities and counties, including charter cities and charter counties.

65594. (a) Except as provided in Section 65595, if by January 1, 1993, a local agency did not adopt a water efficient landscape ordinance and did not adopt findings based on climatic, geological, or topographical conditions, or water availability that state that a water efficient landscape ordinance is unnecessary, the model water efficient landscape ordinance adopted by the department pursuant to Chapter 1145 of the Statutes of 1990 shall apply within the jurisdiction of the local agency as of that date, shall be enforced by the local agency, and shall have the same force and effect as if adopted by the local agency.

(b) Notwithstanding subdivision (b) of Section 65592, subdivision (a) does not apply to chartered cities.

(c) This section shall apply only until the department updates the model ordinance.

65595. (a) (1) To the extent funds are appropriated, not later than January 1, 2009, by regulation, the department shall update the model water efficient landscape ordinance adopted pursuant to Chapter 1145 of the Statutes of 1990, after holding one or more public hearings. The updated model ordinance shall be based on the recommendations set forth in the report prepared pursuant to Chapter 682 of the Statutes of 2004 and shall meet the requirements of Section 65596.

(2) Before the adoption of the updated model ordinance pursuant to paragraph (1), the department shall prepare and submit to the Legislature a report relating to both of the following:

(A) The extent to which local agencies have complied with the model water efficient landscape ordinance adopted pursuant to Chapter 1145 of the Statutes of 1990.

(B) The department’s recommendations regarding the landscape water budget component of the updated model ordinance described in subdivision (b) of Section 65596.

(b) Not later than January 31, 2009, the department shall distribute the updated model ordinance adopted pursuant to subdivision (a) to all local agencies and other interested parties.

(c) On or before January 1, 2010, a local agency shall adopt one of the following:

(1) A water efficient landscape ordinance that is, based on evidence in the record, at least as effective in conserving water as the updated model ordinance adopted by the department pursuant to subdivision (a).

(2) The updated model ordinance described in paragraph (1).

(d) If the local agency has not adopted, on or before January 1, 2010, a water efficient landscape ordinance pursuant to subdivision (c), the updated model ordinance adopted by the department pursuant to subdivision (a) shall apply within the jurisdiction of the local agency as of that date, shall be enforced by the local agency, and shall have the same force and effect as if adopted by the local agency.

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

65596. The updated model ordinance adopted pursuant to Section 65595 shall do all the following in order to reduce water use:

(a) Include provisions for water conservation and the appropriate use and groupings of plants that are well-adapted to particular sites and to particular climatic, soil, or topographic conditions. The model ordinance shall not prohibit or require specific plant species, but it may include conditions for the use of plant species or encourage water conserving plants. However, the model ordinance shall not include conditions that have the effect of prohibiting or requiring specific plant species.

(b) Include a landscape water budget component that establishes the maximum amount of water to be applied through the irrigation system, based on climate, landscape size, irrigation efficiency, and plant needs.

(c) Promote the benefits of consistent local ordinances in neighboring areas.

(d) Encourage the capture and retention of stormwater onsite to improve water use efficiency or water quality.

(e) Include provisions for the use of automatic irrigation systems and irrigation schedules based on climatic conditions, specific terrains and soil types, and other environmental conditions. The model ordinance shall include references to local, state, and federal laws and regulations regarding standards for water-conserving irrigation equipment. The model ordinance may include climate information for irrigation scheduling based on the California Irrigation Management Information System.

(f) Include provisions for onsite soil assessment and soil management plans that include grading and drainage to promote healthy plant growth and to prevent excessive erosion and runoff, and the use of mulches in shrub areas, garden beds, and landscaped areas where appropriate.

(g) Promote the use of recycled water consistent with Article 4 (commencing with Section 13520) of Chapter 7 of Division 7 of the Water Code.

(h) Seek to educate water users on the efficient use of water and the benefits of doing so.

(i) Address regional differences, including fire prevention needs.

(j) Exempt landscaping that is part of a registered historical site.

(k) Encourage the use of economic incentives to promote the efficient use of water.

(*l*) Include provisions for landscape maintenance practices that foster long-term landscape water conservation. Landscape maintenance practices may include, but are not limited to, performing routine irrigation system repair and adjustments, conducting water audits, and prescribing the amount of water applied per landscaped acre.

(m) Include provisions to minimize landscape irrigation overspray and runoff.

65597. Not later than January 31, 2010, each local agency shall notify the department as to whether the local agency is subject to the department's updated model ordinance adopted pursuant to Section 65595, and if not, shall submit to the department a copy of the water efficient landscape ordinance adopted by the local agency, and a copy of the local agency's findings and evidence in the record that its water efficient landscape ordinance is at least as effective in conserving water as the department's updated model ordinance. Not later than January 31, 2011, the department shall, to the extent funds are appropriated, prepare and submit a report to the Legislature summarizing the status of water efficient landscape ordinances adopted by local agencies.

65598. Any model ordinance adopted pursuant to this article shall exempt cemeteries from all provisions of the ordinance except those set forth in subdivisions (h), (k), and (*l*) of Section 65596. In adopting language specific to cemeteries, the department shall recognize the special landscape management needs of cemeteries.

65599. Any actions or proceedings to attach, review, set aside, void, or annul the act, decision, or findings of a local agency on the ground of noncompliance with this article shall be brought pursuant to Section 1085 of the Code of Civil Procedure.

SEC. 4. Section 25401.9 is added to the Public Resources Code, to read:

25401.9. (a) To the extent that funds are available, the commission, in consultation with the Department of Water Resources, shall adopt by regulation, after holding one or more public hearings, performance standards and labeling requirements for landscape irrigation equipment, including, but not limited to, irrigation controllers, moisture sensors, emission devices, and valves, for the purpose of reducing the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

(b) For the purposes of complying with subdivision (a), the commission shall do all of the following:

(1) Adopt performance standards and labeling requirements for landscape irrigation controllers and moisture sensors on or before January 1, 2010.

(2) Consider the Irrigation Association's Smart Water Application Technology Program testing protocols when adopting performance standards for landscape irrigation equipment, including, but not limited to, irrigation controllers, moisture sensors, emission devices, and valves.

(3) Prepare and submit a report to the Legislature, on or before January 1, 2010, that sets forth on a proposed schedule for adopting performance standards and labeling requirements for emission devices and valves.

(c) On and after January 1, 2012, an irrigation controller or moisture sensor for landscape irrigation uses may not be sold or installed in the state unless the controller or sensor meets the performance standards and labeling requirements established pursuant to this section.

SEC. 5. Article 4.5 (commencing with Section 535) is added to Chapter 8 of Division 1 of the Water Code, to read:

Article 4.5. Irrigated Landscape

535. (a) A water purveyor shall require as a condition of new retail water service on and after January 1, 2008, the installation of separate water meters to measure the volume of water used exclusively for landscape purposes.

(b) Subdivision (a) does not apply to either of the following:

(1) Single-family residential connections.

(2) Connections used to supply water for the commercial production of agricultural crops or livestock.

(c) Subdivision (a) applies only to a service connection for which both of the following apply:

(1) The connection serves property with more than 5,000 square feet of irrigated landscape.

(2) The connection is supplied by a water purveyor that serves 15 or more service connections.

(d) For the purposes of this section, "new retail water service" means the installation of a new water meter where water service has not been previously provided, and does not include applications for new water service submitted before January 1, 2007.

SEC. 6. If the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

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