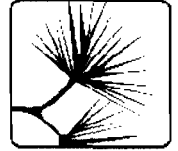




City of Del Mar Staff Report



TO: Honorable Mayor and City Council Members

FROM: Adam Birnbaum, Planning Manager *AB*
Joseph M. DeStefano II, Clean Water Manager *JMDS*
Via Karen P. Brust, City Manager *KPB*

DATE: September 20, 2010

SUBJECT: First Reading of an Ordinance adding Chapter 23.60 to the Del Mar Municipal Code relating to Water Efficient Landscapes in accordance with the requirements of Assembly Bill 1881 (Laird).

REQUESTED ACTION/RECOMMENDATION:

Staff recommends that the City Council: Conduct a public hearing; read and introduce an Ordinance adding Chapter 23.60 to the Del Mar Municipal Code in accordance with the requirements of Assembly Bill 1881, establishing local requirements for water efficient landscapes that are at least as effective as the State Model Ordinance but reflective of local conditions.

EXECUTIVE SUMMARY:

The Water Conservation in Landscape Act of 2006, also known as Assembly Bill (AB) 1881 (Laird), established the requirement that cities and counties must update local landscape ordinances so that they are "at least as effective" as the State Department of Water Resources' (DWR) Model Ordinance. In response, the City of Del Mar established an Ad-Hoc Water Conservation Citizen's Advisory Committee in April 2009, who met on a regular basis and provided staff and the Council with direction as to what they would like to see in the proposed ordinance revision. The proposed amendment to the Municipal Code creates a streamlined program for Water Efficient Landscapes in Del Mar that meets the requirements of AB 1881, while taking into account the wishes of the advice of the Council's Ad-Hoc Citizen's Advisory Committee. Further, the proposed ordinance establishes technical guidelines for use by applicants that may be modified by direction of the City Manager if necessary, without the need to revisit the regulatory language.

City Council Action:

DISCUSSION/ANALYSIS:

In 2006, Governor Schwarzenegger signed Assembly Bill 1881 (Laird) amending the Water Conservation in Landscaping Act (Act), which included a provision that cities and counties are to update local Landscape Ordinances by January 1, 2010 so that they are "at least as effective as" the Model Ordinance developed by the State Department of Water Resources. The law offered several options to local agencies: 1) Adopt the State Model Ordinance, making minor adjustments in language to meet local requirements but still meet the "as effective as" criteria; 2) write and adopt a new regional ordinance that is at least as effective as the State Model; or 3) take no action. If the City takes no action, the State's Model applies to all projects, and has the same force and effect as if adopted by the local agency. A copy of the State Model is included as Attachment "A".

Based on review of the State Model, and the regional models developed by the local water purveyors and other stakeholders, it was determined that a Del Mar-specific ordinance was appropriate. In November 2008, the City Council appointed an Ad-Hoc Water Conservation Citizen's Advisory Committee ("Committee") to review the City's Water Conservation Ordinances and work with staff in developing recommendations for Del Mar's Water Conservation Ordinance. The Committee, which met twice monthly, developed a number of recommendations which were presented to the City Council on April 19, 2010 (Agenda Item 2). The Committee's recommendations on appropriate applicability sections for Del Mar, including methods for exempting certain redevelopment projects from some of the more onerous reporting requirements based on existing requirements for the Design Review Board were incorporated by staff. The Committee made additional recommendations, including some which relate to existing water conservation requirements under Del Mar Municipal Code (DMMC) Chapter 21.60. These recommended changes were not addressed in the Draft Ordinance prepared by staff, and may be incorporated in future revisions to the DMMC.

Staff has prepared a draft ordinance for consideration by the City Council, as presented in Attachment "B". Much of the ordinance is based directly on the pertinent sections of State law, and meets the "as effective as" criteria, while still being Del Mar specific. The more technical requirements have been removed and placed in a more user-friendly format. These "Guidelines for Implementation" (included as Attachment "C") have been designed for use by applicants and their consultants to fulfill the requirements of AB1881. The streamlined format used mirrors a simplified format used by other regional agencies, and is more user friendly than the State or San Diego Regional Model. A more thorough background and analysis of the technical document is included in Attachment "D".

At present, the State Model is in force in the City of Del Mar, under implementing policy enacted by the Planning and Community Development Department in January 2010. Once adopted by the City, the ordinance will replace the State Model, and staff will notify the Department of Water Resources as required by law.

2

FISCAL IMPACT:

The adoption and implementation of a Water Efficient Landscapes Ordinance is mandated under State law, pursuant to the Water Conservation in Landscaping Act of 2006. The City may recover costs associated with the administration and review of required submittals through a modification of the City's Fee Ordinance, including the costs for the retention of a Landscape Architect for review of larger, more complex projects (if needed). However, there may be additional costs associated with long-term enforcement of these requirements that cannot be anticipated at this time. No additional funds are being requested, and no modifications to the City's adopted budget are being proposed.

ENVIRONMENTAL IMPACT:

The activity is not a "Project" as defined under Section 15378 of the California Environmental Quality Act (CEQA) Guidelines. Moreover, adoption of these proposed revisions to the DMMC constitute an action for the protection of the environment and, as such, the action is exempt from environmental review pursuant to Section 15308 of the State CEQA Guidelines.

INPUT/RECOMMENDATION FROM CITY BOARDS AND/OR CITIZENS' COMMITTEES:

Ad-Hoc Water Conservation Citizen's Advisory Committee: Recommendations presented to the City Council on April 19, 2010. Their recommendations included the use of a streamlined ordinance/guidance document similar to the format used in Orange County and modified applicability sections, as well as additional modifications to the Del Mar Municipal Code not addressed in the proposed ordinance. Attachment "E" presents the Approved Minutes from the April 19, 2010 City Council Meeting, while Attachment "F" presents a copy of the Committee's Report to Council.

ATTACHMENTS:

- Attachment "A" – State-adopted Model Water Efficient Landscape Ordinance
- Attachment "B" – Draft Ordinance 2010-XXX and Guidelines for Implementation
- Attachment "C" - "Water Efficient Landscapes: Guidelines for Implementing the City of Del Mar Water Efficient Landscape Ordinance"
- Attachment "D" – Model Water Efficient Landscape Ordinance Background and Analysis
- Attachment "E" – Approved Minutes from the April 19, 2010 City Council meeting
- Attachment "F" – Ad-Hoc Water Conservation Citizen's Advisory Committee presentation from April 19, 2010 City Council meeting

ATTACHMENT A

For City Council Report dated September 20, 2010

SEP 20 2010 **ITEM** 14

4

Model Water Efficient Landscape Ordinance

5

SEP 20 2010 ITEM 14¹

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 waters of the state are of limited supply and are subject to ever increasing demands;
- (2) that the continuation of California's economic prosperity is dependent on the availability of adequate supplies of water for future uses;
- (3) 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 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; and
- (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, maintaining and managing water efficient landscapes in new construction and rehabilitated projects;
- (3) establish provisions for water management practices and water waste prevention for 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: 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 Sections 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 terms used in this ordinance have the meaning set forth below:

- (a) “applied water” means the portion of water supplied by the irrigation system to the landscape.
- (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) “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) “conversion factor (0.62)” means the number that converts acre-inches per acre per year to gallons per square foot per year
- (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) “ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- (l) “effective precipitation” or “usable rainfall” (Eppt) means the portion of total precipitation which becomes available for plant growth.
- (m) “emitter” means a drip irrigation emission device that delivers water slowly from the system to the soil.
- (n) “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.
- (o) “establishment period of the plants” means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.

7

SEP 20 2010 ITEM 14

(p) "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 492.4.

(q) "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.

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

(s) "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.

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

(w) "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) "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 0.71. 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.

(dd) "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 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) “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) “main line” means the pressurized pipeline that delivers water from the water source to the valve or outlet.
- (mm) “Maximum Applied Water Allowance” (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 492.4. 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 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) “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) “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.
- (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) “operating pressure” means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
- (ss) “overhead sprinkler irrigation systems” means systems that deliver water through the air (e.g., spray heads and rotors).
- (tt) “overspray” means the irrigation water which is delivered beyond the target area.
- (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) “plant factor” or “plant water use factor” is a factor, when multiplied by ET_0 , estimates the amount of water needed by plants. 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) "rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.

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

(ccc) "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) "reference evapotranspiration" or "ET_o" means a standard measurement of environmental parameters which affect the water use of plants. ET_o is 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 Allowance so that regional differences in climate can be accommodated.

(eee) "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) "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.

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

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

(kkk) "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.

(lll) "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) "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.

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

(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 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.

§ 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 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 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.
- (c) Maximum Applied Water Allowance
- The Maximum Applied Water Allowance shall be calculated using the equation:

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

12

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 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, 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 Appendix A.

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

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)

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

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

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

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

(100 cubic feet = 748 gallons)

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

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

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

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

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

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

(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.

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

Where:

ETWU = Estimated Total Water Use per year (gallons)

ET_o = Reference Evapotranspiration (inches)

PF = Plant Factor from WUCOLS (see Section 491)

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

SLA = Special Landscape Area (square feet)

0.62 = Conversion Factor

IE = Irrigation Efficiency (minimum 0.71)

(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

14

Compare ETWU with MAWA. For this example:
MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 2,000)]
= 31.68 x [35,000 + 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.

§ 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;

15

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.
- (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).
- (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);

16

SEP 20 2010 ITEM 14

(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 Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

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

§ 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:

18

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 Appendix B Section A). This table can also assist with the irrigation audit and programming the controller.

(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 Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agricultural Code.)

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

§ 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.

19

SEP 20 2010 ITEM 14

§ 492.9 Certificate of Completion.

(a) The Certificate of Completion (see 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;

20

SEP 20 2010 ITEM 14

- (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.

21

SEP 20 2010 ITEM 14

§ 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.

§ 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.

(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.

22

§ 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.

§ 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: $MAWA = (0.8)(ET_o)(LA)(0.62)$.

(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) 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 65596, Government Code.

§ 494. Effective Precipitation.

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

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

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

23

Appendices.

Appendix A. Reference Evapotranspiration (ET_o) Table.

24

SEP 20 2010 ITEM 14

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													
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

25

SEP 20 2010 ITEM 14

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
KERN													
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

26

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
LOS ANGELES													
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

27

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
MONTEREY													
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

28

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
RIVERSIDE													
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
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
SAN DIEGO													
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

29

SEP 20 2010 ITEM 14

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
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 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 BARBARA													
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

30

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
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
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
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
STANISLAUS													
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

31

Appendix A - Reference Evapotranspiration (ETo) Table*													
County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
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
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; and													
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													

32

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:

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

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:

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

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:

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

where:

- ETWU = Estimated total water use per year (gallons per year)
- ET_o = 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.

35

SEP 20 2010 ITEM 14

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 _____

36

SEP 20 2010 ITEM 14

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.

37

ATTACHMENT B

For City Council Report dated September 20, 2010

38

ATTACHMENT C

For City Council Report dated September 20, 2010

39

SEP 20 2010 ITEM 14

ATTACHMENT D

For City Council Report dated September 20, 2010

40

SEP 20 2010 ITEM 14

ATTACHMENT E

For City Council Report dated September 20, 2010

SEP 20 2010 **ITEM 14**

A1

ATTACHMENT F

For City Council Report dated September 20, 2010

SEP 20 2010 **ITEM 14**

42

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF DEL MAR ADDING CHAPTER 23.60 TO THE MUNICIPAL CODE RELATING TO WATER EFFICIENT LANDSCAPING.

WHEREAS, the State of California has enacted the Water Conservation in Landscaping Act of 1992 ("Landscaping Act"); and

WHEREAS, Assembly Bill 1881 ("AB 1881"), enacted in 2006, amends said Landscaping Act to require the Department of Water Resources to update the State's model water efficient landscape ordinance in accordance with certain specified requirements; and

WHEREAS, the Department of Water Resources has updated the State's model efficient landscape ordinance to include provisions regarding the efficiency and analysis of landscape irrigation water use; and

WHEREAS, AB 1881 mandates local agencies to adopt the State's model ordinance or a water efficient landscape ordinance that is at least as effective in conserving water as the updated State model ordinance; and

WHEREAS, it is the purpose of this ordinance to amend the Del Mar Municipal Code to provide an equivalent mechanism to that provided in the State's model ordinance; and

WHEREAS, the purpose of the proposed code amendment is to change the standards related to water efficiency practices in landscaped areas and is at least as effective in conserving water as the State's updated model ordinance; and

WHEREAS, the City of Del Mar ("City") has the authority to adopt ordinances relating to the provision of potable water services and facilities, and regulations of those services and facilities; and

WHEREAS, the City has an established policy that all public and private users of water within the City shall use such water for reasonable purposes and in a reasonable and conscientious effort to conserve water; and

43

SEP 20 2010 ITEM 14

WHEREAS, all water services within the City are metered;
and

WHEREAS, the City, as the local water purveyor, is implementing enforcement of water waste prohibitions for all existing metered landscaped areas within its jurisdiction; and

WHEREAS, the proposed amendment ensures and maintains internal consistency with all of the objectives, policies, general land uses, programs, and actions of all elements of the Community Plan; and

WHEREAS, the proposed amendment would not be detrimental to the public convenience, health, safety, or general welfare of the City because the purpose of the proposed amendment is to protect the public convenience, health, safety, or general welfare of the City by providing regulations to aid in the conservation of an essential natural resource, ensuring a sustainable future for the citizens of Del Mar, and any proposed project would still be subject to an environmental review and project review in accordance with State and City of Del Mar regulations; and

WHEREAS, the proposed amendment is in compliance with the provisions of the California Environmental Quality Act ("CEQA") because adoption of the Code amendment is exempt from environmental review under CEQA Section 15307 (Actions by Regulatory Agencies for Protection of Natural Resources) because the activity assures the maintenance, restoration, enhancement, or protection of a natural resource by ensuring that water is conserved through more water-efficient landscaping practices; and CEQA Section 15378(b)(2) as the activity is not a project as it involves general policy and procedure making; specifically, it involves the setting of policy with regard to the landscaping requirements of future development and does not propose or approve any specific landscaping project.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF DEL MAR DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1: Chapter 23.60 is hereby added to the Del Mar Municipal Code to read as follows:

See Exhibit "A" to this Ordinance.

SECTION 2: This Ordinance was introduced on _____.

44

SEP 20 2010 ITEM 14

SECTION 3: These regulations shall take effect thirty (30) days from their adoption, and a summary shall be published in a newspaper of general circulation as provided by law.

PASSED, APPROVED AND ADOPTED at a regular meeting of the City Council held on the ____ day of _____ 2010.

RICHARD EARNEST, Mayor
City of Del Mar

APPROVED AS TO FORM:

Leslie E. Devaney, City Attorney
City of Del Mar

AS

ATTEST AND CERTIFICATION:

STATE OF CALIFORNIA
COUNTY OF SAN DIEGO
CITY OF DEL MAR

I, MERCEDES MARTIN, City Clerk of the City of Del Mar, California, DO HEREBY CERTIFY, that the foregoing is a true and correct copy of Ordinance No. ____, which has been published pursuant to law, and adopted by the City Council of the City of Del Mar, California, at a Regular Meeting held the ____ day of _____, 2010, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Mercedes Martin, City Clerk
City of Del Mar

SEP 20 2010 ITEM 14

46

CHAPTER 23.60

WATER EFFICIENT LANDSCAPES

23.60.010 Title

This Chapter shall be known as the "City of Del Mar Water Efficient Landscapes Ordinance."

23.60.020 Purpose

A. It is the established policy of the City of Del Mar that all public and private users of water within the City shall use such water for reasonable purposes and in a reasonable and conscientious effort to conserve water.

B. Consistent with this established City Policy, and with the legislative findings of the State and pursuant to Government Code Section 65596 et. seq., the purpose of this ordinance is to:

1. promote water conservation as a standard requirement of development within the City of Del Mar;

2. promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;

3. establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects;

4. establish provisions for water management practices and water waste prevention for existing landscapes;

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

47

SEP 20 2010 ITEM 14

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

7. encourage the use of regional economic incentives that promote the efficient use of water.

C. To the degree that the requirements imposed in this Chapter are more stringent than the requirements contained in the State Building Standards Code, the requirements of this Chapter shall prevail and shall be applicable within the City.

23.60.030 Definitions

Applied Water: means the portion of water supplied by the irrigation system to the landscape. For the purpose of this ordinance applied water refers to any permanent, or semi-permanent, delivery method utilized in landscapes.

Authorized Enforcement Staff: means any City employee assigned to duties involving permits and other City approvals, inspections, and enforcement related to this Ordinance.

Authorized Enforcement Official: means the City Manager or her/his designee.

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

Estimated Applied Water Use: means the average annual total amount of water estimated to be necessary to keep plants in a healthy state, calculated as provided in the City's guidelines for implementation. It is based on the reference evapotranspiration rate, the size of the landscape area, plant water use factors, and the relative irrigation efficiency of the irrigation system.

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.

ET adjustment factor (ETAF): is equal to the plant factor divided by the irrigation efficiency factor for a landscape

48

project, as described in the Guidelines. The ETAF is calculated in the context of local reference evapotranspiration, using site-specific plant factors and irrigation efficiency factors that influence the amount of water that needs to be applied to the specific landscaped area.

Guidelines: refers to the Water Efficient Landscapes: Guidelines for Implementation of the Water Efficient Landscape Ordinance, as adopted by the City, which describes procedures, calculations, and requirements for landscape projects subject to this Ordinance. The Guidelines shall be amended as necessary by the City Manager or designee pursuant to Section 21.60.040.B. of this Ordinance.

Hardscapes: means any durable material or feature (pervious and non-pervious) installed in or around a landscaped area, such as pavements, walls, or artificial turf or similar materials. Pools and other water features are considered part of the landscaped area and not considered hardscape for purposes of this Water Efficient Landscape Ordinance.

Hydrozone: means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

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 and implementation of an irrigation schedule.

Irrigation efficiency: means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this Water Efficient Landscape Ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

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).

Landscaped area: means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance and Estimated Applied Water Use calculations. The landscaped area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscape, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

Landscape Documentation Package: means the documents required to be provided to the City for review and approval of landscape design projects, as described in the Guidelines.

Landscape Project: means total area of landscape in a project, as provided in the definition of landscaped area, meeting the applicability requirements this Water Efficient Landscape Ordinance.

Low Impact Development (LID): A storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions. Any LID requirements must be consistent with the requirements and limitations of Section 11.30 of the Del Mar Municipal Code and the City's Jurisdictional Urban Runoff Management Program.

Maximum Applied Water Allowance (MAWA): means the upper limit of annual applied water for the established landscaped area as specified in Section 2.2 of the Guidelines. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscaped area. The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.

New construction: means, for the purposes of this Water Efficient Landscape Ordinance, a new building with a landscape or other new landscape such as a park, playground, or greenbelt without an associated building. "New Construction" includes substantial remodels of existing structures of more than 50% valuation.

Non-pervious: means any surface or natural material that does not allow for the passage of water through the material and into the underlying soil.

Overspray: means the irrigation water which is delivered beyond the target area.

Pervious: means any surface or material that allows the passage of water through the material and into the underlying soil.

Plant Factor or Plant Water Use Factor: is a factor, when multiplied by ETo, estimates the amount of water needed by plants. 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".

Reference evapotranspiration (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 the Guidelines, 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.

Rehabilitated landscape: means any re-landscaping project that meets the applicability criteria of this Ordinance, where the modified landscape area is greater than 2,500 square feet, and is 50% of the total landscape area.

Recycled water or reclaimed 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.

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. Runoff from landscaped areas is subject to requirements and limitations of Section 11.30 of the Del Mar Municipal Code.

Special landscape area: means an area of the landscape dedicated solely to edible plants such as orchards and vegetable gardens, areas irrigated with recycled water, water features using recycled water, and areas dedicated to active play such as

51

SEP 20 2010 ITEM 14

parks, sports fields, and where natural turf provides a playing surface.

Turf: means a ground cover surface of mowed grass, including but not limited to: annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, Tall fescue, Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, Buffalo grass, as well as hybrid and mixed varieties.

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 landscaped area. Constructed wetlands used for on-site wastewater treatment, habitat protection or storm water best management practices that are not irrigated and used solely for water treatment or storm water retention are not water features and, therefore, are not subject to the water budget calculation.

WUCOLS: means the Water Use Classification of Landscape Species published as "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California" by the University of California Cooperative Extension, the Department of Water Resources, and the Bureau of Reclamation, 2000. www.water.ca.gov/wateruseefficiency/docs/wucols00.pdf

23.60.040 General Provisions

A. Delegation of Authority. The City of Del Mar may designate another agency to implement some or all of the requirements contained in this ordinance.

B. Guidelines for Implementation. The City shall adopt guidelines for implementation of the Water Efficient Landscape Ordinance, which describe procedures, calculations, and requirements for landscape projects subject to this Ordinance. The Guidelines shall be amended from time to time by the City Manager or designee.

C. Severability and Validity. If any section of this Ordinance is declared invalid by a court of law, the remaining sections shall remain valid.

52

23.60.050 Applicability

A. This ordinance shall apply to all of the following landscape projects:

1. new landscape installation projects by individual homeowners on single-family or multi-family residential lots of two (2) units or less, and with a project landscaped area, including pools or other water features but excluding hardscape, equal to or greater than 5,000 square feet, and which require a building permit, plan check, or design review;

2. new landscape installations or landscape rehabilitation projects for multi-family residential projects of more than two (2) units, with a landscape area, including pools or other water features but excluding hardscape, equal to or greater than 2,500 square feet requiring a building permit, plan check, or design review permit;

3. new landscape installations or landscape rehabilitation projects by public agencies or private non-residential developers with a landscaped area, including pools or other water features but excluding hardscape, equal to or greater than 2,500 square feet, and which are otherwise subject to a building permit, plan check or design review permit; and

4. cemeteries. Recognizing the special landscape management needs of cemeteries, in the event that a new cemetery is proposed within the City limits, requirements shall be limited to the provisions for education, water use analysis, and landscape maintenance as outlined in this Ordinance and the Guidelines.

B. Existing landscapes limited to specific provisions for Existing Landscapes, including irrigation audits, water use

analyses, and water waste prevention requirements only, as outlined in the Guidelines and/or this Ordinance.

C. Landscape Rehabilitation Projects

1. To be subject to the requirements of this ordinance, the modified landscaped area in a Landscape Rehabilitation Project must be greater than 2,500 square feet and represents at least 50% of the total landscaped area.

2. The requirements of this ordinance may be partially or wholly waived, at the discretion of the City Manager or his/her designee, for landscape rehabilitation projects that are limited to replacement plantings with equal or lower water needs and where the irrigation system is found to be designed, operable and programmed consistent with minimizing water waste in accordance with local regulations.

D. 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.

23.60.060 Public Education and Outreach

A. 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.

B. The City of Del Mar shall provide information to the public regarding the design, installation, management, and maintenance of water efficient landscapes including, but not limited to the Guidelines, and work with other local agencies in promoting water saving practices.

23.60.070 Implementation Procedures

A. Prior to installation, a Landscape Documentation Package shall be submitted to the City for review and approval of all landscape projects subject to the provisions of this Water Efficient Landscape Ordinance. Any Landscape Documentation Package submitted to the City shall comply with the provisions of the Guidelines.

B. The Landscape Documentation Package shall include a certification by a professional appropriately licensed in the State of California stating that the landscape design and water use calculations have been prepared by or under the supervision of the licensed professional and are certified to be in compliance with the provisions of this Water Efficient Landscape Ordinance and the Guidelines.

1. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use. Water use calculations shall be consistent with calculations contained in the Guidelines, and shall establish the maximum amount of water to be applied through the irrigation system, based on climate, landscape size, irrigation efficiency, and plant needs.

2. All projects shall consider the use of plants that are well-adapted to their particular site and to particular climatic, soil, or topographic conditions. In particular, projects shall consider the use water conserving plants, especially native varieties.

3. Landscaping plans shall provide for designs which minimize runoff, and prevent excessive erosion, and include

55

the use of mulches in shrub areas, garden beds, and landscaped areas where appropriate and feasible.

4. All Landscape Documentation Packages submitted to the City shall 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.

C. Verification of compliance of the landscape installation with the approved plans shall be obtained through a Certification of Completion in conjunction with a Certificate of Use and Occupancy or other permit final process, as provided in the Guidelines.

23.60.080 Landscape Water Use Standards

A. Consistent with the requirements of the City's Stormwater Management and Discharge Control Ordinance and the City's Jurisdictional Urban Runoff Management Program, projects shall utilize low impact design (LID) methods where feasible, to capture and use stormwater onsite and improve water use efficiency.

B. Projects submitted shall include irrigation schedules based on climatic conditions, specific terrains and soil types, and other environmental conditions, and when feasible use automatic irrigation systems equipped with moisture sensors. All irrigation devices shall be required to meet local, state, and federal laws and regulations regarding standards for water-conserving irrigation equipment.

C. Water waste resulting from inefficient landscape irrigation existing as runoff 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 is prohibited, and

56

may be subject to enforcement pursuant to Del Mar Municipal Code Chapter 11.30 (Stormwater Management and Discharge Control).

D. Overspray may be allowed under the following circumstances:

1. all reasonable attempts to minimize overspray have been implemented; and
2. the landscape area is adjacent to permeable surfacing and no runoff occurs; or
3. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping.

E. Where available, and feasible, a recycled water system meeting all public health code standards shall be utilized for decorative water features and irrigation systems.

1. All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws; and
2. Landscapes using recycled water shall be considered "Special Landscape Areas" in any Landscape Documentation Package components.
3. An written exemption from this requirement may be granted by the City, or its designee. Such written exemption must state that recycled water meeting all public health codes and standards is not available and will not be available for the foreseeable future to the project site.

F. Landscape Documentation Packages for projects in Urban/Wildland Interface Areas shall address fire safety and prevention consistent with the requirements of Del Mar Municipal Code Section 10.04.175. All projects shall include defensible space or zones around a building or structure consistent with Public Resources Code Section 4291(a) and (b), and shall be required to avoid fire-prone plant materials and highly flammable mulches.

23.60.090 Penalties

A. Concealment, Misrepresentation and False Statements. Any falsification or misrepresentation made to the City concerning compliance with this Ordinance, including any misrepresentation in a voluntary disclosure, any submission of a report that omits required material facts without disclosing such omission, and any withholding of information required to be submitted by or pursuant to this Ordinance in order to delay City enforcement action, is a violation of this Ordinance. Concealing a violation of this Ordinance is a violation of this Ordinance.

B. Failure to Promptly Correct Non-compliance. Violations of this Ordinance must be corrected with the time period specified by an Authorized Enforcement Official or Authorized Enforcement Staff. Each day (or part thereof) in excess of that period during which action necessary to correct a violation is not initiated and diligently pursued is a separate violation of this Ordinance.

C. Administrative penalties may be imposed pursuant to Code of Regulatory Ordinances, Division 8, Title 1, Sections 18.101 et seq., hereby adopted by reference. Any later-enacted administrative penalty provision in the County Code shall also be applicable to this Ordinance, unless otherwise provided therein.

D. Penalties and Remedies Not Exclusive. Penalties and remedies under this Chapter may be cumulative and in addition to other administrative, civil or criminal remedies.

58

SEP 20 2010 ITEM 14

ATTACHMENT C

For City Council Report dated September 20, 2010

SEP 20 2010 ITEM 14

59



Water Efficient Landscapes

Guidelines for Implementing the
City of Del Mar Water Efficient Landscape Ordinance

City of Del Mar, CA • September 2010

These Guidelines provide procedural and design guidance for project applicants proposing landscape installation or rehabilitation projects that are subject to the requirements of the Water Efficient Landscape Ordinance. The general purpose of the Ordinance is to promote the design, installation, and maintenance of landscaping in a manner that conserves regional water resources by ensuring that landscaping projects are not unduly water-needy and that irrigation systems are appropriately implemented to minimize water waste.

COMPLETE DOCUMENT NOT PRINTED TO SAVE PAPER



SEP 20 2010 ITEM 14

60

ATTACHMENT D

For City Council Report dated September 20, 2010

SEP 20 2010 ITEM 14

61

Del Mar Model Water Efficient Landscape Ordinance Background and Analysis

Background

In 1992, the State of California enacted the Water Conservation in Landscaping Act, (AB 325) requiring the adoption of a water efficient landscape ordinances by cities and counties throughout the state. To assist local agencies, the California Department of Water Resources (DWR) developed a Model Water Efficient Landscape Ordinance that established water efficient landscape design standards for urban landscapes. This Model Ordinance served as a template for local agencies to utilize in the development of their own local water efficient landscape ordinance. Cities could adopt the DWR model ordinance outright, modify it to meet a city's local needs, or adopt an entirely different ordinance.

In 2004, the legislature passed Assembly Bill 2717 establishing a stakeholder-based Landscape Taskforce charged with formulating recommendations to improve irrigation efficiency in new and existing landscapes and to report their findings to the governor and legislature by December 31, 2005. The report, "Water Smart Landscapes for California: AB 2717 Landscape Task Force Findings, Recommendations, & Actions," contained 43 recommendations to achieve greater landscape water use efficiency.

In 2006, Governor Schwarzenegger signed Assembly Bill 1881 (Laird, Water Conservation) amending the Water Conservation in the Landscape Act (Act). The bill requires two new things: 1) DWR is to update the original Model Water Efficient Landscape Ordinance; and 2) cities and counties are to update local Landscape Ordinances by January 1, 2010 so that they are "at least as effective as" DWR's updated Model Ordinance.

In response to the new landscape water efficiency requirements, stakeholder groups were formed in several areas, including both San Diego County and Orange County. Each stakeholder group developed very different versions of the Model Ordinance tailored to the Southern California environment. Both stakeholder groups were developed with input from local cities, the Counties, local water agencies, Building Industries Association (BIA), fire

agencies, irrigation consultants, landscape architects, and other green industry professionals. The goal of the stakeholder groups were to develop a locally-crafted Model Water Efficient Landscape Ordinance that will meet the “at least as effective as” requirement of state law, minimize the complexity and cost of compliance, and provide consistency between local jurisdictions. Stakeholder meetings and technical writing sessions have taken place since June of 2009. These sessions produced tailored versions of the DWR Model Ordinance that meet the “at least as effective” criterion.

The release of the Final DWR Model Ordinance was substantially delayed due to a number of factors, including substantial input from local water purveyors, jurisdictions, and landscape professionals. DWR’s Final Model Ordinance was released on September 10, 2010, more than 9 months after the targeted date for release of the Model. However, the State did not adjust the timeline for implementation, but notified local agencies that as of January 1, 2010, the State Model Ordinance would need to be enforced, unless a locally adopted alternative was in place.

Analysis of New Requirements

In evaluating the requirements of the new State Model Ordinance, significant differences between the new requirements and current regulations were identified. The new requirements include the following:

1. Reduces the irrigated area compliance threshold from one acre to 2,500 square feet for developer-installed projects, public agency projects, and private development projects requiring a building or landscape permit, plan check, or design review
2. Now requires homeowner-provided or homeowner-hired projects exceeding 5,000 square feet of irrigated area to acquire a building or landscape permit, plan check, or design review
3. Collaboration between cities, counties, and water purveyors is now strongly encouraged in the development and implementation of water efficient landscape ordinances.

4. Local ordinances must now be “at least as effective as” the State Model and documented “on the record.”
5. Jurisdictions must now utilize evapotranspiration based “Maximum Applied Water Allowance” (MAWA) rates of 0.7 instead of 1.0. The use of the new MAWA rate represents a 30% reduction in water allocation for new landscapes.
6. Water purveyors are now required to offer landscape surveys and/or incentive programs targeting landscape irrigation efficiency for new and existing landscapes.
7. Local ordinances must now address smaller landscaping projects including single-family residential projects.
8. Local jurisdictions must now regulate existing landscapes for water waste.
9. A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in the State Model.

In reviewing the requirements of the State Model, it appears that some of the steps may be duplicative or redundant to requirements already in place in Del Mar, while other steps may be able to be repackaged to simplify the application process, depending on the scale of the proposed project. The comments received in the Ad Hoc Water Conservation Meetings have emphasized flexibility in the regulations to help avoid complexity, redundancy, and cost in the permitting process.

Options for Adoption

The AB 1881 legislation gives cities and the county two options to choose from for adopting the landscape design requirements, including adoption via an ordinance or via a resolution: “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. While most Southern California cities planned to rescind their existing ordinance and replace it with a new ordinance, others are considering a resolution. The approach taken

was left up to each City/County individually. As mentioned above, the State also allowed a third option of “no action” by which the State Model simply becomes the standard for development in the jurisdiction, and subject to enforcement locally.

Timeline:

Listed below are important dates, starting with the passage of Assembly Bill 1881 and concluding with the date that the Department of Water Resources is required to submit a report to the Legislature relating to the status of ordinances adopted by local agencies.

- | | |
|-------------------------|--|
| September 28, 2006: | State Passes AB 1881: the Water Conservation in Landscaping Bill. |
| January 1, 2009: | State Model Water Efficient Ordinance to be adopted (Note: This was actually adopted on September 10, 2009). |
| April 2009 – July 2010 | Del Mar Ad-Hoc Water Conservation Citizen’s Advisory Committee meets to address ordinance for Del Mar. |
| September 10, 2009 | Final State Model Ordinance Adopted. |
| September 24, 2009 | Orange County Model finalized. |
| November 20, 2009 | San Diego Regional Model finalized |
| October – December 2009 | Agencies to develop and adopt local ordinances. |
| January 1, 2010 | Local ordinances must be adopted. |

65

January 31, 2010 Local agencies must submit new Ordinance or Resolution to the State or the agency automatically adopts the State Model.

January 31, 2011 Department of Water Resources to submit a report to the legislature relating to the status of ordinances adopted by local agencies.

Development of the Del Mar Ordinance and Implementation

The Del Mar City Council, at its Regular Meeting of November 17, 2008, adopted Resolution No. 2008-84 establishing the Ad Hoc Water Conservation Citizens' Advisory Committee for the purpose providing guidance on the potential revisions to the City's Municipal Code to address water conservation issues, including development of a local Water Conservation Ordinance. The Committee met regularly for the purpose of providing guidance on potential revisions to DMMC Chapter 21.60 so as to incorporate State and regional requirements and also to carry out the policies of the Community Plan; and provided input to the City's Clean Water Manager on education programs needed to educate the community on water conservation requirements. The Committee presented a successful community workshop on conservation in July 2009, and presented their final report to the City Council on April 19, 2010.

During the course of their tenure, the Committee reviewed the State Model prepared by the State Department of Water Resources, the San Diego County Regional Model and abbreviated Orange County Model and Guidelines in consideration of adoption of the Del Mar Ordinance. Based on its review, and an analysis of existing standards in Del Mar, it was determined that the streamlined Orange County Model (with its separate Technical Guidelines) format was appropriate for the City of Del Mar. In addition, the Committee made recommendations for modifications to the DMMC Chapter 21.60 (Water Conservation), and Chapter 21.70 (Emergency Water Management). After review of its recommendations by staff

66

SEP 20 2010 ITEM 14

and discussions with the City Attorney's Office it was determined that the Del Mar Water Efficient Landscapes Ordinance should be a standalone chapter within the Municipal Code, and that subsequent revisions to the remaining Chapters be addressed at a later date.

Recognizing that the City's version of the Ordinance would not be completed by the January 1, 2010 deadline, the Planning and Community Development Department implemented a policy that the Department would include conditions of approval on development projects that met the applicability requirements of the State Model. These conditions require that the applicant or project developer:

"Prior to the issuance of Building Permits, the applicant shall provide the City with documentation that the landscaping for the project is designed to comply with the City of Del Mar's Water Efficient Landscape Ordinance, or if one has not been adopted by the City at that time, the State of California's Model Water Efficient Landscape Ordinance. Said information shall be submitted for review and approval of the Planning and Community Development Director."

In addition, the City's Clean Water Manager notified DWR in writing that Del Mar was in process of developing its own Ordinance, but until such time as the City was ready to implement its local ordinance, the City would implement the State Model.

Guiding Principles for Development

Based on input received during the process, the guiding principle for the development of the Del Mar Water Efficient Landscape Ordinance has been meeting the requirements of the State Model, while recognizing the unique circumstances in Del Mar. While there were several areas that drove the choice of the Orange County Model, the two primary principles were: (1) protection of local control, while attempting to mitigate the increased layers of governmental oversight; and (2) to ensure as much simplicity, efficiency, and flexibility as possible.

While the State Model meets the requirements of the law, it goes a step further by including detailed and prescriptive language identifying how local agencies will meet targets. However, the law only requires that local agencies adopt an ordinance that is “at least as effective” as the State Model in reaching targets. In addition, one size does not fit all. Many of the prescriptive measures in the State Model are not the most effective solutions for the diversity of ecological realities that exist between the various cities in the state, let alone the community that is Del Mar. In the spirit of local land use decision making, the Orange County Model allowed Del Mar the flexibility to adopt an ordinance relevant to its particular situation.

Using the actual text of the regulations, rather than the State’s Model as a starting point, allowed the City to frame an ordinance for Del Mar that meets the requirements of the law, without the extra requirements that fill the State Model. Then, utilizing the Orange County Model, which drew from the State’s Model and separates the “what” from the “how,” staff was able to create a simple, clear model ordinance and a separate guidelines document that can be easily updated, edited, or augmented as the City sees fit – all while meeting the “as effective as” scenario.

Based on input from the Committee and Council Liaisons, staff wanted to ensure as much simplicity, efficiency, and flexibility as possible in the Del Mar Ordinance. While the State Model is over 40 pages, the City’s Ordinance is only 12 pages long (with a 23-page guidelines companion document). This is substantially smaller than the San Diego Model (21 pages) plus guidelines, and only slightly longer than the Orange County Model (7 pages). It is designed to be more easily understood, and fit with the existing ordinances and requirements within the City. Moreover, the customizable guidelines document provides flexibility, and can be easily updated as technologies and laws change. The proposed Del Mar Ordinance also allows for self-certification, eliminating the need for additional layers of government and review, minimizes the cost of implementation, and yet allows staff to review in-house or out-source, if the self-certification option is not desired.

68

SEP 20 2010 ITEM 14

Proposed Approach

The State Model contained 33 pages of both policy issues and technical procedures. The approach taken by staff, as was also done by the Orange County Technical Committee, was to separate the policy issues and technical procedures into two documents; the Ordinance and Guidelines respectively. This resulted in a succinct ordinance supported by a longer guidelines document.

The cornerstone of the Ordinance and Guidelines is a self-certification process that will streamline the permitting process and reduce costs for applicants and local agencies. The self-certification includes two steps. The document must be prepared by a landscape professional that is licensed in the State of California. The landscape documentation must include a stamped certification that the landscape design and water use calculations have been prepared by or under the supervision of the licensed professional and are certified to be in compliance with the provisions of this Water Efficient Landscape Ordinance and the Guidelines. This Certification of Design must include their license number and/or professional stamp. The City will not issue approvals or permits unless the Landscape Documentation Package is complete, including this certification. Second, once construction of the landscape is complete, the installation contractor or designer will sign the Landscape Installation Certificate of Completion stating that the installation is complete and is in substantial conformance with the original plan. Once the Landscape Installation Certificate of Completion is accepted by the City, the permit will be completed.

The Landscape Documentation Package proposed will include the following elements to be submitted by the project applicant for permit issuance:

1) Project Information Summary	Already required for applications.
2) Water Efficient Landscape Worksheet	Already required.
3) Soil Management Plan	Elements 3, 4, and 5 may be combined into one Plan submittal.
4) Landscape Design Plan	
5) Irrigation Design Plan	

29

SEP 20 2010 ITEM 14

6) Grading Design Plan	Already required per the Grading Code.
7) Certification of Landscape Design	A component of the Self-Certification process

The Landscape Installation Certificate of Completion package will include:

1. Certification that the project was constructed per the approved plans;
2. Irrigation scheduling parameters used to set the controller;
3. Landscape and irrigation maintenance schedules;
4. An irrigation audit report or equivalent documentation.

In addition, the Del Mar Ordinance includes the option for exemption from some of the technical requirements for those redevelopment projects that can demonstrate, to the satisfaction of the City that the proposed re-development plan meets the water efficiency requirements intended by the State Model. This includes the potential of exempting projects from the additional requirements, in the event that a landscape meter is installed by the project applicant.

Issues and Justifications for the differences between the Proposed Ordinance and the State Model

In the process of drafting the Ordinance, staff sought ways of simplifying and streamlining the State Model while maintaining the requirement of being “at least as effective as” the State Model.

AB 1881 also required local agencies to include information in the record for any approval that designates the locally-approved alternative to the States Model as “equally effective” in conserving landscaping irrigation water. The appropriate action is suggested to utilize findings to establish the county’s position in the record. With one exception, no essential element of the States Model has been dropped, only re-organized to function more efficiently. The one exception is that the State’s Model requests a Grading Design Plan for

every application. The City's development regulations already provide appropriate and more stringent regulation for managing projects with significant grading elements.

The following section of the document identifies the significant differences between the City's Ordinance and the State Model, and provides justification for how the Ordinance is "at least as effective" as the State's Model.

Issue 1: Maximum Applied Water Allowance Calculation

Calculation is simplified while still achieving "at least as effective" criteria. The State Model requires MAWA and Estimated Applied Water Use (EAWU) calculations for each valve installed in a landscape area. This requirement causes a significant amount of paperwork and labor and does not increase water efficiency in the landscape. By requiring MAWA and EAWU calculations for each meter rather than each valve, the calculations process is simplified while maintaining the "at least as effective" criteria of AB-1881.

Issue 2: Self Certification

Self certification is performed by a licensed professional that is authorized to perform the tasks required in the Landscape Documentation Package. The licensed professionals certifying the project have professional expertise necessary to ensure the project is "at least as effective" as the State Model. Self certification provides a cost effective method for cities to review plans without increasing the need for in-house technical expertise.

Issue 3: Separation of Ordinance and Guidelines

Implementing a new ordinance or updating an old one is a long and cumbersome process. Throughout the drafting process, City officials stressed the importance of a streamlined and succinct ordinance that is "at least as effective" as the State Model. In response to these requests, staff has condensed the Ordinance into a document that describes the required components of AB 1881. All process-oriented elements, equations, and technology-related components have been removed from the ordinance and placed in a

71

SEP 20 2010 ITEM 14

guidelines section. Updating guidelines is a less complicated process, which will better accommodate the rapidly evolving field of irrigation technology.

Issue 5: The City as a Local Water Purveyor

The City, as the local water purveyor, is implementing enforcement of water waste prohibitions for all existing metered landscape areas within its jurisdiction. In recent years, regulatory approaches to conservation and water waste management have become powerful tools at the local, state, and national levels in establishing water conservation requirements for virtually every customer sector (Vickers, Water Use and Conservation 2001).

Many cities have multiple codes regulating water waste. These regulations range from local codes that govern irrigation overspray to federal codes such as the Environmental Protection Agency's National Pollution Discharge Elimination System. Existing regulatory water conservation requirements enforce efficient water use through monetary fines and have helped "to limit excessive lawn water and street runoff" (Vickers, Water Use and Conservation 2001).

Issue 6: Irrigation Scheduling

Prescriptive elements for parameters used to set the automatic controller are removed in order to defer to irrigation controller manufacturer specifications.

Issue 7: Recycled Water

Section incorporated by reference to defer to existing recycled water and health code. The City currently has infrastructure available for recycled water ONLY North of the San Dieguito River. At present, no plans exist to implement the costly infrastructure upgrades required to distribute recycled water within the City.

Issue 8: Removal of Stormwater Management

Section incorporated by reference to defer to existing National Pollutant Discharge Elimination System (NPDES) Municipal Permits and Del Mar's existing Stormwater Management and Discharge Control requirements (DMMC Chapter 11.30).

Issue 9: Removal of Water Waste Prevention

Section incorporated by reference to defer to existing City code on water waste prevention.

Issue 10: Removal of Effective Precipitation

This section was considered optional in the State Model and was removed because annual effective precipitation in Orange County is not considered adequate for MAWA adjustment.

ATTACHMENT E

For City Council Report dated September 20, 2010

74

SEP 20 2010 ITEM 14

MINUTES
Del Mar City Council Regular Meeting
Monday, April 19, 2010
Del Mar Communications Center
240 Tenth Street, Del Mar, California

CALL TO ORDER/ROLL CALL - 6:06 P.M.

Mayor Earnest, Deputy Mayor Mosier, Councilmembers Crawford and Hilliard. Councilmember Filanc was absent.

City Manager Brust, Assistant City Manager Delin, City Attorney Devaney, City Clerk and Information Systems Director Martin, Interim Planning and Community Development Director Mooney, Clean Water Manager DeStefano, Fire Chief Muir, and Fire Department Management Analyst Gallup.

PLEDGE OF ALLEGIANCE

Councilmember Crawford led the Pledge of Allegiance.

City Attorney Devaney announced that there was no reportable action from the Closed Sessions.

COMMUNITY ANNOUNCEMENTS/PRESENTATIONS

Mayor Earnest made community announcements.

Don Countryman announced that loan applications for the Community Support Fund were available for use with the Sunset and North Hills Utility Undergrounding District assessments at Del Mar Community Connections.

ITEM 1

PROCLAMATION RECOGNIZING THE DEL SOL LIONS CLUB. (Clerk's File No. 1201-5)

Mayor Earnest presented the proclamation to Del Sol Lions Club Vice-President Brian Sciutto.

75

SEP 20 2010 ITEM 14

COMMISSION AND COMMITTEE REPORTS

ITEM 2

PRESENTATION OF RECOMMENDATIONS BY THE AD HOC WATER CONSERVATION CITIZENS' ADVISORY COMMITTEE ON THE IMPLEMENTATION OF THE STATE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE BY THE CITY OF DEL MAR. (Clerk's File No. 401-5)

Brooke Eisenberg-Pike, Chair of the Ad Hoc Water Conservation Citizens' Advisory Committee, stated that the Committee was asking that the Council accept the Committee's recommendations, direct staff to develop the City's Water Efficient Landscape Ordinance and to make additional ordinance revisions as needed to incorporate the recommendations.

Rick Ehrenfeld, Ad Hoc Water Conservation Citizens' Advisory Committee, provided a Powerpoint presentation and the Advisory Committee's report. He stated that the committee reviewed the Municipal Code, as well as AB 1881, to see how Del Mar's Code could be updated to implement the changes needed. He presented suggestions for updates that are measurable and enforceable. He also talked about California's Model Water Efficient Landscape Ordinance.

IT WAS MOVED BY COUNCILMEMBER HILLIARD, SECONDED BY DEPUTY MAYOR MOSIER, TO ACCEPT THE COMMITTEE'S RECOMMENDATION AND TO DIRECT STAFF TO DEVELOP THE CITY'S WATER EFFICIENT LANDSCAPE ORDINANCE, TO THANK THE COMMITTEE AND TO DISBAND IT FROM FURTHER ACTION. MOTION PASSED 4-0, WITH COUNCILMEMBER FILANC ABSENT.

CITY MANAGER REPORTS

ITEM 3 - 6:31 P.M.

PRESENTATION ON SOLID WASTE AND RECYCLABLE COLLECTION AND AUTHORIZE STAFF TO NEGOTIATE A ONE-YEAR CONTRACT EXTENSION WITH COAST WASTE MANAGEMENT PAIRED WITH PILOT PROGRAMS TO IMPROVE DIVERSION IN THE RESIDENTIAL AND COMMERCIAL SECTORS. (Clerk's File No. 906-9)

Assistant City Manager Delin stated that the Council is being asked whether to temporarily extend the Solid Waste and Recycling Contract with Coast Waste Management for one year and conduct a residential pilot program over a six-month period to assess the feasibility of using a semi-automated solid waste and

76

SEP 20 2010 ITEM 14

recycling collection system and implement a single-stream collection of recyclables in the commercial sector.

Jacy Bolden, Solid Waste and Recycling Program Manager and principal of JBC Groups, LLC., talked about the fiscal impact and recommended discussion points with Coast Waste Management that included removing a contract requirement that Coast Waste Management must operate a buyback center within the city limits of Del Mar. She provided background information on the services provided to the City of Del Mar and its diversion rate. She explained the reasons to conduct a residential pilot project; explained about the basic types of residential collection and the benefits. She described potential challenges and concerns. She reviewed the staff recommendations.

Ken Ryan, Coast Waste Management, talked about the potential closure of the buyback center and the enhanced service that Coast Waste Management will continue to provide.

Mayor Earnest opened the item to public comment. There being none, he closed the item to public comment.

Mark Delin, read a comment into the record from Bruce Bekkar, Energy Issues Advisory Committee member, in support of the pilot program.

IT WAS MOVED BY COUNCILMEMBER HILLIARD, SECONDED BY COUNCILMEMBER CRAWFORD, TO AUTHORIZE STAFF TO NEGOTIATE A ONE-YEAR CONTRACT EXTENSION WITH COAST WASTE MANAGEMENT; CONDUCT A SIX MONTH PILOT PROGRAM TO IMPROVE DIVERSION IN THE RESIDENTIAL AND COMMERCIAL SECTORS; REMOVE CONTRACT REQUIREMENT THAT COAST WASTE MANAGEMENT OPERATE A RECYCLING BUYBACK CENTER IN THE CITY LIMITS; AND DIRECTED STAFF TO EXPLORE THE POSSIBILITY OF TAKING THE LEASE BACK ON THE RECYCLING CENTER. MOTION PASSED 4-0, WITH COUNCILMEMBER FILANC ABSENT.

Deputy Mayor Mosier suggested that Coast Waste Management take note of the Energy Issues Advisory Committee's suggestion to explore the option of using LNG or CNG powered trash vehicles when they become available.

ORAL COMMUNICATIONS ON POSTED AGENDA - None.

77

ORAL COMMUNICATIONS (Non-Action Item) - None.

CITY MANAGER REPORTS

ITEM 4

ADOPTION OF RESOLUTION 2010-XX AUTHORIZING THE CITY MANAGER TO ENTER INTO A MEMORANDUM OF UNDERSTANDING (MOU) FOR THE SAN DIEGO URBAN AREA REGIONAL COMPUTER AIDED DISPATCH INTEROPERABILITY PROJECT (RCIP). (Clerk's File No. 406-1)

Tom Gallup, Management Analyst, Encinitas Fire Department, provided a PowerPoint presentation and report. He explained the need for Regional Computer Aided Dispatch (CAD) Interoperability and the benefits to public safety agencies. He explained the project implementation of Phase 1 of the Fire Pilot Project and provided a summary of funding, ongoing costs to local agencies, projected maintenance and sustainment costs and the benefits of the project. He indicated that Thinkstream Inc. believes they can accomplish the scope that is provided within the RFP; however, he stated that this is a pilot project and they can withdraw from the MOU within 90 days without a penalty. He talked about the selection process and the review of vendors.

Fire Chief Muir reported on the review of the legal component, financial impact and operational impact of the Memorandum of Understanding.

Mayor Earnest opened the item to public comment. There being no one to speak, he closed the item to public comment.

IT WAS MOVED BY COUNCILMEMBER CRAWFORD, SECONDED BY DEPUTY MAYOR MOSIER, TO ADOPT RESOLUTION 2010-30, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF DEL MAR, CALIFORNIA, AUTHORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT WITH OTHER LOCAL PUBLIC SAFETY AGENCIES THROUGHOUT THE SAN DIEGO URBAN AREA TO PARTICIPATE IN THE REGIONAL COMPUTER AIDED DISPATCH INTEROPERABILITY PROJECT. MOTION PASSED 4-0, WITH COUNCILMEMBER FILANC ABSENT.

PUBLIC HEARING

ITEM 12 - 7:26 P.M.

AN ORDINANCE AMENDING DEL MAR MUNICIPAL CODE (DMMC) CHAPTER 11.30 RELATING TO STORMWATER MANAGEMENT AND DISCHARGE CONTROL TO

78

SEP 20 2010 ITEM 14

COMPLY WITH THE REQUIREMENTS OF THE SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD ORDER R9-2007-0001. (Clerk's File No. 401-4)

Clean Water Manager DeStefano presented the staff report. He indicated that on March 3, 2008, the City Council adopted Ordinance 802 which implemented the initial requirements of the San Diego Regional Water Quality Control Board Order R9-2007-0001. He further reported that the Order also provided for staged implementation of certain requirements including changes in classification of projects as Priority Development Projects, and inclusion of hydromodification requirements. In accordance with the requirements of the Section D.1.d.(1)(b) of the Order, as of January 24, 2010, all jurisdictions were required to consider any "pollutant generating project" that results in "a disturbance of one acre or more of land" as a Priority Development Project. This requirement was incorporated as an official policy change by the Planning and Community Development Department on January 23, 2010. He reported that the major change to the existing Ordinance being made at this time reflects the codification of this policy change.

In addition, the proposed Ordinance includes definitions that have been added to reflect new terminology from the Order not included in Ordinance 802, and corrects minor typographical errors. He recommended that Council conduct the public hearing, and introduce the Ordinance approving the proposed revisions in DMMC Chapter 11.30 (Stormwater Management & Discharge Control).

Mayor Earnest opened the item the public hearing. There being no one to speak, he closed the item to public comment.

IT WAS MOVED BY COUNCILMEMBER CRAWFORD, SECONDED BY MAYOR EARNEST TO INTRODUCE AN ORDINANCE AMENDING CHAPTER 11.30 OF THE DEL MAR MUNICIPAL CODE RELATING TO STORMWATER MANAGEMENT AND DISCHARGE CONTROL. MOTION PASSED 4-0, WITH COUNCILMEMBER FILANC ABSENT.

OLD BUSINESS

ITEM 13 - 7:30 P.M.

ORAL REPORT REGARDING COUNCILMEMBER CRAWFORD'S TESTIMONY BEFORE THE SENATE'S NATURAL RESOURCES AND WATER COMMITTEE ON SENATE BILL 1177 (KEHOE) - DEL MAR GREENWAY (CRAWFORD). (Clerk's File No. 401-7)

79

Councilmember Crawford reported on her testimony at the Senate Natural Resources and Water Committee. She reported the Bill (SB 1177) made it out of the committee and was double referred to the Senate Food and Agriculture Committee, at which she would also testify. She indicated that she provided background on Del Mar, and that Becky Bartling from the 22nd District Agricultural Association was also present and expressed the 22nd DAA's concerns regarding the Bill. She talked about the negotiations taking place between the 22nd DAA and Senator Kehoe and reemphasized that Del Mar has always been consistent with asking for the 100-foot setback. She provided renderings of existing conditions, what is being proposed and what it would look like considering the 100-foot setback.

Councilmembers discussed Del Mar's position and authorized Councilmember Crawford to be flexible if given the opportunity to address Del Mar's serious concerns about adding an artificial levy and its impact, and that Del Mar is interested in restoration of habitat to a more natural condition, but will defer to the Senator.

CONSENT CALENDAR - 7:42 P.M.

City Clerk Martin read the titles of Items 5 through 10 on the Consent Calendar.

IT WAS MOVED BY COUNCILMEMBER HILLIARD, SECONDED BY COUNCILMEMBER CRAWFORD, TO ADOPT THE RECOMMENDATIONS FOR ITEMS 5 THROUGH 10, ON THE CONSENT CALENDAR. MOTION PASSED 4-0, WITH COUNCILMEMBER FILANC ABSENT.

ITEM 5

APPROVAL OF MINUTES: MARCH 22, 2010, REGULAR MEETING; MARCH 22, 2010, SPECIAL MEETING; MARCH 30, 2010, SPECIAL MEETING; AND APRIL 5, 2010, REGULAR MEETING. (Clerk's Minutes Book)

Council approved the minutes.

ITEM 6

RATIFICATION OF LIST OF DEMANDS, DATED APRIL 19, 2010. (Clerk's File No. 201-3)

Council ratified the List of Demands in the amount of \$525,619.92.

80

ITEM 7

WAIVER OF READING OF ORDINANCES ON AGENDA. (Clerk's File No. 401-4)

Council waived the reading of ordinances on the agenda.

ITEM 8

RESOLUTION AUTHORIZING THE ESTABLISHMENT OF A PILOT PROGRAM AREA ALONG CAMINO DEL MAR BETWEEN 15TH AND 12TH STREET TO INCLUDE THE RECOGNITION OF VALET PARKING AS A PROGRAM TO MEET CURRENT PARKING STANDARDS, ALTERNATIVE DESIGN OPTIONS FOR PARKING SPACES AND EXPANSION OF THE ADMINISTRATIVE SIGN REVIEW (ASR) PROCESS. (Clerk's File No. 307-3)

Council adopted Resolution No. 2010-31, authorizing the Planning and Community Development Director to implement the Pilot Program between 15th and 12th Street which allows for special consideration of alternative parking and sign options.

ITEM 9

RESOLUTION TO APPROVE THE FIRST AMENDMENT TO THE 2007 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM SAN DIEGO REGIONAL STORMWATER COPERMITTEES MEMORANDUM OF UNDERSTANDING (MOU), DATED MARCH 18, 2010. (Clerk's File No. 406-1)

Council adopted Resolution No. 2010-32, authorizing the City Manager to sign the First Amendment to the 2007 NPDES Copermittee MOU, dated March 18, 2010.

ITEM 10

APPOINTMENT TO THE PARKS AND RECREATION COMMITTEE (MOSIER/HILLIARD). (Clerk's File No. 401-5)

Council appointed Pat JaCoby to a four-year term on the Parks and Recreation Committee, expiring in April 2014; directed the Clerk to continue to advertise for the one remaining vacancy; and directed the Clerk to prepare a Certificate of Appreciation for outgoing member Karen Lockwood.

COUNCIL PRIORITIES -REPORTS

ITEM 11F - 7:45 P.M.

SAN DIEGO ASSOCIATION OF GOVERNMENTS (CRAWFORD/HILLIARD), ORAL REPORT ON THE APRIL 9, 2010 SANDAG TRIBAL SUMMIT (CRAWFORD). (Clerk's File No. 1506-1)

81

SEP 20 2010 ITEM 14

Councilmember Crawford reported on the 2nd Regional Tribal Summit held on April 9, 2010. She indicated that it was a great opportunity for SANDAG to meet with representatives from many of the tribal governments in San Diego County. She reported on the recognition of a SANDAG staff member by the tribes for facilitation of communication and collaboration.

Councilmember Hilliard briefly reported on the April 16, 2010 Transportation Committee, which related to the lack of connectivity of the Blue line to the Coaster.

ITEM 11I - 7:49 P.M.

SAN DIEGUITO RIVER VALLEY REG. OPEN SPACE JPA (EARNEST/MOSIER)
APRIL 15, 2010 MEETING WITH SAN DIEGO MAYOR JERRY SANDERS AND
APRIL 16, 2010 JPA MEETING (EARNEST). (Clerk's File No. 1405-1)

Mayor Earnest reported on the April 15, 2010 meeting with Mayor Sanders. He noted that as the members correctly assumed, Mayor Sanders may not have been aware of how much area of the City of San Diego was in the San Dieguito Riverpark. Mayor Earnest indicated that historically, funding has come from the City of San Diego's Water Department. In discussion with their City Attorney, it was discovered that there was a trust fund, the Lake Hodges Golf Center Trust Fund and Mayor Sanders committed to looking into using those funds for the San Dieguito River Park JPA.

He reported that at the April 16, 2010 JPA meeting, the Board's discussion focused on their budget.

ADJOURNMENT - 7:57 P.M.

Mayor Earnest adjourned the meeting at 7:57 P.M.

MERCEDES MARTIN, City Clerk

ATTEST:

RICHARD EARNEST, Mayor

82 SEP 20 2010 ITEM 14

ATTACHMENT F

For City Council Report dated September 20, 2010

SEP 20 2010 **ITEM** 14

83

Ad hoc Water Conservation Sub Committee Report April 19, 2010

Subset of 21.60 some of which would become "required" at higher drought level declarations

Repair all water leaks promptly, escalating based on drought level. For example: level 1 drought 57 days, level 2 drought 72 hours, level 3 drought 24-48 hours, level 4 drought 24 hours.

Irrigate only between 4:00 p.m. and 9:00 a.m. except for drip or micro irrigation systems.

Retrofitting non-turf irrigation with low volume drip or micro irrigation systems mandatory at drought levels 3 or 4. Retrofitting turf area irrigation systems to water saving sprinkler heads mandatory at drought levels 3 and 4.

Adjust automatic irrigation systems based on the season and weather conditions. In level 3 or 4 drought level no automatic systems operating during rain storms.

X 84

SEP 20 2010 ITEM 14

APR 19 2010 ITEM 02

Control irrigation to avoid runoff to adjacent properties or public or private roadways.

Use a hand-held hose equipped with a positive shut-off nozzle or bucket to water landscaped areas, including trees and shrubs located on residential and commercial properties that are not irrigated by a landscape irrigation system.

Irrigate nursery and commercial grower's products **only between 4:00 p.m. and 9:00 a.m. except for drip or micro irrigation systems**. Watering is permitted at any time with a hand-held hose equipped with a positive shut-off nozzle, a bucket, or when a drip/micro-irrigation system/equipment is used. Irrigation of nursery propagation beds is permitted at any time. Watering of livestock is permitted at any time.

Use brooms to clean outdoor paved areas and do not water wash except to alleviate immediate safety or sanitation hazards.

Wash cars only using hand held hoses with positive shut off nozzles (no car washing at levels 3/4)

Only operate ornamental fountains that recirculate water. (non-operation of all fountains at levels 3 or 4)

Restaurants should serve water only upon request at drought levels 2, 3, and 4.

New construction and substantial remodels installing water displacing bags or bottles in tanks or replace toilets with low flush 1.6 gal/flush toilets.

New construction and substantial remodels installing low flow showerheads.

Offer guests in hotels, motels, and other commercial lodging establishments the option of not laundering towels and linens daily.

Use recycled or non-potable water for construction purposes when available.

85

California's Model Water Efficient Landscape Ordinance

Primarily aimed at new construction and commercial landscapers. You must do "the landscape water conservation packet" and complete the process if.....

You must complete this process for

all new and rehabilitated development projects requiring a building permit, plan check or design review, with a landscape area equal to or greater than 2,500 square feet, including common areas. This section includes industrial, commercial, civic, multi-family construction (more than 2 units) , and subdivisions with more than 2 residential units. (how do we include churches?) This section is not intended for single-family residential properties.

86

You must complete this process for

new residential (2 units/ lot or fewer) construction projects requiring a building permit, plan check or design review and whose landscape area is equal to or greater than 5,000 square feet , not covered by #1 above. For the purposes of this section, new construction is defined as including substantial remodels, that is, a building project exceeding 50% of valuation.

You must complete this process for

Cemeteries - recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are included.

* 87

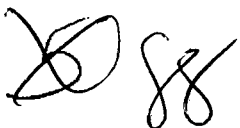
SEP 20 2010 ITEM 14 APR 19 2010 ITEM 02

Enforcement – for all projects in the categories mentioned above, a dedicated landscape water meter with a capped monthly capacity, will be installed.

The water use levels allowed under the MAWA application will be decreased at drought levels reach 3 or 4.

homeowner-installed landscaping for new homes (2 units per lot or fewer) with a landscape area **less than** 5,000 square feet. The homeowner will be subject to a streamlined permitting process with a single page application relating specifically to water use, in addition to the current DRB landscape plan.

The homeowner will be provided with educational materials to help in the design of their landscape. There will be no additional plan submittal or inspection requirements beyond those required under the Design Review process.



Will require landscapers to use "appropriate technology," often meaning drip irrigation.

Does not and may not prohibit use of certain plants, such as turf grass.

Does have a budget as to how much water may be applied to those plants and reduces the statewide ET factor from 0.8 to 0.7.

Existing landscapes and irrigation systems will not be forced to retrofit unless there is a renovation that requires a DRB permit as a new home or substantial remodel.

This ordinance does not apply to:

rehabilitated landscapes at single family homes with lot area less than 1 acre, not subject to building permit, or design review;

ecological restoration projects that do not require a permanent irrigation system;

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

Existing properties that may be affected !!! Any property over 1 acre that exceeds an estimate of MAWA based on lot square footage guidelines will be required to go through a process that will (at the discretion of the city council or appointed representative) include a landscape and water use audit and may be required to install a dedicated landscape meter with a capped monthly capacity of the MAWA.

89

SEP 20 2010 ITEM 14 APR 19 2010 ITEM 02

CERTIFICATION OF LANDSCAPE DESIGN

I hereby certify that:

(1) I am a professional appropriately licensed in the State of California to provide professional landscape design services.

(2) The *landscape design and water use calculations* for the property located at _____ (provide street address or parcel number(s)) were prepared by me or under my supervision.

(3) The *landscape design and water use calculations* for the identified property comply with the requirements of the City of _____ Water Efficient Landscape Ordinance (Municipal Code Sections _____) and the City of _____ Guidelines for Implementation of the City of _____ Water Efficient Landscape Ordinance.

(4) The information I have provided in this Certificate of Landscape Design is true and correct and is hereby submitted in compliance with the City of _____ Guidelines for Implementation of the City of _____ Water Efficient Landscape Ordinance.

Print Name

Date

Signature

License Number

Address

Telephone

E-mail Address

Landscape Design Professional's Stamp
(If applicable)

90

191

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant for each Point of Connection. Please complete all sections of the worksheet

Point of Connection # _____

Maximum Applied Water Allowance (MAWA)

$$\text{Total MAWA} = (\text{ETo} \times 0.7 \times \text{LA in Sq. Ft.} \times 0.62) + (\text{ETo} \times 1.0 \times \text{SLA in Sq. Ft.} \times 0.62) = \text{Gallons per year for LA+SLA}$$

where:

- MAWA = Maximum Applied Water Allowance (gallons per year)
- ETo = Reference Evapotranspiration Appendix C (inches per year)
- 0.7 = Evapotranspiration Adjustment Factor (ETAF)
- 1.0 = ETAF for Special Landscaped Area
- LA = Landscaped Area (square feet)
- 0.62 = Conversion factor (to gallons per square foot)
- SLA = Special Landscaped Area (square feet)

MAWA Calculation:

	ETo	ETA F	LA or SLA (ft ²)	Conversion	MAWA (Gallons Per Year)
MAWA for LA =	x	0.7	x	0.62	=
MAWA for SLA =	x	1.0	x	0.62	=
Total MAWA =					

92

SEP 20 2010 ITEM 14

APR 19 2010 ITEM 02

B-4

Estimated Applied Water Use

$EAWU = ETo \times K_L \times LA \times 0.62 \div IE = \text{Gallons per year}$																																																																																																	
<p>where:</p> <p>$EAWU = \text{Estimated Applied Water Use (gallons per year)}$ $ETo = \text{Reference Evapotranspiration Appendix C (inches per year)}$ $K_L = \text{Landscape Coefficient}$ $LA = \text{Landscaped Area (square feet)}$ $0.62 = \text{Conversion factor (to gallons per square foot)}$ $IE = \text{Irrigation Efficiency} = IME \times DU$ $IME = \text{Irrigation Management Efficiency (90\%)}$ $DU = \text{Distribution Uniformity of irrigation head}$</p>	<p>$K_L = K_s \times K_d \times K_{mic}$</p> <p>$K_s = \text{species factor (range = 0.1-0.9) (see WUCOLS list for values)}$ $K_d = \text{density factor (range = 0.5-1.3) (see WUCOLS for density value ranges)}$ $K_{mic} = \text{microclimate factor (range = 0.5-1.4) (see WUCOLS)}$</p> <p>WUCOLS – www.owue.water.ca.gov/docs/wucols00.pdf</p>																																																																																																
<p>EAWU Calculation:</p>																																																																																																	
<table border="1"> <thead> <tr> <th></th> <th>ETo</th> <th>LA</th> <th>Conversion</th> <th>IE</th> <th>EAWU (Gallons Per Year)</th> </tr> </thead> <tbody> <tr> <td>Special Landscaped Area</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>Cool Season Turf</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>Warm Season Turf</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>High Water Using Shrub</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>Medium Water Using Shrub</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>Low Water Using Shrub</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>Very Low Water Using Shrubs</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td></td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td></td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td></td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td></td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td></td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td>Other</td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td></td> <td>x</td> <td>x</td> <td>0.62</td> <td>÷</td> <td></td> </tr> <tr> <td colspan="5">Total EAWU =</td> <td></td> </tr> </tbody> </table>		ETo	LA	Conversion	IE	EAWU (Gallons Per Year)	Special Landscaped Area	x	x	0.62	÷		Cool Season Turf	x	x	0.62	÷		Warm Season Turf	x	x	0.62	÷		High Water Using Shrub	x	x	0.62	÷		Medium Water Using Shrub	x	x	0.62	÷		Low Water Using Shrub	x	x	0.62	÷		Very Low Water Using Shrubs	x	x	0.62	÷			x	x	0.62	÷			x	x	0.62	÷			x	x	0.62	÷			x	x	0.62	÷			x	x	0.62	÷		Other	x	x	0.62	÷			x	x	0.62	÷		Total EAWU =						
	ETo	LA	Conversion	IE	EAWU (Gallons Per Year)																																																																																												
Special Landscaped Area	x	x	0.62	÷																																																																																													
Cool Season Turf	x	x	0.62	÷																																																																																													
Warm Season Turf	x	x	0.62	÷																																																																																													
High Water Using Shrub	x	x	0.62	÷																																																																																													
Medium Water Using Shrub	x	x	0.62	÷																																																																																													
Low Water Using Shrub	x	x	0.62	÷																																																																																													
Very Low Water Using Shrubs	x	x	0.62	÷																																																																																													
	x	x	0.62	÷																																																																																													
	x	x	0.62	÷																																																																																													
	x	x	0.62	÷																																																																																													
	x	x	0.62	÷																																																																																													
	x	x	0.62	÷																																																																																													
Other	x	x	0.62	÷																																																																																													
	x	x	0.62	÷																																																																																													
Total EAWU =																																																																																																	

93

SEP 20 2010 ITEM 14

APR 19 2010 ITEM 02

B-5

List *sprinkler heads, microspray, and drip emitters* here along with average *precipitation rate* and *Distribution Uniformity of Irrigation Head*.

<u>Sprinkler Head Types</u>	<u>Average Precipitation Rate</u>	<u>Distribution Uniformity of Irrigation Head</u>
Drip		
Microspray		
Bubbler		
Low precipitation rotating nozzles		
Stream rotors		

C

Reference Evapotranspiration (ETo) Table

Appendix C - Reference Evapotranspiration (ETo) Table*

County and City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual ETo
Orange	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
Irvine	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
Laguna Beach	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
Santa Ana													

* 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

LANDSCAPE INSTALLATION CERTIFICATE OF COMPLETION

I hereby certify that:

- (1) I am a professional appropriately licensed in the State of California to provide professional landscape design services.
- (2) The landscape project for the property located at _____
(provide street address or parcel number(s)) was installed by me or under my supervision.
- (3) The landscaping for the identified property has been installed in substantial conformance with the approved Landscape Documentation Package and complies with the requirements of the City of _____ Water Efficient Landscape Ordinance (Municipal Code Sections _____) and the City of _____ Guidelines for Implementation of the City of _____ Water Efficient Landscape Ordinance for the efficient use of water in the landscape.
- (4) The information I have provided in this Landscape Installation Certificate of Completion is true and correct and is hereby submitted in compliance with the City of _____ Guidelines for Implementation of the City of _____ Water Efficient Landscape Ordinance.

Print Name

Date

Signature

License Number

Address

Telephone

E-mail Address

94