

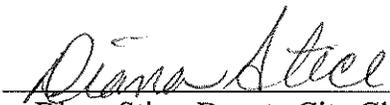
## CLERK'S CERTIFICATE

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I, Diana Stice, Deputy City Clerk of the City of Clovis, State of California, do hereby certify that the foregoing is a full, true and correct copy of Proposed Ordinance No. 10-04 duly approved and adopted by the City Council of the City of Clovis on the dates therein stated and as appears on file in my office.

IN WITNESS WHEREOF, I hereunto set my hand and affix the seal of the City of Clovis on April 6, 2010.



  
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Diana Stice, Deputy City Clerk

## ORDINANCE 10-04

### AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CLOVIS AMENDING CHAPTER 6.5 OF TITLE 6 CLOVIS MUNICIPAL CODE RELATING TO WATER EFFICIENT LANDSCAPE REQUIREMENTS

The City Council of the City of Clovis does ordain as follows:

**Section 1** Article 5. Water Efficient Landscape Requirements of Chapter 6.5 of Title 6 of the Clovis Municipal Code is hereby amended to read in its entirety as follows:

#### Article 5. Water Efficient Landscape Requirements

##### 6-5.501 Applicability.

(a) The requirements herein 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 constructed prior to the effective date of this chapter are limited to Sections 6-5.512 and 6-5.513.

(5) new and rehabilitated cemeteries are limited to Sections 6-5.503(b)(2), 6-5.506 and 6-5.507; and existing cemeteries are limited to Sections 6-5.512; and 6-5.513.

(b) This ordinance does not apply to:

(1) registered local, state or federal historic 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.

##### 6-5.502 Definitions.

The terms used in this article 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 6-5.04.

(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 the 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 the 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) "City" shall mean the City of Clovis Department of Planning and Development Services unless indicated otherwise.

(i) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

(j) "conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year

(k) "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.

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

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

(n) "emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.

(o) "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.

(p) "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.

(q) "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 6-5.503(b)(2)(ii)(ac).

(r) "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.

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

(t) "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.

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

(v) "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.

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

(x) "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).

(y) "invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources.

(z) "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.

(aa) "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.

(bb) "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.

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

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

(ee) "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).

(ff) "landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

(gg) "Landscape Documentation Package" means the documents required under Section 6-5.503.

(hh) "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 6-5.501.

(ii) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve. This pipeline is typically downstream of the zone control valve and is not pressurized when irrigation is not occurring.

(jj) "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.

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

(ll) "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 6-5.503(b)(2)(ii)(ab). 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.

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

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

(oo) "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.

(pp) "new construction" means a new building with a landscape or other new landscape.

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

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

(ss) "overspray" means the irrigation water which is delivered beyond the target area.

(tt) "permit" means an authorizing document issued by the City of Clovis for new construction or rehabilitated landscapes.

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

(vv) "plant factor" or "plant water use factor" is a factor, when multiplied by the reference evapotranspiration (ET<sub>o</sub>), estimates the amount of water needed by plants. For purposes of this chapter, the plant factor range for low water use plants is 0 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this chapter are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".

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

(xx) "project applicant" means the individual or entity submitting a Landscape Documentation Package required under Section 6-5.503, to request a permit, plan check, or design review from the City. A project applicant may be the property owner or his or her designee.

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

(zz) "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.

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

(bbb) "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.

(ccc) "reference evapotranspiration" or "ET<sub>o</sub>" means a standard measurement of environmental parameters which affect the water use of plants. ET<sub>o</sub> is expressed in inches per day, month, or year as represented in Section 6-5.503(b)(2)(ii)(aa), 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.

(ddd) "rehabilitated landscape" means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 6-5.501, and the modified landscape area is equal to or greater than 2,500 square feet, is 50% or more of the total landscape area, and the modifications are completed within one year.

(eee) "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.

(fff) "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.

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

(hhh) "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.

- (iii) "sprinkler head" means a device which delivers water through a nozzle.
- (jjj) "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.
- (kkk) "station" means an area served by one valve or by a set of valves that operate simultaneously.
- (lll) "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.
- (mmm) "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.
- (nnn) "valve" means a device used to control the flow of water in the irrigation system.
- (ooo) "water conserving plant species" means a plant species identified as having a low plant water use factor.
- (ppp) "water feature" means a design element where open water performs an aesthetic or recreational function only. 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. Groundwater recharge ponds which utilize untreated surface water or recycled water are not water features and, therefore, are not subject to the water budget calculation.
- (qqq) "watering window" means the time of day irrigation is allowed.
- (rrr) "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.

### **6-5.503 Landscape Documentation Package Submittal Requirements**

- (a) Prior to issuance of a building permit, encroachment permit, or beginning of construction, the project applicant shall submit a Landscape Documentation Package to the City for review and approval. The Landscape Documentation Package shall contain the information required by (b) and shall be incorporated into the improvement plan and/or landscape plan set required for permit approvals.
- (b) Elements of the Landscape Package. The Landscape Package shall include the following six (6) elements:
- (1) project information, which shall include the following;
    - (i) date;
    - (ii) project applicant;
    - (iii) project address;
    - (iv) total landscape area (square feet);
    - (v) project type (e.g. new, rehabilitated, public, private, cemetery, homeowner installed);
    - (vi) water supply type (e.g. potable recycled, private well, untreated surface water);

- (vii) checklist of all documents in Landscape Package;
  - (viii) project contacts to include contact information for the project applicant and property owner; and
  - (ix) 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;
- (i) hydrozone information table for the landscape project, and
  - (ii) water budget calculations
- (aa) For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the following ETo values:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
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

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.

(ab) The Maximum Applied Water Allowance shall be calculated using the equation:

MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)] where:  
 MAWA = Maximum Applied Water Allowance (gallons per year)  
 ETo = Reference Evapotranspiration (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)

(ac) The Estimated Total Water Use shall be calculated using the equation below. The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed MAWA.

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

Where:

ETWU = Estimated Total Water Use per year (gallons)

ET<sub>o</sub> = Reference Evapotranspiration (inches)  
PF = Plant Factor from WUCOLS (see Section 6-5.02)  
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)

(3) Soil Management Report. In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant or designee, as follows:

- (i) Submit soil samples to a laboratory for analysis and recommendations.
  - (aa) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
  - (ab) The soil analysis shall 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 for appropriate soil amendment.
- (ii) The soil analysis 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.
- (iii) Upon completion of construction and prior to issuance of an occupancy permit or project acceptance, the project applicant or designee shall submit documentation verifying implementation of soil analysis report recommendations within the landscaped area to the City with the Certificate of Completion.

(4) Landscape Design Plan. Landscape plans, including plant selection shall be designed consistent with City Landscape Design Standards and guidelines. A landscape design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

(i) Plant material. The Estimated Total Water Use for plants selected for the landscape area shall not exceed the Maximum Applied Water Allowance. The landscape plan shall identify landscape materials, trees, shrubs, groundcover, and turf. Plant symbols shall be clearly drawn and plants shall be labeled by botanical name, common name, container size, spacing and quantities for each group of plants specified. Planting areas dedicated permanently and solely to edible plants should be clearly delineated.

(ii) Plant selection. Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site and consideration of the following factors: protection and preservation of native species and natural vegetation; selection of water conserving plant and turf species; selection of plants based on disease and pest resistance; selection based on climate zone tolerance; selection based on the horticultural attributes of plants such as mature plant size and invasive roots to minimize damage to property or infrastructure; selection of trees based on tree shading requirements; the solar orientation for plant placement to

maximize summer shade and winter solar gain; and selection from City recommended plant lists.

(iii) Hydrozone information. Delineate and label each hydrozone by number, letter, or other method; identify each hydrozone as low, moderate, high water, or mixed water use; identify recreational areas; identify areas irrigated with recycled water; identify type and surface area of water features; Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation. 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 6-5.503(b)(5)(ii)(ad).

(iv) 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.

(v) 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.

(vi) Water features may be permitted, subject to design review, and the provisions of Section 6-5.514.

(vii) Mulch and Amendments. Identify type of mulch and application depth. 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. Stabilizing mulching products shall be used on slopes greater than 3:1. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement. Identify any soil amendments, type, and quantity on the plans. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.

(viii) Other design considerations. The landscape design plan shall also identify; hardscapes (pervious and non-pervious); property lines; utilities and utility easements; streets; buildings and structures; natural features to remain; location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater; and any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);

(ix) Verification. The landscape plan shall contain the following statement: "I have complied with the criteria of the Water Efficient Landscape Requirements Ordinance and applied them for the efficient use of water in the landscape design plan"; and shall 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.)

(5) Irrigation Design Plan. 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.

(i) System requirements.

(aa) Dedicated landscape water meters are required for all non-residential landscape areas to facilitate water management.

(ab) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.

(ac) 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.

(ad) 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.

(ae) 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.

(af) Backflow prevention devices shall be provided as required by the City Water Division to protect the water supply from contamination by the irrigation system.

(ag) 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.

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

(ai) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

(aj) The irrigation system must be designed and installed to meet the irrigation efficiency criteria as described in Section 6-5.503(b)(2) regarding the Maximum Applied Water Allowance.

(ak) The project applicant shall consult with the City Water Division about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.

(al) Low volume irrigation shall be used in mulched planting areas to maximize water infiltration into the root zone.

(am) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.

(an) Sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.

(ao) Swing joints or other riser-protection components shall be provided on all risers subject to damage that are adjacent to high traffic areas.

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

(aq) 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 systems.

(ar) 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 volume 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 6-5.503(b)(5)(i)(ag). Prevention of overspray and runoff must be confirmed during the irrigation audit.

(as) 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.

(ii) Hydrozone irrigation design parameters.

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

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

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

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

1. the 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.

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

(af) The areas irrigated by each valve shall be designated, and each valve shall be assigned a number corresponding to the hydrozones identified on the landscape plan. The valve numbers shall be listed in the Hydrozone Information Table on the plans..

(iii) The irrigation design plan, at a minimum, shall identify:

- (aa) location and size of separate water meters for landscape;
- (ab) 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;
- (ac) static water pressure at the point of connection to the public water supply;
- (ad) flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;

(ae) recycled water irrigation systems as specified in Section 6-5.509;

(iv) Verification. The irrigation plan shall contain the following statement: "I have complied with the criteria of the Water Efficient Landscape Requirements Ordinance

and applied them accordingly for the efficient use of water in the irrigation design plan"; and shall bear 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.)

(6) Grading Design Plan. 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 permits satisfies this requirement.

(i) The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including: height of graded slopes; drainage patterns; pad elevations; finish grade; proposed underground and in-ground drainage improvements; and stormwater retention improvements, if applicable.

(ii) The grading design plan shall contain the following statement: "I have complied with the criteria of the Water Efficient Landscape Requirements 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.

(c) Approval required. Upon approval of the Landscape Documentation Package by the City, 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 City Water Division.

#### **6-5.504 Landscape certificate of completion.**

(a) Prior to issuance of a certificate of occupancy or final project acceptance, project applicant shall submit a signed Certificate of Completion to the City for review. The Certificate of Completion shall include the following elements:

(1) project information sheet that contains: date; project name; project applicant name, telephone, and mailing address; project address and location; and 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. Where there have been significant changes made in the field during construction, "as-built" or record drawings shall be included with the certification;

(3) irrigation scheduling parameters used to set the controller (see Section 6-5.505);

(4) landscape and irrigation maintenance schedule (see Section 6-5.506);

(5) irrigation audit report (see Section 6-5.507); and

(6) soil analysis report, if not initially submitted with the Landscape Documentation Package, and documentation verifying implementation of soil report recommendations.

(b) The project applicant shall: ensure that copies of the approved Certificate of Completion are submitted to the City Water Division and property owner or his or her designee.

(c) The City shall receive and either approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the City shall provide information to the project applicant regarding reapplication, appeal, or other assistance.

#### **6-5.505 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. Operation of the irrigation system outside the normal watering window is allowed for auditing, system maintenance and during plant establishment period.

(3) The irrigation schedule shall factor in 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:

- (i) the plant establishment period;
- (ii) the established landscape; and
- (iii) temporarily irrigated areas.

(5) Each irrigation schedule shall consider for each station all of the following that apply:

- (i) irrigation interval (days between irrigation);
- (ii) irrigation run times (hours or minutes per irrigation event to avoid runoff);
- (iii) number of cycle starts required for each irrigation event to avoid runoff;
- (iv) amount of applied water scheduled to be applied on a monthly basis;
- (v) application rate setting;
- (vi) root depth setting;
- (vii) plant type setting;
- (viii) soil type;
- (ix) slope factor setting;
- (x) shade factor setting; and
- (xi) irrigation uniformity or efficiency setting.

#### **6-5.506 Landscape and irrigation maintenance.**

(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 any obstruction to emission devices.

(c) Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.

**6-5.507 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 6-5.501:

(1) the project applicant shall submit an irrigation audit report with the Certificate of Completion to the City that shall 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 City Public Utilities Department 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.

**6-5.508 Irrigation Efficiency.**

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.

**6-5.509 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 6-5.509(b).

(b) Irrigation systems and decorative water features shall use recycled water unless a written exemption has been granted by the City Water Division 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 City 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.

**6-5.510 Stormwater Management.**

Project applicants shall implement stormwater best management practices as required in chapter 6.7, Urban Storm Water Quality Management and Discharge Control.

**6-5.511 Public Education.**

(a) The City shall make available information regarding the design, installation, management, and maintenance of water efficient landscaping in single family residential homes.

(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 chapter.

(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.

#### **6-5.512 Provisions for Existing Landscapes**

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

(1) For all landscapes in 6-5.512(a) that have a water meter, the City Public Utilities Department 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 6-5.512 (a), that do not have a meter, the City Public Utilities Department 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 required landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

#### **6-5.513 Water Waste Prevention.**

Water wasting is prohibited and for purposes of this chapter shall be defined as runoff leaving a 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. Runoff and overspray is not considered water waste if the landscape area is adjacent to permeable surfacing and no runoff occurs from the property, or the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping. Penalties for water wasting shall be per Section 6-5.110.

#### **6-5.514 Water features.**

(a) Regulated water features for purposes of this section contain 500 gallons of water or more and in the case of swimming pools are more than eighteen inches (18") in depth.

(b) Recirculating water. All water features shall use recirculating water or the water shall be reused for landscape irrigation. If untreated surface water or recycled water is used and is used for artificial recharge of the groundwater aquifer, recirculating water is not required.

(c) Permits required. No water feature shall be constructed or installed within the City by any person without first securing a permit therefore from the Building Division of the Planning and Development Services Department in accordance with Title 8, Building Regulations.

(d) Management Plan. All persons applying for a permit to construct or install a water feature shall prior to permit issuance provide a management plan prepared by a registered engineer or other professional determined to be competent by the City for the

water feature. The management plan shall indicate how the water feature will be maintained and shall be reviewed and approved by the City Water Division prior to permit issuance.

(e) Seepage. All water features, unless filled with reclaimed or untreated surface water, shall not lose more than one inch (1") per year in water depth due to seepage. The applicant shall by calculations based on the type of material used for the water feature lining, determine the expected water loss due to seepage prior to permit approval.

**Section 2** This Ordinance shall go into effect and be in full force from and after thirty (30) days after its final passage and adoption.

APPROVED: March 1, 2010

  
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Mayor

  
\_\_\_\_\_  
City Clerk

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The foregoing Ordinance was introduced and read at a regular meeting of the City Council held on March 1, 2010, and was adopted at a regular meeting of said Council held on March 15, 2010 by the following vote, to wit:

- AYES: Councilmembers Ashbeck, Flores, Magsig, Whalen, Mayor Armstrong
- NOES: None
- ABSENT: None
- ABSTAIN: None

DATED: March 15, 2010.

  
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City Clerk



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