



CITY OF YORBA LINDA

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COMMUNITY DEVELOPMENT

February 1, 2010

Mr. Simon Eching
California Department of Water Resources
Water Use and Efficiency Branch
P.O. Box 942836
Sacramento, CA 94236-0001

SUBJECT: WATER EFFICIENT LANDSCAPE ORDINANCE

Dear Mr. Eching;

Enclosed are copies of the City of Yorba Linda's Water Efficient Landscape Ordinance and Implementing Guidelines. Ordinance No. 2009-938 adopted the Water Efficient Landscape requirements; Resolution No. 2009-4055 adopted the Implementing Guidelines. The required findings can be found in the body of the ordinance.

If you have any questions regarding this material, please feel free to contact me by phone at 714-961-7131, or by email at sharris@yorba-linda.org.

Respectfully submitted,

Steven K. Harris, AICP
Director of Community Development

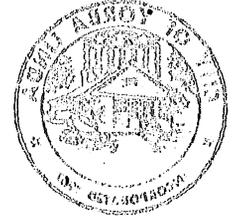
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ADULT AGENCY TO YOUNG

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ORDINANCE NO. 2009-938

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF YORBA LINDA
AMENDING TITLE 16, ENVIRONMENT, OF THE MUNICIPAL CODE BY
REPEALING EXISTING CHAPTER 16.12, DROUGHT RESPONSIVE
LANDSCAPING, AND ADDING NEW CHAPTER 16.12, WATER EFFICIENT
LANDSCAPE REGULATIONS**

WHEREAS, California Constitution Article X, Section 2 and California Water Code Section 100 provide that because of conditions prevailing in the state of California (the "State"), it is the declared policy of the State that the general welfare requires that the water resources of the State shall be put to beneficial use to the fullest extent of which they are capable, the waste or unreasonable use of water shall be prevented, and the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare; and

WHEREAS, pursuant to California Water Code section 106, it is the declared policy of the State that the use of water for domestic use is the highest use of water and that the next highest use is for irrigation; and

WHEREAS, California Assembly Bill 1881 ("AB 1881"), enacted into law on September 28, 2008, modifies and strengthens the existing "Water Conservation in Landscaping Act" (California Government Code section 65591 et seq.) (the "Act"). The Act's goal is to improve state water conservation efforts by establishing a model water efficient landscape ordinance for local agencies to adopt and use for the purpose of reducing water waste associated with irrigation of outdoor landscaping; and

WHEREAS, AB 1881 requires the State Department of Water Resources ("Department") to update the existing model water efficient landscape ordinance which provides guidelines for cities and counties to adopt local landscape irrigation ordinances as required by the law; and

WHEREAS, all cities and counties are required to either adopt the updated model water efficient landscape ordinance (the "Model Ordinance") or, by January 1, 2010, adopt their own water efficient landscape ordinance that is as effective in conserving water as the Model Ordinance; and

WHEREAS, a model water efficient landscape ordinance has been developed for the local agencies in Orange County (the "Orange County Model Ordinance") and the City has determined to adopt its own local water efficient landscape ordinance, based on the Orange County Model Ordinance, that is as effective in conserving water as the Model Ordinance; and

WHEREAS, this Ordinance is exempt from review under the California Environmental Quality Act ("CEQA") (California Public Resources Code Section 21000 et seq.). Pursuant to State CEQA Guidelines section 15307 (14 Cal. Code Regs., § 15307), this Ordinance is covered by the CEQA Categorical Exemption for actions taken to assure the maintenance, restoration, enhancement, or protection of a natural resource where the regulatory process involves procedures for protection of the environment. The adoption of this Ordinance will result in the enhancement and protection of water resources, and will not result in cumulative adverse environment impacts or any other potentially significant impact described in State CEQA Guidelines section 15300.2. It is therefore exempt from the provisions of CEQA.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF YORBA LINDA DOES HEREBY OREDAIN AS FOLLOWS:

SECTION 1. Findings.

The City Council hereby finds and determines that the forgoing recitals are true and correct and are incorporated herein.

SECTION 2. Repeal of Existing Chapter 16.12

The existing Chapter 16.12, Drought Responsive Landscaping, of the Yorba Linda Municipal Code is hereby repealed in its entirety.

SECTION 3: Addition of New Chapter 16.12

The new Chapter 16.12, Water Efficient Landscape Regulations, is hereby added to the Yorba Linda Municipal Code to read in its entirety as follows:

Chapter 16.12

WATER EFFICIENT LANDSCAPE REGULATIONS

Sections:

16.12.010	Purpose
16.12.020	Definitions
16.12.030	Applicability
16.12.040	Implementation Procedures
16.12.050	Landscape Water Use Standards
16.12.060	Enforcement and Delegation
16.12.070	Guidelines for the Implementation of the Water Efficient Landscape Regulations
16.12.080	Recovery of Costs
16.12.090	Conflicting Provisions

16.12.010 Purpose

A. The State Legislature has found that:

1. the waters of the State are of limited supply and are subject to ever increasing demands;
2. the continuation of California's economic prosperity is dependent on the availability of adequate supplies of water for future uses;
3. 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. landscapes are essential to the quality of life in California by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development;
5. landscape design, installation, maintenance, and management can and should be water efficient; and
6. Article X, Section 2 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 the waste or unreasonable method of use of water.

B. The City hereby finds that:

1. Orange County has an established, large *reclaimed water* infrastructure system;
2. allocation-based and tiered water rate structures allow public agencies to document water use in landscapes;

3. incentive-based water use efficiency programs have been actively implemented within Orange County since before 1991;

4. current local design practices in new landscapes typically achieve the State Model Water Efficient Landscape Ordinance water use goals;

5. all water services within the City are metered;

6. Orange County is a leader in researching and promoting the use of smart controllers with more than 4,500 installations as of June 2009;

7. all new irrigation controllers sold after 2012 within Orange County will be smart controllers;

8. landscape plan submittal and review has been a long standing practice in the City; and

9. the average rainfall in Orange County is approximately 12 inches per year.

C. The local water purveyors are implementing budget-based tiered-rate structures and/or enforcement of water waste prohibitions for all existing metered landscaped areas throughout their service areas, which includes the City of its entirety.

D. Consistent with these findings, the purpose of this Chapter 16.12 is to establish alternative water efficient landscape regulations that are acceptable under AB 1881 as being at least as effective in conserving water as the Model Ordinance in the context of conditions in the City in order to:

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

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, and maintaining and managing water efficient landscapes in new construction and rehabilitation 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 reduce water use to the lowest practical amount; and

6. encourage the use of economic incentives that promote the efficient use of water, such as implementing a budget-based tiered-rate structure.

16.12.020 Definitions

Except when the context of such words or phrases clearly indicates a different meaning or construction, the following words, terms, and phrases, when used in this Chapter 16.12 shall have the meanings ascribed to them in this section:

"Applied water" means the portion of water supplied by the irrigation system to the landscape.

"Association" means a nonprofit corporation or unincorporated association created for the purpose of managing a common interest development.

"Budget-based tiered-rate structure" means tiered or block rates for irrigation accounts charged by the retail water agency in which the block definition for each

customer is derived from lot size or irrigated area and the evapotranspiration requirements of landscaping.

"Certificate of Completion" means the certificate required to be completed and submitted to the City certifying that the landscape project has complied with the provisions of the water efficient landscape regulations contained in this Chapter 16.12 and the Guidelines.

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

"Enforcement officer" means any employee or agent of the City authorized to enforce the provisions of the Municipal Code as designated in writing by the City.

"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 *Guidelines*. It is based on the *reference evapotranspiration* rate, the size of the landscaped area, *plant water use factors*, and the relative *irrigation efficiency* of the irrigation system.

"ET adjustment factor" or "ETAF" means the factor that is equal to the *plant factor* divided by the irrigation efficiency factor for a landscape 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. A combined plant mix with a site-wide average plant factor of 0.5 (indicating a moderate water need) and average irrigation efficiency of 0.71 produces an ET adjustment factor of $(0.7) = (0.5/0.71)$, which is the standard of water use efficiency generally required by this Chapter 16.12 and the *Guidelines*, except that the ETAF for a special landscaped area shall not exceed 1.0.

"Guidelines" means the Guidelines for Implementation of the City of Yorba Linda Water Efficient Landscape Ordinance, which describe procedures, calculations, and requirements for landscape projects subject to this Chapter 16.12.

"Hardscapes" means any durable material or feature (pervious and impervious) installed in or around a landscaped area, such as pavements or walls. Pools and other water features are considered part of the landscaped area and not considered hardscapes for purposes of this Chapter 16.12.

"Homeowner installed landscape" means any landscaping either installed by a private individual for a single family residence or installed by a landscape professional hired by a homeowner. A homeowner, for purposes of this ordinance, is a person who occupies the dwelling he or she owns or rents. This definition excludes speculative homes, which are not owner-occupied dwellings and which are subject under this Chapter 16.12 to the requirements applicable to developer-installed single-family and multi-family residential landscape projects.

"Hydrozone" means a portion of the landscaped area having plants with similar water needs and typically irrigated by one

"Impervious" means any surface or natural material that does not allow for the passage of water through the material and into the underlying soil.

"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 Chapter 16.12 is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

"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 impervious hardscape, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

"Landscape Documentation Package" means the package of documents that a project applicant is required to submit to the City for review and approval of a landscape project pursuant to Section 16.12.040, and as described in the Guidelines.

"Landscape professional" means a licensed landscape architect, licensed landscape professional, or any other person authorized to design a landscape pursuant to Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the California Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the California Food and Agriculture Code.

"Landscape project" means total area of landscape in a project, as provided in the definition of "landscaped area," meeting the requirements under Section 16.12.030 of this Chapter 16.12.

"Local agency" means a city or county, including a charter city or charter county, that is authorized by the City to implement, administer, and/or enforce any of the provisions of this Chapter 16.12 on behalf of the City. The local agency may be responsible for the enforcement or delegation of enforcement of this Chapter 16.12 including, but not limited to, design review, plan check, issuance of permits, and inspection of a landscape project.

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

"Maximum Applied Water Allowance" or "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.

"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.

"Model ordinance" means the Model Water Efficient Landscape Ordinance adopted by the California Department of Water Resources in accordance with California Government Code section 65591 et seq.

"New construction" means, for the purposes of this Chapter 16.12, a new building with a landscaping or a landscape-dominated project, such as a park, playground, playing field, greenbelt or other new landscaping which may or may not have an associated building or structure.

"Permit" means an authorizing document issued by the City or any other local agency for new construction or rehabilitation projects within the City.

"Person" means any natural person, firm, joint venture, joint stock company, partnership, public or private association, club, company, corporation, business trust, organization, public or private agency, government agency or institution, school district, college, university, any other user of water provided by the city, or the manager, lessee, agent, servant, officer or employee of any of them or any other entity which is recognized by law as the subject of rights or duties.

"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" means a factor, when multiplied by ETo, that estimates the amount of water needed by plants. For purposes of this Chapter 16.12, 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 16.12 are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species."

"Project applicant" means the person submitting a Landscape Documentation Package pursuant to Section 16.12.040 of this Chapter 16.12 and Section 2.1 of the Guidelines, to request a permit, plan check or design review from the City for the installation of landscape.

"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.

"Reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is given expressed in inches per day, month, or year as represented in Appendix B of 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.

"Rehabilitation project" means a landscape project that results in the substantial removal and replacement of, and/or modifications to, existing landscaping and meets the requirements under Section 16.12.030(A)(3) and (5).

"Smart controller" means an automatic timing device used to remotely control valves that operate an irrigation system and which schedules irrigation events using either evapotranspiration (weather-based) or soil moisture data.

"Special landscaped area" means an area of landscape dedicated solely to edible plants such as orchards and vegetable gardens, an area irrigated with recycled water, water features using recycled water, and an area dedicated to active play such as parks, sports fields, golf courses, where turf provides a playing surface.

"State" means the state of California.

"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.

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

"Water feature" means a design element where water is artificially supplied and where open water performs an aesthetic or recreational function. Water features include artificial ponds, lakes, waterfalls, fountains, streams, spas, and swimming pools. 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.

"Watering window" means the time of day irrigation is allowed pursuant to any applicable city, regional, State, or local water purveyor water conservation or drought response laws, rules, policies, or regulations.

A. The water efficient landscape regulations set forth in this Chapter 16.12 shall apply to the following landscape projects:

1. new construction projects by public agencies or private developers of non-residential projects which have a proposed landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to:

- a. a discretionary approval of a landscape plan, or
- b. a ministerial permit for a landscape or water feature;

2. new construction projects by private developers, associations, or property managers of residential projects which have a proposed landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to:

- a. a discretionary approval of a landscape plan, or
- b. a ministerial permit for a landscape or water feature;

3. landscape rehabilitation projects by public agencies, private developers, associations, or property managers of residential or non-residential projects which:

- a. have a proposed landscaped area equal to or greater than 2,500 square feet,
- b. propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
- c. are otherwise subject to:
 - i. a discretionary approval of a landscape plan, or
 - ii. a ministerial permit for a landscape or water feature;

4. homeowner installed landscape for new construction of single-family or multiple-family residential property, which have a proposed landscaped area equal to or greater than 5,000 square feet, and are otherwise subject to:

- a. a discretionary approval of a landscape plan, or
- b. a ministerial permit for a landscape or water feature;

5. homeowner installed landscape rehabilitation projects for single-family or multiple-family residential property, which:

- a. have a proposed landscaped area equal to or greater than 5,000 square feet,
- b. propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
- c. are otherwise subject to:
 - i. a discretionary approval of a landscape plan, or
 - ii. a ministerial permit for a landscape or water feature.

B. Chapter 16.12 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;
4. plant collections, as part of botanical gardens and arboretums open to the public;
5. cemeteries; and
6. any other new landscape installation project and landscape rehabilitation project not listed in Section 16.12.030(A).

C. Notwithstanding the provisions of Section 16.12.030(B), Sections 2.8 and 2.9 of the Guidelines shall apply to cemeteries.

D. A landscape design plan for projects in fire-prone areas and fuel modification zones shall comply with requirements of the Orange County Fire Authority, where applicable. When conflicts between the provisions of Chapter 16.12 and fire safety design elements exist, the fire safety requirements shall have priority.

16.12.040 Implementation Procedures

A. Prior to the issuance of any permit, a Landscape Documentation Package shall be submitted to the City for review and approval of all landscape projects subject to the provisions of this Chapter 16.12. 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 landscape professional stating that the landscape design and water use calculations have been prepared by or under the supervision of the landscape professional and are certified to be in compliance with the provisions of this Chapter 16.12 and the Guidelines.

C. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use calculations as set forth in the Guidelines.

D. Water use calculations shall be consistent with the calculations contained in the Guidelines and shall be provided to the local water purveyor, as appropriate, under procedures determined by the City.

E. Verification of compliance of the landscape installation with the approved plans shall be obtained through a Certificate of Completion in conjunction with a Certificate of Use and Occupancy or Permit Final process, as provided in the Guidelines.

16.12.050 Landscape Water Use Standards

A. For landscape projects in new construction or rehabilitation projects subject to Section 16.12.030(A) of this Chapter 16.12, the Estimated Applied Water Use allowed for the landscaped area shall not exceed the MAWA calculated using an ET adjustment factor of 0.7, except for special landscaped areas where the MAWA is calculated using an ET adjustment factor of 1.0; or the design of the landscaped area shall otherwise be shown to be equivalently water-efficient in a manner acceptable to the City, as provided in the Guidelines.

B. Irrigation of all landscaped areas shall be conducted in a manner conforming to the rules, requirements, including established watering windows, and shall be subject to the penalties and incentives for water conservation and water waste prevention as determined and implemented by the local water purveyor or as mutually agreed by the local water purveyor and the City.

16.12.060 Enforcement and Administration.

A. The City Manager is authorized to administer and enforce the provisions of Chapter 16.12 and the Guidelines. Any City authorized personnel or enforcement officers may exercise any enforcement powers as set forth in the Municipal Code.

B. The City may delegate to, or enter into a contract with, a local agency or other person to implement and administer any of the provisions of this Section 16.12.060 on behalf of the City.

16.12.070 Guidelines for Implementation of the Water Efficient Landscape Regulations

The City Council shall adopt Guidelines for the implementation of Chapter 16.12. Such Guidelines may be adopted and amended from time to time by resolution of the City Council. Notwithstanding the forgoing, the City Manager or his or her authorized designee may establish any forms or other related documents to administer compliance with the Guidelines as he or she deems appropriate and in furtherance of this Chapter 16.12. Such forms and related documents may be revised, amended, or modified by the City Manager at any time without the prior approval of the City Council, provided such revisions, amendments, or modifications are not in conflict with the regulations and requirements of this Chapter 16.12 and do not make the water efficient landscape regulations set forth in this Chapter 16.12 less efficient than the Model Ordinance in conserving water.

16.12.080 Recovery of Costs.

A. The City Manager or his or her designee shall serve an invoice for costs upon the person or responsible person who is subject to a notice of violation, a cease and desist order, or an administrative compliance order. An invoice for costs shall be immediately due and payable to the City. If any person or responsible person fails to either pay the invoice for costs or appeal successfully the invoice for costs, then the City may institute collection proceedings. The invoice for costs may include reasonable attorneys' fees.

B. The City shall impose any other penalties or regulatory fees, as fixed from time to time by resolution of the City Council, for a violation or enforcement of Chapter 16.12.

C. In addition to the costs which may be recovered pursuant to the Municipal Code, and in order to recover the costs of the water efficient landscape regulatory program set forth in Chapter 16.12, the City Council may, from time to time, fix and impose by resolution fees and charges. The fees and charges may include, but are not limited to, fees and charges for:

1. any visits of an enforcement officer, or other city staff or authorized representative of the city for time incurred for inspections of property;
2. any monitoring, inspection, and surveillance procedures pertaining to enforcement of Chapter 16.12;
3. enforcing compliance with any term or provision of Chapter 16.12;
4. any other necessary and appropriate fees and charges to recover the cost of providing the city's water efficient landscape regulatory program.

16.12.090 Conflicting Provisions.

If provisions of Chapter 16.12 are in conflict with each other, other provisions of the Municipal Code, the City's general plan, any City adopted specific plan or master plan, any resolution or ordinance of the City, or any State law or regulation, the more restrictive provisions shall apply.

SECTION 4: Exemption from California Environmental Quality Act

The City Council hereby determines that this Ordinance is exempt from review under the California Environmental Quality Act ("CEQA") (California Public Resources Code Section 21000 et seq.). Pursuant to State CEQA Guidelines section 15307 (14 Cal. Code Regs., § 15307), this Ordinance is covered by the CEQA Categorical Exemption for actions taken to assure the maintenance, restoration, enhancement, or protection of a natural resource where the regulatory process involves procedures for protection of the environment. The adoption of this ordinance will result in the enhancement and protection of water resources, and will not result in cumulative adverse environment impacts or any other potentially significant impact described in State CEQA Guidelines section 15300.2. It is therefore exempt from the provisions of CEQA. The City Council hereby directs the City Manager or designee to prepare and file a Notice of Exemption within five business days following adoption of this Ordinance.

SECTION 5: Severability

The provisions of this Ordinance are severable, and the invalidity of any section, paragraph, phrase, clause, or part of this Ordinance shall not affect the validity or effectiveness of the remainder of this Ordinance.

SECTION 6. Conflicting Provisions

If provisions of this ordinance are in conflict with each other, other provisions of the Municipal Code, the city's general plan, any city adopted specific plan or master plan, any other resolution or ordinance of the City, or any State law or regulation, the more restrictive provisions shall apply.

SECTION 7: Effective Date

This Ordinance shall become effective thirty (30) days after its adoption in accordance with the provisions of California law.

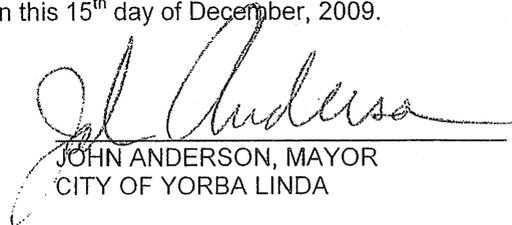
SECTION 8: City Clerk Certification

The City Clerk shall certify to the passage of this Ordinance and cause the same or a summary thereof to be published within fifteen (15) days after adoption in a newspaper of general circulation, printed and published in Yorba Linda, California.

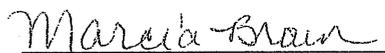
SECTION 9: Adoption

A full reading of this Ordinance is hereby waived. This Ordinance was introduced at a regular meeting of the City Council of the City of Yorba Linda, California, on December 1, 2009, and thereafter adopted at a regular meeting of the City Council held on the 15th day of December, 2009.

PASSED, APPROVED AND ADOPTED at a regular meeting of the City Council of the City of Yorba Linda on this 15th day of December, 2009.


JOHN ANDERSON, MAYOR
CITY OF YORBA LINDA

ATTEST:


MARCIA BROWN, CITY CLERK
CITY OF YORBA LINDA

APPROVED AS TO FORM:
BEST BEST & KRIEGER LLP


CITY ATTORNEY

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.

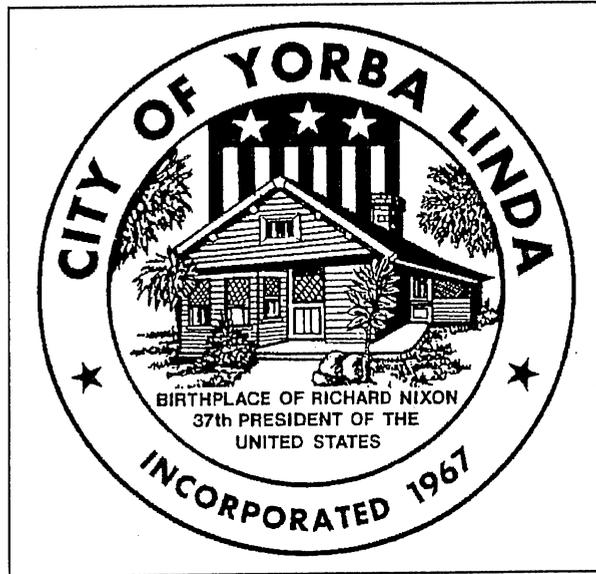
I, **MARCIA BROWN**, City Clerk for the City of Yorba Linda, California, **DO HEREBY CERTIFY** that the foregoing Ordinance was adopted at a regular meeting of the City Council of the City of Yorba Linda held on the 15th day of December, 2009, and carried by the following roll call vote:

AYES: COUNCILMEMBERS: **ANDERSON, HORTON, RIKEL, SCHWING, WINDER**
NOES: COUNCILMEMBERS: **NONE**
ABSENT: COUNCILMEMBERS: **NONE**


MARCIA BROWN, CITY CLERK
CITY OF YORBA LINDA



EXHIBIT "A"



GUIDELINES FOR IMPLEMENTATION OF THE CITY OF YORBA LINDA WATER EFFICIENT LANDSCAPE REGULATIONS

YORBA LINDA MUNICIPAL CODE
CHAPTER 16.12

CITY COUNCIL RESOLUTION NO. 2009-4055
ADOPTED DECEMBER 15, 2009
EFFECTIVE JANUARY 15, 2010

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1. Purpose and Applicability

1.1 Purpose

- (a) The primary purpose of these *Guidelines* is to 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 Regulations*. This document is also intended for use and reference by *City* staff and/or consultants in reviewing and approving designs and verifying compliance with the *Water Efficient Landscape Regulations*. The general purposes of the *Water Efficient Landscape Regulations* are to: (i) promote the design, installation, and maintenance of landscaping in a manner that conserves regional water resources by ensuring that landscape projects are not unduly water-needy and that irrigation systems are appropriately implemented to minimize water waste; (ii) establish alternative regulations that are at least as effective as the *Model Ordinance*.
- (b) Other regulations affecting landscape design, installation, and maintenance practices are potentially applicable and should be consulted for additional requirements. These regulations include but may not be limited to:
- (i) California Government Code section 65501 and following;
 - (ii) National Pollutant Discharge Elimination Permit for the *City's* Municipal Separate Storm Sewer System;
 - (iii) Orange County Fire Authority Regulations for Fuel Modification in the Landscape;
 - (iv) Water Conservation and Drought Response Regulations of the *local water purveyor*;
 - (v) Regulations of the *local water purveyor* governing use of *recycled water*;
 - (vi) *Zoning Code*;
 - (vii) *Building Code*;
 - (viii) *Grading Code*;
 - (ix) any *City* specific plans, master plans, general plan, or similar land use and planning documents;
 - (x) regulations of the *local water purveyor* governing the use of *recycled water*; and
 - (xi) any conditions of approval for a specific project.

1.2 Applicability

(a) The *Water Efficient Landscape Regulations* and these *Guidelines* shall apply to all of the following landscape projects:

(i) new construction projects by public agencies or private developers of non-residential projects which have a proposed landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to:

- (A) a discretionary approval of a landscape plan, or
- (B) a ministerial permit for a landscape or water feature;

(ii) new construction projects by private developers, associations, or property managers of residential projects which have a proposed landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to:

- (A) a discretionary approval of a landscape plan, or
- (B) a ministerial permit for a landscape or water feature;

(iii) landscape rehabilitation projects by public agencies, private developers, associations, or property managers of residential or non-residential projects which:

- (A) have a proposed landscaped area equal to or greater than 2,500 square feet,
- (B) propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
- (C) are otherwise subject to:
 - (1) a discretionary approval of a landscape plan, or
 - (2) a ministerial permit for a landscape or water feature;

(iv) homeowner installed landscape for new construction of single-family or multiple-family residential property, which have a proposed landscaped area equal to or greater than 5,000 square feet, and are otherwise subject to:

- (A) a discretionary approval of a landscape plan, or
- (B) a ministerial permit for a landscape or water feature;

(v) homeowner installed landscape rehabilitation projects for single-family or multiple-family residential property, which:

- (A) have a proposed landscaped area equal to or greater than 5,000 square feet,
 - (B) propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
 - (C) are otherwise subject to:
 - (1) a discretionary approval of a landscape plan, or
 - (2) a ministerial permit for a landscape or water feature.
- (b) Chapter 16.12 does not apply to:
- (i) registered local, State, or federal historical sites;
 - (ii) ecological restoration projects that do not require a permanent irrigation system;
 - (iii) mined-land reclamation projects that do not require a permanent irrigation system;
 - (iv) plant collections, as part of botanical gardens and arboretums open to the public;
 - (v) cemeteries; and
 - (vi) any other new landscape installation project and landscape rehabilitation project not listed in Section 16.12.030(A) of the *Code*.
- (c) Notwithstanding the provisions of Section 16.12.030(B) of the *Code*, Sections 2.8 and 2.9 of the Guidelines shall apply to cemeteries.
- (d) A landscape design plan for projects in fire-prone areas and fuel modification zones shall comply with requirements of the Orange County Fire Authority, where applicable. When conflicts between the provisions of Chapter 16.12 and fire safety design elements exist, the fire safety requirements shall have priority.

2. Submittal Requirements for New Landscape Installations or Landscape Rehabilitation Projects

- (a) Discretionary approval may be required for landscape projects that are subject to site plan reviews, i.e., conditional use permit, design reviews or subdivision maps, or where a variance from a local zoning regulation is requested, or other procedural processes apply such that standard or special conditions of approval may be required by the *City*. Discretionary projects with conditions of approval may be approved administratively by *City* staff, or acted on formally by the

Planning Commission, City Council, or other jurisdictional authority as stipulated by *City* regulations. A typical standard condition of approval reads:

“Landscaping for the project shall be designed to comply with the City’s Water Efficient Landscape Regulations (Chapter 16.12, YLMC) and with the Guidelines for Implementation of the Water Efficient Landscape Regulations.”

- (b) Landscape or water features that typically require a ministerial permit (i.e., a building, plumbing, electrical, or other similar permit), thereby triggering compliance with the *Water Efficient Landscape Regulations* requirements independently of the need for discretionary approval include, but are not limited to, swimming pools, fountains or ponds, retaining walls, gazebos, arbors/overhead trellises, patio covers, casitas, cabanas, pool houses, and other types of detached accessory structures.

2.1 Elements of the Landscape Documentation Package

- (a) A *Landscape Documentation Package* and *Water Efficient Landscape Worksheet* are required to be submitted by the *project applicant* for review and approval prior to the issuance of ministerial permits for landscape projects or water features by the *City*, and prior to start of construction.
- (b) Unless otherwise directed by the *City*, the *Landscape Documentation Package* shall include the following elements either on plan sheets or supplemental pages as directed by the *City*:
 - (i) *landscape project* information, including, but not limited to, the following:
 - (A) date,
 - (B) *landscape project* name (if applicable),
 - (C) *landscape project* address, parcel, tract, and/or lot number(s),
 - (D) total *landscaped area* (square feet) and rehabilitated *landscaped area* (if applicable),
 - (E) project type (e.g., *new construction, rehabilitation project, public, private, cemetery, homeowner installed, commercial, industrial, business, single-family, multi-family*),
 - (F) water supply type (e.g., *potable, recycled, or well*) and identification of the *local water purveyor* if the *project applicant* is not served by a private well,
 - (G) the *Landscape Documentation Package Checklist* in accordance with **Appendix G** hereof,

- (H) project contacts, including contact information for the *project applicant* and *property owner*,
- (J) a *Certification of Landscape Design* in accordance with **Appendix E** of these *Guidelines* that includes a *landscape professional's* professional stamp, as applicable, signature, contact information (including email and telephone number), license number, and date, certifying the statement that, "The design of this project complies with the requirements of the City's *Water Efficient Landscape Regulations*" and shall bear the signature of the *landscape professional* as required by law,
- (K) a *Water Efficient Landscape Worksheet* in accordance with **Appendix D** of these *Guidelines*, and
- (L) any other information the *City* or the *project applicant* deems relevant for determining whether the *landscape project* complies with the *Water Efficient Landscape Regulations* and these *Guidelines*;
- (ii) *Maximum Applied Water Allowance (MAWA)* and *Estimated Applied Water Use (EAWU)* calculations, expressed as annual totals, including, but not limited to, the following:
- (A) a *Water Efficient Landscape Worksheet* (optional at discretion of the *City*) for the *landscape project*,
- (B) *hydrozone* information table (optional at the discretion of the *City*) for the *landscape project*, and
- (C) water budget calculations (optional at the discretion of the *City*) for the *landscape project*;
- (iii) a soil management report or specifications, or specification provision requiring soil testing and amendment recommendations and implementation to be accomplished during construction of the *landscape project*;
- (iv) a landscape design plan for the *landscape project*;
- (v) an irrigation design plan for the *landscape project*; and
- (vi) a grading design plan, unless grading information is included in the landscape design plan for the landscape project or unless the landscape project is limited to replacement planting and/or irrigation to rehabilitate an existing landscaped area. The grading design plan shall conform to provisions of the *Grading Code* and any applicable provisions of the National Pollutant Discharge Elimination System Permit for the *City's* Municipal Separate Storm Sewer System and *Zoning Code*.

2.2 Water Efficient Landscape Calculations and Alternatives

- (a) The *project applicant* shall provide the calculated *Maximum Applied Water Allowance (MAWA)* and *Estimated Applied Water Use (EAWU)* for the *landscaped area* as part of the *Landscape Documentation Package* submitted to the *City*.
- (b) The *MAWA* and *EAWU* shall be calculated based on completing the *Water Efficient Landscape Worksheets* (in accordance with the sample worksheets in **Appendix C**).
- (c) The *EAWU* allowable for the *landscaped area* shall not exceed the *MAWA*. The *MAWA* shall be calculated using an *Evapotranspiration Adjustment Factor (ETAF)* of 0.7 except for the portion of the *MAWA* applicable to any *special landscaped areas* within the *landscape project*, which shall be calculated using an *ETAF* of 1.0. Where the design of the *landscaped area* can otherwise be shown to be equivalently water-efficient, the *project applicant* may submit alternative or abbreviated information supporting the demonstration that the annual *EAWU* is less than the *MAWA*, at the discretion of and for the review and approval of the *City*.
- (d) Water budget calculations shall adhere to the following requirements:
 - (i) The *MAWA* shall be calculated using the *Water Efficient Landscape Worksheets* and equation presented in **Appendix C** on page C-1. The example calculation on page C-1 is a hypothetical example to demonstrate proper use of the equation.
 - (ii) The *EAWU* shall be calculated using the *Water Efficient Landscape Worksheets* and equation presented in **Appendix C** on page C-2. The example calculation on page C-2 is a hypothetical example.
 - (iii) For the calculation of the *MAWA* and *EAWU*, a *project applicant* shall use the *ETo* values from the Reference Evapotranspiration (*ETo*) Table in **Appendix B**.
 - (iv) For calculation of the *EAWU*, the *plant water use factor* shall be determined as appropriate to the project location from the *Water Use Classification Efficiency of Landscape Species (WUCOLS)* species evaluation list. The *plant factor* is 0.1 for very low water use plants, 0.2 to 0.3 for low water use plants, 0.4 to 0.6 for moderate water use plants, and 0.7 to 1.0 for high water use plants.
 - (v) For calculating the *EAWU*, the *plant water use factor* shall be determined for each *valve hydrozone* based on the highest-water-use plant species within the zone. The *plant factor* for each *hydrozone* may be required to be further refined as a "landscape coefficient," according to protocols

defined in detail in the *WUCOLS* document, to reflect planting density and microclimate effects on water need at the option of the *project applicant* or the *City*.

- (vi) For calculation of the *EAWU*, the area of a water feature shall be defined as a high water use hydrozone with a *plant factor* of 1.0.
 - (vii) For calculation of the *EAWU*, a temporarily irrigated hydrozone area, such as an area of highly drought-tolerant native plants that are not intended to be irrigated after they are fully established, shall be defined as a very low water use hydrozone with a *plant factor* of 0.1.
 - (viii) For calculation of the *MAWA*, the *ETAF* for *special landscaped areas* shall be set at 1.0. For calculation of the *EAWU*, the *ETAF* for *special landscaped areas* shall be calculated as the *special landscaped area (SLA) plant factor* divided by the *SLA irrigation efficiency factor*.
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- (ix) *Irrigation efficiency* shall be calculated using the worksheet and equation presented in **Appendix C** on page C-2.
- (e) The *Maximum Applied Water Allowance* shall adhere to the following requirements:
 - (i) The Maximum Applied Water Allowance shall be calculated using the equation presented in **Appendix C**. The example calculation in **Appendix C** on page C-1 is a hypothetical to demonstrate proper use of the equation and does not represent an existing and/or planned landscape project. The *reference evapotranspiration (ET_o)* values used in this calculation are from the *Reference Evapotranspiration* Table in **Appendix C** and are for planning purposes only.
 - (ii) For actual irrigation scheduling, automatic irrigation controllers are required and shall use current *ET_o* data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.

2.3 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:
 - (i) Submit soil samples to a certified agronomic soils 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, but is not limited to:
 - (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.
- (ii) 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 *City* as part of the *Landscape Documentation Package*; or
 - (1) If significant mass grading is planned, the soil analysis report shall be submitted to the *City* as part of the *Certificate of Completion*.
 - (2) The soil analysis report shall be made available, in a timely manner, to the *landscape professional* preparing the landscape design plans and irrigation design plans in order to make any necessary adjustments to such design plans.
 - (3) The *project applicant*, or his/her designee, shall submit documentation verifying implementation of the soil analysis report recommendations to the *City* with the *Certificate of Completion*.

2.4 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. At the landscape design plan meeting with the *City*, the following design criteria shall be submitted as part of the *Landscape Documentation Package*. Plant material may be selected for the *landscaped area* provided the *EAUWU* in the *landscaped area* does not exceed the *MAWA*. To encourage the efficient use of water, the following is highly recommended:
 - (i) protect and preserve of non-invasive *water-conserving plant species* and *water-conserving turf*;

- (ii) select *water-conserving plant species* and *water-conserving turf*;
 - (iii) select plants based on disease and pest resistance;
 - (iv) select trees based on applicable *City* and local tree ordinances or tree shading guidelines; and
 - (v) select 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 2.5(b) of these *Guidelines*.
- (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 for inclusion in the landscape design plan:
- (i) use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
 - (ii) 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, and power lines); and
 - (iii) consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
- (d) *Turf* is discouraged on slopes greater than 25% where the toe of the slope is adjacent to an *impervious* 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 and fuel modification zones shall comply with requirements of the Orange County Fire Authority (OCFA), where applicable. When conflicts between water conservation and fire safety design elements exist, the fire safety requirements shall have priority.
- (f) The use of *invasive plant species* and/or *noxious plant species* is strongly discouraged.
- (g) The architectural guidelines of a *common interest development* shall not prohibit or otherwise include conditions that have the effect of prohibiting the use of *water efficient plant species* as a group.
- (i) *Water features* shall comply with the following:

- (A) Recirculating water systems shall be used for water features.
 - (B) Where available and consistent with public health guidelines, *recycled water* shall be used as a source for decorative *water features*.
 - (C) The surface area of a *water feature* shall be included in the high water use *hydrozone* area of the water budget calculation.
 - (D) approved safety pool and spa covers are highly recommended.
- (ii) *Mulch* and other soil amendments shall be required in the following circumstances and be applied in compliance with the following:
- (A) A minimum two inch (2") layer of *mulch* shall be applied on all exposed soil surfaces of planting areas; it shall not be applied 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 2.3 of these *Guidelines*).
- (h) The landscape design plan, at a minimum, shall:
- (i) delineate and label each *hydrozone* by number, letter, or other method;
 - (ii) identify each *hydrozone* as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the *landscaped area* shall be included in the low water use *hydrozone* for the water budget calculation;
 - (iii) identify recreational areas;
 - (iv) identify areas permanently and solely dedicated to edible plants;
 - (v) identify areas irrigated with *recycled water*;
 - (vi) identify type of *mulch* and application depth;
 - (vii) identify soil amendments, type, and quantity;
 - (viii) identify type and surface area of *water features*;

- (ix) identify *hardscapes* (*pervious* and *impervious*);
- (x) identify location and installation details of any applicable storm water best management practices that encourage on-site retention and infiltration of storm water. Storm water 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*.
- (xi) identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
- (xii) contain the following statement: "I have complied with the criteria of the *Water Efficient Landscape Regulations* and applied them for the efficient use of water in the landscape design plan;" and
- (xiii) bear the signature of a California-licensed *landscape professional*.

2.5 Irrigation Design Plan

- (a) For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturer's recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance.
- (b) An irrigation design plan meeting the following design criteria shall be submitted as part of the *Landscape Documentation Package*:
 - (i) Dedicated landscape water meters are highly recommended on *landscaped areas* smaller than 5,000 square feet to facilitate water management.
 - (ii) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
 - (iii) 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.
 - (A) 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.

(B) *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.

- (iv) *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.
- (v) 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.
- (vi) *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 *City Code* (i.e., public health) for additional backflow prevention requirements.
- (vii) High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- (viii) 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.
- (ix) Relevant information from the soil management plan, such as soil type and *infiltration rate*, shall be utilized when designing irrigation systems.
- (x) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
- (xi) Average irrigation efficiency for the project shall be determined in accordance with the EAWU calculation sheet in **Appendix C** on page C-2. Unless otherwise indicated by the irrigation equipment manufacturer's specifications or demonstrated by the *project applicant*, the *irrigation efficiency* of the irrigation heads used within each hydrozone shall be assumed to be:

Pop-up stream rotator heads = 75%

Stream rotor heads = 75%
Microspray = 75%
Bubbler = 80%
Drip emitter = 85%
Subsurface irrigation = 90%

- (xii) 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.
- (xiii) In *mulched* planting areas, the use of *low volume irrigation* is required to maximize water infiltration into the root zone.
- (xiv) *Sprinkler heads* and other emission devices shall have matched *precipitation rates*, unless otherwise directed by the manufacturer's recommendations.
- (xv) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible *distribution uniformity* using the manufacturer's recommendations.
- (xvi) *Swing joints* or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
- (xvii) *Check valves* or *anti-drain valves* are required for all irrigation systems.
- (xviii) Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or a *low volume irrigation* system.
- (xix) *Overhead* irrigation shall not be permitted within 24 inches of any *impervious* surface. Allowable irrigation within the setback from *impervious* 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:
 - (A) the *landscaped area* is adjacent to *pervious* surfacing and no *runoff* occurs; or
 - (B) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
 - (C) the irrigation designer for the landscape project specifies an alternative design or technology, as part of the *Landscape Documentation Package*, and clearly demonstrates strict adherence to the irrigation system

design criteria in Section 2.5 hereof. Prevention of overspray and runoff must be confirmed during an irrigation audit performed by the *City* or a *local water purveyor*.

(D) 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 of the *landscape project* 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*.

- (xx) All new irrigation controllers installed within the *City* after January 1, 2012, shall be *smart controllers*.
 - (xxi) In preparing an irrigation design plan, it is highly recommended that the *project applicant* 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.
 - (xxii) Each *valve* shall irrigate a *hydrozone* with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
 - (xxiii) *Sprinkler heads* and other emission devices shall be selected based on what is appropriate for the plant type within that *hydrozone*.
 - (xxiv) Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and *turf*.
 - (xxv) Individual *hydrozones* that mix plants of moderate and low water use or moderate and high water use may be allowed if:
 - (A) the *plant factor* calculation is based on the proportions of the respective plant water uses and their respective *plant factors*; or
 - (B) the *plant factor* of the higher water using plant is used for the calculations.
 - (xxvi) Individual *hydrozones* that mix high and low water use plants shall not be permitted.
 - (xxvii) 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, the areas irrigated by each *valve* shall be designated and assigned a number to each *valve*.
- (c) The irrigation design plan, at a minimum, shall contain:

- (i) the location and size of separate water meters for landscape;
- (ii) the 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*;
- (iii) *static water pressure* at the point of connection to the public water supply;
- (iv) *flow rate* (gallons per minute), application rate (inches per hour), and design *operating pressure* (pressure per square inch) for each *station*;
- (v) irrigation schedule parameters necessary to program smart timers specified in the landscape design;
- (vi) the following statement: "I have complied with the criteria of the *Water Efficient Landscape Regulations* and applied them accordingly for the efficient use of water in the irrigation design plan;" and
- (vii) the signature of a California-licensed *landscape professional*.

2.6 Grading Design Plan

- (a) For the efficient use of water, grading of a landscape project site shall be designed to minimize soil erosion, *runoff*, and water waste. The finished grading configuration of the *landscaped area*, including pads, slopes, drainage, post-construction erosion control, and storm water control Best Management Practices, as applicable, shall be shown on the landscape plan unless this information is fully included in separate grading plans for the project, or unless the *landscape project* is limited to replacement planting and/or irrigation to rehabilitate an existing *landscaped area*. In addition to the provisions contained herein, the grading design plan shall comply with any applicable provisions the provisions of the *Grading Code* and the *Zoning Code*.
- (b) The *project applicant* shall submit a landscape grading plan that indicates finished configurations and elevations of the *landscaped area* including, but not limited to:
 - (i) height of graded slopes;
 - (ii) drainage patterns;
 - (iii) pad elevations;
 - (iv) finish grade; and
 - (v) storm water retention improvements, if applicable.

- (c) To prevent excessive erosion and *runoff*, it is highly recommended that the *project applicant*:
 - (i) grade so that all irrigation and normal rainfall remains within property lines and does not drain on to *impervious hardscapes*;
 - (ii) avoid disruption of natural drainage patterns and undisturbed soil; and
 - (iii) avoid soil compaction in *landscaped areas*.
- (d) The grading design plan shall contain the following statement: “I have complied with the criteria of the Water Efficient Landscape Regulations and applied them accordingly for the efficient use of water in the grading design plan” and shall bear the signature of the *landscape professional*, as required by law.

2.7 Certificate of Completion

- (a) Landscape project installation shall not proceed until (i) the *project applicant* has deposited with the *City* all applicable permit fees in accordance with the *City's* applicable fee schedule; (ii) the *Landscape Documentation Package* has been approved by the *City*; and (iii) any permits required are issued.
- (b) The *project applicant* shall notify the *City* at the beginning of the installation work and at intervals, as necessary, for the duration of the *landscape project* work to schedule all required inspections.
- (c) The *Certificate of Completion* for the *landscape project* shall be obtained through a Certificate of Use and Occupancy or a Permit Final issued by the *City*. The requirements for the final inspection and permit closure include submittal of:
 - (i) The *project applicant* shall submit to the *City* a *Certificate of Completion* in the form included as **Appendix F** of these *Guidelines*, which shall include: (i) certification by a *landscape professional* that the *landscape project* has been installed per the approved *Landscape Documentation Package*; and (ii) the following statement: “The landscaping has been installed in substantial conformance to the design plans, and complies with the provisions of the *Water Efficient Landscape Regulations* for the efficient use of water in the landscape.”
 - (ii) The *project applicant* shall submit to the *City* documentation of the irrigation scheduling parameters used to set the *controller(s)*.
 - (iii) At the option of the *City*, the *project applicant* shall submit to the *City* one or more of the following: (i) an irrigation audit report from a *certified irrigation auditor*; (ii) documentation of enrollment in regional or *local water purveyor's* water conservation and/or drought response programs; and/or (iii) documentation that the MAWA and EAWU information for

the *landscape project* has been submitted to the *local water purveyor*, may be required at the option of the *City*.

2.8 Post-Installation Irrigation Scheduling

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:

- (a) Irrigation schedules shall be regulated by automatic irrigation controllers.
- (b) *Overhead* irrigation shall be scheduled and/or adjusted in compliance with any applicable *City, State, regional, or local water purveyor* water conservation and/or drought response laws, rules, policies, and regulations. Operation of the irrigation system outside the normal *watering window* is allowed for auditing and system maintenance.

2.9 Post-Installation Landscape and Irrigation Maintenance

Landscapes shall be maintained to ensure water use efficiency in accordance with the *Code* and any applicable *City, State, regional, or local water purveyor* water conservation and/or drought response laws, rules, policies, and regulations.

3. Provisions for Existing Landscapes

- (a) Irrigation of all *landscaped areas* shall be conducted in a manner conforming to the rules, regulations, and requirements and shall be subject to the penalties and incentives for water conservation and water waste prevention, as determined and implemented by the *local water purveyor* and/or as may be mutually agreed by the *City*.
- (b) The *City* and/or the regional or *local water purveyor* may administer programs such as irrigation water use analyses, irrigation surveys and/or irrigation audits, tiered water rate structures, water budgeting by parcel, or other approaches to achieve landscape water use efficiency community-wide to a level equivalent to or less than would be achieved by applying a *MAWA* calculated with an ETAF of 0.8 to all *landscaped areas* in the *City* over one acre in size. The *City* may, pursuant to a contract or other agreement, elect to have a *local water purveyor, contractor, or other local agency* administer such programs.
- (c) The architectural guidelines of a *common interest development* shall not prohibit or otherwise include conditions that have the effect of prohibiting the use of low-water use plants as a group.

4. Conflicting Provisions.

The provisions of these *Guidelines* are in addition to any other requirements, laws, rules, policies, or regulations imposed or adopted by the *City*. If the provisions of these

Guidelines are in conflict with each other, other provisions of the *Code*, the *City's* general plan, any *City* adopted specific plan or master plan, any resolution or ordinance of the *City*, or any *State* law or regulation, any applicable *City*, *State*, regional, or *local water purveyor* water conservation or drought response requirements, laws, rules, policies, or regulations, or requirements of the Orange County Fire Authority pertaining to fire-prone areas and fuel modification zones, the more restrictive provisions shall apply.

APPENDIX A – DEFINITIONS

DEFINITIONS

Unless the context otherwise requires, the italicized terms used in these *Guidelines* shall have the meanings set forth below:

“*Association*” means a nonprofit corporation or unincorporated association created for the purpose of managing a *common interest development*.

“*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.

“*Bulidng Code*” means Title 15 of the *Code*.

“*Certificate of Completion*” means the certificate included in **Appendix F** hereof and required to be completed and submitted to the *City* pursuant to Section 2.7 of hereof, and certifying that the *landscape project* has been installed in substantial conformance with the approved *Landscape Documentation Package* and complies with the provisions of the *Water Efficient Landscape Regulations* and these *Guidelines*.

“*Certification of Landscape Design*” means the certification included as **Appendix E** of these *Guidelines* that must be included in the *Landscape Documentation Package* pursuant to Section 2.1 of these *Guidelines*.

“*Certified Landscape Irrigation Auditor*” means a *person* designated by the *City* to conduct an *irrigation audit*.

“*Certification of Landscape Design*” means the certification included as Exhibit E of these *Guidelines* that must be included in the *Landscape Documentation Package* pursuant to Section 2.1 of these *Guidelines*.

“*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.

“*Checklist of Landscape Documentation Package*” means the checklist or index of all documents in the *Landscape Documentation Package* similar in form to the checklist included in **Appendix G** hereof.

“*City*” means the City of Yorba Linda or its authorized designee.

“*Code*” means the *City Municipal Code*.

“*Common interest developments*” means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

“*Conversion factor*” means the number that converts acre-inches per acre per year to gallons per square foot per year.

“*Distribution Uniformity*” or “*DU*” is a measure of how uniformly an irrigation head applies water to a specific target area and theoretically ranges from zero to 100 percent.

“*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.

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

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

“*Estimated Applied Water Use*” or “*EAWU*” means the annual total amount of water estimated to keep plants in a healthy state. It is based on factors such as *reference evapotranspiration rate*, the size of the *landscaped area*, *plant water use factors*, and the *irrigation efficiency* within each hydrozone.

“*Evapotranspiration Adjustment Factor*” or “*ETAF*” means the factor that is equal to the *plant factor* divided by the *irrigation efficiency* factor for a *landscape 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*.

“*Evapotranspiration rate*” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

“*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.

“*Guidelines*” means these Guidelines for Implementation of the City of Yorba Linda Water Efficient Landscape Regulations.

“*Hardscapes*” means any durable material or feature (*pervious* and *impervious*) installed in or around a *landscaped area*, such as pavements or walls. Pools and other water features are considered part of the *landscaped area* and not considered *hardscapes* for purposes of these *Guidelines*.

“*Homeowner installed*” means any landscaping either installed by a private individual for a single family or multi-family residence or installed by a *landscape professional* hired by a homeowner. A homeowner, for purposes of this ordinance, is a *person* who occupies the dwelling he or she owns or rents. This definition excludes speculative homes, which are not *owner-occupied* dwellings and which are subject under Section 1.2 to the requirements applicable to developer-installed single-family and multi-family residential *landscape projects*.

“*Hydrozone*” means a portion of the *landscaped area* having plants with similar water needs and typically irrigated by one *valve/controller* station. A *hydrozone* may be irrigated or non-irrigated.

“*Impervious*” means any surface or natural material that does not allow for the passage of water through the material and into the underlying soil.

“*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).

“*Invasive plants species*” or “*noxious plant species*” means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. *Invasive plant species* may be regulated by county agricultural agencies as *noxious species*. Lists of *invasive plant species* are maintained at the California Invasive Plant Inventory and the United States Department of Agriculture invasive plant and noxious weed database.

“*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.

“*Irrigation efficiency*” or “*IE*” means the measurement of the amount of water beneficially used divided by the amount of water applied to a *landscaped area*. *Irrigation efficiency* is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average *irrigation efficiency* for purposes of these *Guidelines* is 0.71. Greater *irrigation efficiency* can be expected from well designed and maintained systems. The following irrigation efficiency may be obtained for the listed irrigation heads with an IME of 90%:

- a. Pop-up stream rotator heads = 75%
- b. Stream rotor heads = 75%
- c. Microspray = 75%
- d. Bubbler = 80%
- e. Drip emitter = 85%

Subsurface irrigation = 90%

“*Irrigation Management Efficiency*” or “*IME*” means the measurement used to calculate the *irrigation efficiency* of the irrigation system for a *landscaped project*. A 90% *IME* can be achieved by using evapotranspiration controllers, soil moisture sensors, and other methods that will adjust irrigation run times to meet plant water needs.

“*Landscape coefficient*” (K_L) is the product of a *plant factor* multiplied by a density factor and a *microclimate* factor. The *landscape coefficient* is derived to estimate water loss from irrigated *landscaped areas* and *special landscaped areas*.

“*Landscape Documentation Package*” means the package of documents that a *project applicant* is required to submit to the *City* pursuant to Section 2.1 of these Guidelines.

“*Landscape professional*” means a licensed *landscape architect*, licensed landscape contractor, or any other *person* authorized to design a landscape pursuant to Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the California Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the California Food and Agriculture Code.

“*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 *impervious hardscapes*, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

“*Landscape project*” means the total area of landscape in a project as provided in the definition of “*landscaped area*” meeting the requirements under section 1.2(a) of these *Guidelines*.

“*Lateral line*” means the water delivery pipeline that supplies water to the *emitters* or sprinklers from the *valve*.

“*Local water purveyor*” means any entity, including a public agency, city, county, or private water company that provides retail water service within the *City*.

“*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.

“*Low volume overhead irrigation*” means aboveground irrigation heads with an upper flow limit of 0.5 gallons per minute.

“*Main line*” means the pressurized pipeline that delivers water from the water source to the *valve* or outlet.

“*Maximum Applied Water Allowance*” or “*MAWA*” means the upper limit of annual applied water for the established *landscaped area*, as specified in Section 2.2 of these *Guidelines*. It is based upon the area’s *reference evapotranspiration*, the *ETAF*, and the size of the *landscaped area*. The *Estimated Applied Water Use* shall not exceed the *Maximum Applied Water Allowance*.

“*Microclimate*” means the climate of a small, specific area that may contrast with the climate of the overall *landscaped area* due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.

“*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.

“*Model Ordinance*” means the Model Water Efficient Landscape Ordinance which was adopted by the California Department of Water Resources in accordance with California Government Code section 65591 *et seq.*

“*Mulch*” means any organic material such as leaves, bark, straw or compost, or inorganic mineral materials such as rocks, gravel, or 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.

“*New construction*” means a new building with landscaping or a landscape-dominated project, such as a park, playground, playing field, or greenbelt or other new landscape, which may or may not have an associated building or structure.

“*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.

“*Operating pressure*” means the pressure at which the parts of an irrigation system of sprinklers are designed to operate at by the manufacturer

“*Overspray*” means the irrigation water which is delivered beyond the target area.

“*Person*” means any natural person, firm, joint venture, joint stock company, partnership, public or private association, club, company, corporation, business trust, organization, public or private agency, government agency or institution, school district, college, university, any other user of water provided by the *City* or the *local water purveyor*, or the manager, lessee, agent, servant, officer, or employee of any of them or any other entity which is recognized by law as the subject of rights or duties.

“*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 *ET_o*, that estimates the amount of water needed by plants. For purposes of this *Water Efficient Landscape Regulations*, 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 these *Guidelines* are derived from the Department of Water Resources 2000 publication “Water Use Classification of Landscape Species.”

“*Precipitation rate*” means the rate of application of water measured in inches per hour.

“*Project applicant*” means the *person* submitting a *Landscape Documentation Package* required under Section 2.1 to request a permit, plan check, or design review from the *City*. A *project applicant* may be the *property owner*, a renter of property, or his or her designee.

“*Property owner*” or “*owner*” means the record owner of real property as shown on the most recently issued equalized assessment roll.

“*Reference evapotranspiration*” or “*ETo*” means a standard measurement of environmental parameters which affect the water use of plants. *ETo* is given expressed in inches per day, month, or year as represented in **Appendix B** of these *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*.

“*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.

“*Rehabilitation project*” means a *landscape project* that results in the substantial removal and replacement of, and/or modifications to, existing landscaping and meets the requirements under Section 1.2(a)(iii) and (v) of these *Guidelines*.

“*Runoff*” means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscaped 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.

“*Smart controller*” means an automatic timing device used to remotely control *valves* that operate an irrigation system and which schedules irrigation events using either evapotranspiration (weather-based) or soil moisture data.

“*Special Landscaped Areas*” or “*SLA*” 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*, areas dedicated to active play such as parks, sports fields, golf courses, and areas where *turf* provides a playing surface.

“*Sprinkler head*” means a device which delivers water through a nozzle.

“*State*” means the State of California.

“*Static water pressure*” means the pipeline or municipal water supply pressure when water is not flowing.

“*Station*” means an area served by one *valve* or by a set of *valves* that operate simultaneously.

“*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.

“*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.

“*Valve*” means a device used to control the flow of water in an irrigation system.

“*Water-conserving plant species*” means a plant species identified as having a low *plant factor*.

“*Water Efficient Landscape Regulations*” means Ordinance No. 2009-938, adopted by the City Council on December 15, 2009, and codified in the Municipal Code as Chapter 16.12.

“*Water Efficient Landscape Worksheets*” means the worksheets required to be completed pursuant to Section 2.2 of these *Guidelines* and which are included in **Appendix B** hereof.

“*Water feature*” means a design element where water is artificially supplied and open water performs an aesthetic or recreational function. *Water features* include artificial ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools. 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.

“*Watering window*” means the time of day irrigation is allowed.

“*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.

“*Zoning Code*” means Title 18 for the *Code*.

**APPENDIX B - REFERENCE
EVAPOTRANSPIRATION (ETO) TABLE**

Reference Evapotranspiration (ETo) Table

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



**APPENDIX C – WATER EFFICIENT LANDSCAPE
WORKSHEET**

EXAMPLE 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 # 1

Maximum Applied Water Allowance (MAWA)

Total MAWA = (ETo x 0.7 x LA in Sq. Ft. x 0.62) + (ETo x 1.0 x SLA in Sq. Ft. x 0.62) = 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)

Example Calculation: a hypothetical landscape project in Santa Ana, CA with an irrigated landscaped area of 40,000 square feet with 10,000 square feet of Special Landscaped Area. To calculate MAWA, the annual reference evapotranspiration value for Santa Ana is 48.2 inches as listed in the Reference Evapotranspiration Table in Appendix C.

	ETo	ETAF	LA or SLA (ft ²)	Conversion	MAWA (Gallons Per Year)
MAWA for LA =	48.2	x 0.7	x 40,000	x 0.62	= 836,752
MAWA for SLA =	48.2	x 1.0	x 10,000	x 0.62	= 298,840
Total MAWA =			50,000		1,135,592 Gallons per year for LA+SLA

Estimated Applied Water Use

$EAWU = ETo \times K_L \times LA \times 0.62 \div IE = \text{Gallons per year}$

where:

$EAWU = \text{Estimated Applied Water Use (gallons per year)}$

$ETo = \text{Reference Evapotranspiration Appendix C (inches per year)}$

$K_L = \text{Landscape Coefficient}$

$LA = \text{Landscape Area (square feet)}$

$0.62 = \text{Conversion factor (to gallons per square foot)}$

$IE = \text{Irrigation Efficiency} = IME \times DU$ (See definition in Appendix E for example IE percentages)

$IME = \text{Irrigation Management Efficiency (90\%)}$

$DU = \text{Distribution Uniformity of irrigation head}$

Example Calculation:

$K_L = K_s \times K_d \times K_{inc}$

$K_s = \text{species factor (range = 0.1-0.9)}$ (see WUCOLS list for values)

$K_d = \text{density factor (range = 0.5-1.3)}$ (see WUCOLS for density value ranges)

$K_{inc} = \text{microclimate factor (range = 0.5-1.4)}$ (see WUCOLS)

WUCOLS – www.owue.water.ca.gov/docs/wucols00.pdf

	ETo	KL	LA	Conversion	IE	EAWU (Gallons per year)
Special Landscaped Area	48.2	x 1.00	x 10,000	x 0.62	÷ 0.75	= 398,453
Cool Season Turf	48.2	x 1.00	x 0	x 0.62	÷ 0.71	= 0
Warm Season Turf	48.2	x 0.65	x 0	x 0.62	÷ 0.71	= 0
High Water Using Shrub	48.2	x 0.70	x 0	x 0.62	÷ 0.71	= 0
Medium Water Using Shrub	48.2	x 0.50	x 15,000	x 0.62	÷ 0.65	= 344,815
Low Water Using Shrub	48.2	x 0.30	x 25,000	x 0.62	÷ 0.75	= 298,840
Very Low Water Using Shrub	48.2	x 0.20	x 0	x 0.62	÷ 0.71	= 0
Other	48.2	x 0.50	x 0	x 0.62	÷ 0.71	= 0
Other	48.2	x 0.50	x 0	x 0.62	÷ 0.71	= 0
Total EAWU =			50,000			1,042,109 Gallons per year

Compare *EAWU* with *MAWA*.

The *EAWU* (1,042,109 gallons per year) is less than *MAWA* (1,135,592 gallons per year). For this example, the water budget complies with the *MAWA*.

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		

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)

Total MAWA = (ETo x 0.7 x LA in Sq. Ft. x 0.62) + (ETo x 1.0 x SLA in Sq. Ft. x 0.62) = 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	ETAF	LA or SLA (ft ²)	Conversion	MAWA (Gallons Per Year)
MAWA for LA =	x	0.7	x	x 0.62	=
MAWA for SLA =	x	1.0	x	x 0.62	=
Total MAWA =					

Estimated Applied Water Use

$EAWU = ETo \times K_L \times LA \times 0.62 \div IE = \text{Gallons per year}$

where:

$EAWU = \text{Estimated Applied Water Use (gallons per year)}$

$ETo = \text{Reference Evapotranspiration Appendix C (inches per year)}$

$K_L = \text{Landscape Coefficient}$

$LA = \text{Landscape Area (square feet)}$

$0.62 = \text{Conversion factor (to gallons per square foot)}$

$IE = \text{Irrigation Management Efficiency (90\%)}$

$IME = \text{Irrigation Management Efficiency (90\%)}$

$DU = \text{Distribution Uniformity of irrigation head}$

EAWU Calculation:

$K_L = K_s \times K_d \times K_{mc}$

$K_s = \text{species factor (range = 0.1-0.9) (see WUCOLS list for values)}$

$K_d = \text{density factor (range = 0.5-1.3) (see WUCOLS for density value ranges)}$

$K_{mc} = \text{microclimate factor (range = 0.5-1.4) (see WUCOLS)}$

WUCOLS – www.owue.water.ca.gov/docs/wucols00.pdf

	ETo	KL	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	÷	=
Other	x		x	0.62	÷	=
Total EAWU =						

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		

**APPENDIX D – WATER EFFICIENT
LANDSCAPE WORKSHEET**

WATER EFFICIENT LANDSCAPE WORKSHEET

PROJECT NAME: _____
 TRACT/PARCEL/LOT: _____
 SUBMITTED BY: _____
 COMPANY: _____
 TELEPHONE: _____
 CONTACT: _____
 RETURNED TO: _____

PERMIT NO: _____
 PROJECT ADDRESS: _____
 DATE RECEIVED: _____
 RECEIVED BY: _____
 CHECKED BY: _____
 DATE RETURNED: _____

THE FOLLOWING ITEMS ARE REQUIRED FOR COMPLETE SUBMITTAL:

<u>FIRST CHECK</u>	<u>DUE AT PERMIT ISSUANCE</u>
<input type="checkbox"/> 5 Sets of plans 24" x 36	<input type="checkbox"/> 1 set of signed mylars (by landscape architect and city engineer)
<input type="checkbox"/> 1 Copy of Planning 'Conditions of Approval'	<input type="checkbox"/> 1 set of full size plans
<input type="checkbox"/> 1 Copy of approval from other agencies (if applicable)	<input type="checkbox"/> 2 sets of half-size plans
<input type="checkbox"/> Plan check fee of \$. See fee schedule	<input type="checkbox"/> Inspection Deposit \$ _____ (see fee schedule)
<input type="checkbox"/> Other _____	<input type="checkbox"/> Surety (100% of estimate)
<input type="checkbox"/> Other _____	<input type="checkbox"/> CD of .Piffle (see attached specifications)
<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____
<u>ALL PLAN REVISION SUBMITTALS</u>	<u>DUE AT PROJECT CLOSE OUT</u>
<input type="checkbox"/> 3 sets of revised blue lines	<input type="checkbox"/> Redline as-builts
<input type="checkbox"/> Previous check print	<input type="checkbox"/> CD of signed redline as-builts
<input type="checkbox"/> Additional plan check deposit (if required) \$ _____	<input type="checkbox"/> Other _____
<input type="checkbox"/> Other _____	
<input type="checkbox"/> Other _____	
<u>FINAL SUBMITTAL FOR CITY APPROVAL</u>	
<input type="checkbox"/> Original mylars (all sheets must be 24" x 36" maximum, stamped & signed by landscape architect)	
<input type="checkbox"/> Previous Check Print	

**APPENDIX E – CERTIFICATION OF
LANDSCAPE DESIGN**

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 landscape project located at _____
_____ (provide street address or parcel, tract, or lot number(s)) were prepared by me or under my supervision. (Attach additional sheets as necessary.)
- (3) The landscape design and water use calculations for the identified property comply with the requirements of the City of Yorba Linda Water Efficient Landscape Regulations and the Guidelines for Implementation of the City of Yorba Linda Water Efficient Landscape Regulations.
- (4) The information I have provided in this Certification of Landscape Design is true and correct and is hereby submitted in compliance with the Guidelines for Implementation of the City of Yorba Linda Water Efficient Landscape Regulations.

Print Name	Title	Date
Signature	License Number	
Company	Address	
Telephone	Fax	E-mail Address

For City Use only.

Date received

Name

Signature

Landscape Design Professional's Stamp
(if applicable)

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**APPENDIX F – CERTIFICATE OF
COMPLETION**

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, tract, or lot number(s)) was installed by me or under my supervision. (Attached additional sheets as necessary.)

(3) The landscaping for the identified landscape project has been installed in substantial conformance with the approved Landscape Documentation Package, and complies with the requirements of the City of Yorba Linda Water Efficient Landscape Regulations (Chapter 16.12 of the Yorba Linda Municipal Code) and the Guidelines for Implementation of the City of Yorba Linda Water Efficient Landscape Regulations for the efficient use of water in the landscape.

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

Print Name	Title	Date
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Signature	License Number
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Company	Address
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Telephone	Fax	E-mail Address
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For City use only.

Landscape Design Professional's Stamp
(If Appropriate)

Project Approved
 Project Not Approved

Name
Title

Signature
Date

Reasons for denial included in attached sheet(s).

**APPENDIX G – CHECKLIST OF LANDSCAPE
DOCUMENTATION PACKAGE**

CHECKLIST OF LANDSCAPE DOCUMENTATION PACKAGE

1. Project Information

Date	Project Name
Project Applicant	Title
Company	Telephone/Fax/E-mail
Company Street Address	City/State/Zip Code
Project Street Address	Project Parcel, Tract or Lot Number(s), if available.
Project Type	Total Landscaped Area (Square Feet)
Water Supply Type	Additional Project Information (may attach additional sheets)

2. Property Owner Information

Name(s)	Street Address
City/State/Zip code	Telephone/Fax/E-mail
Title (if applicable)	Company (if applicable)
Company Address (if applicable)	City/State/Zip

3. Elements of Landscape Documentation Package Submitted:

- Certification of Landscape Design
- Water Efficient Landscape Worksheet
- Maximum Applied Water Allowance (MAWA) Calculation
- Estimated Applied Water Use (EAWU) Calculation
- Water Efficient Landscape Worksheet
- Hydrozone Information Table
- Water Budget Calculations
- Soil Management Report
- Landscape Design Plan
- Irrigation Design Plan
- Grading Design Plan (if applicable)
- Additional Landscape Project Information (see attached sheets)

