



CITY OF FULLERTON

Community Development Department

January 28, 2010

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

Re: Report on Water Efficient Landscape Ordinance

In accordance with AB 1881, the City of Fullerton has revised its Landscape Ordinance. The modifications generally follow the model framework developed by the Orange County League of Cities and the Metropolitan Water District of Orange County (Orange County Model Landscape Ordinance), which is designed to meet the objectives of AB 1881 and be at least as water efficient as the State Model Water Landscape Ordinance. Attached is the City Council Agenda Package as well as the adopted ordinance in satisfaction of the January 31, 2010 reporting deadline established by AB 1881.

Sincerely,

A handwritten signature in cursive script that reads "Heather R. S. Allen".

Heather R. S. Allen, AICP
Senior Planner

THE EDUCATION COMMUNITY

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THE FOLLOWING ORDINANCE WHICH AMENDS
THE FULLERTON MUNICIPAL CODE HAS BEEN
ADOPTED BY THE CITY COUNCIL BUT IS NOT
YET INCLUDED IN THE ON-LINE MUNICIPAL CODE

ORDINANCE NO. 3134

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY
OF FULLERTON, CALIFORNIA, AMENDING TITLE 15 OF
THE FULLERTON MUNICIPAL CODE PERTAINING TO
LANDSCAPING AND IRRIGATION REQUIREMENTS

ORDINANCE NO. 3134

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF FULLERTON, CALIFORNIA, AMENDING TITLE 15 OF THE FULLERTON MUNICIPAL CODE PERTAINING TO LANDSCAPING AND IRRIGATION REQUIREMENTS

PRJ09-00272 – LRP09-00008

CITY OF FULLERTON

THE CITY COUNCIL OF THE CITY OF FULLERTON DOES ORDAIN AS FOLLOWS:

1. That Title 15 of the Fullerton Municipal Code pertaining to landscaping and irrigation requirements will be amended as shown on Attachment A.

ADOPTED BY THE FULLERTON CITY COUNCIL ON December 15, 2009.


Don Bankhead, Mayor

ATTEST:


Beverley White City Clerk

Attachment A
Ordinance No. 3134

FULLERTON LANDSCAPE ORDINANCE

ADD ENTIRE CHAPTER

15.50 Landscaping and irrigation standards (Fullerton Landscape Ordinance)

15.50.010. Purpose and Intent

- A. The purpose of the Fullerton Landscape Ordinance is to establish standards for the provision of landscaping within the City of Fullerton while promoting conservation and the efficient use of water, prevention of erosion, protection from fire, and restoration of natural systems.**
- B. The intent of the Fullerton Landscape Ordinance is to maximize the range of landscape materials and design possibilities within the framework established by this Chapter.**
- C. The Fullerton Landscape Ordinance includes by reference the following chapters of the Fullerton Municipal Code:**

- 9.06 – Community Forestry**
- 12.06 – Water Supply Shortage Conservation Plan**
- 12.04 – Water Regulations**
- 12.18 – Water Quality Ordinance**
- 13.19 – Fire Prevention Standards**
- 14.03 – Erosion Control**

If a discrepancy arises between Chapter 15.50 and the above chapters, the provisions requiring the most landscaping quantities and the stricter design criteria shall apply, unless otherwise determined by the Directors of Development Services and Engineering and the Fire Chief.

15.50.015. Applicability and Exemptions

- A. The Fullerton Landscape Ordinance applies to:**
 - 1. Landscaping required for single- and two-family residential zoned properties pursuant to Section 15.17.050.H;**
 - 2. Landscaping required for multi-family residential zoned properties pursuant to Section 15.17.070.G;**
 - 3. Landscaping required for planned residential development zoned properties pursuant to Section 15.20.050.E;**
 - 4. Landscaping required for specific plan district zoned properties pursuant to Section 15.21.060;**
 - 5. Landscaping required for oil-overlay zoned properties pursuant to Section 15.22.110;**

6. Landscaping required for public-land zoned properties pursuant to Section 15.25.050;
7. Landscaping required for commercial zoned properties pursuant to Section 15.30.050.G;
8. Landscaping required for commercial-greenbelt zoned properties pursuant to Section 15.35.050.J;
9. Landscaping required for industrial zoned properties pursuant to Section 15.40.040.G
10. Landscaping required for commercial stables pursuant to Section 15.55.030.C.2.g; and
11. Landscaping required for parking areas pursuant to Section 15.56.130.

B. The Fullerton Landscape Ordinance does not apply to:

1. Local, state or federal historic or cultural resources where application of the Landscape Ordinance would be in conflict with the Secretary of the Interior's Standards for the Treatment of Historic Properties or other such relevant standards
2. Site alterations to intentionally establish or re-establish a defined, indigenous ecosystem without a permanent irrigation system
3. Plant collections, as part of botanical gardens and arboretums open to the public

15.50.25. General Provisions

- A. Each landscaped area shall be located, designed and material selected such that at any time, including at maturity, it maximizes summer shade and winter solar gain and does not, interfere with visibility, access, building integrity, or utility infrastructure.
- B. Each landscaped area shall be designed to minimize disruption to existing mature landscaping that is in good, healthy condition, and every effort shall be made to retain and incorporate said landscaping into the overall landscape theme.
- C. Each landscaped area shall include a combination of materials compatible with the shape, topography and soil conditions of the site, as well as the architectural characteristics of the structure(s) on the site.
- D. Each landscaped area shall use native and appropriate non-native plants adapted to site conditions, climate, and design intent to support biodiversity, reduced pesticide use, and water conservation, with particular avoidance of the use of invasive plant species defined by the California Invasive Plant Council.
- E. Each landscaped area shall be designed with an efficient irrigation system that waters only targeted areas when needed in relation to soil and climatic conditions.

- F. Each landscaped area shall be installed in accordance with approved landscape and irrigation plans.
- G. Each landscaped area shall be regularly maintained following installation to reach and retain a healthy, established growing condition.

15.50.30. Requirements and Procedures for Review

- A. A Landscape Documentation Package shall be submitted to the City for review and approval for all projects subject to the provisions of the Fullerton Landscape Ordinance.
- B. A standard Landscape Documentation Package shall include:
 - 1. Water Efficient Landscape Calculations pursuant to 15.50.35
 - 2. Agricultural Suitability Report pursuant to 15.50.40
 - 3. Certified Landscape Design Plan pursuant to 15.50.45
 - 4. Certified Irrigation Design Plan pursuant to 15.50.50
 - 5. Final Project Certification pursuant to 15.50.55
 - 6. One-year Maintenance Deposit pursuant to 15.50.60
- C. Certain projects shall require additional information as part of the Landscape Documentation Package as follows:
 - 1. Irrigation Audit Report pursuant to Section 15.50.55.C
 - 2. Private Yard and Open Space Documentation pursuant to Section 15.50.90.B
- D. The following Landscape Documentation Package Items shall be submitted for review and approval prior to the issuance of building permits:
 - 1. Water Efficient Landscape Calculations
 - 2. Agricultural Suitability Report, where project grading is minimal such that the soil characteristics will not be significantly altered during construction
 - 3. Certified Landscape Design Plan
 - 4. Certified Irrigation Design Plan
- E. Installation of landscaping and irrigation subject to a Landscape Documentation Package shall not proceed without the issuance of Landscape, Plumbing, and/or Water Engineering permits.

F. The following Landscape Documentation Package Items shall be submitted for review and approval as a prerequisite to the final occupancy approval of the property:

1. Agricultural Suitability Report, where project grading impacted the soil characteristics
2. Final Project Certification
3. One-year Maintenance Deposit
4. Irrigation Audit Report when required by Section 15.50.55.C
5. Private Yard and Open Space Documentation when required by Section 15.50.90.B

15.50.35. Water Efficient Landscape Calculations

A. Water Efficient Landscape Calculations shall be prepared by and bear the signature of a professional appropriately licensed in the State of California to provide professional landscape design services; the signature shall be accompanied by a date and the following statement: "I have complied with the City of Fullerton Landscape Ordinance in preparing the Water Efficient Landscape Calculations."

B. The licensed landscape professional shall calculate the Maximum Applied Water Allowance (MAWA) for the total landscaped area to establish the upper limit of irrigation water that shall be used by the project annually. The MAWA shall be calculated using the formula and methodology established in Exhibit A to the Fullerton Landscape Ordinance. A separate worksheet shall be prepared for each point of connection. Seasonal calculations can be aggregated for an annual total.

1. The MAWA for landscaped areas shall be calculated using an Evapotranspiration Adjustment Factor (ETAF) of 0.7. The MAWA for special landscaped areas shall be calculated using an ETAF of 1.0.
2. The MAWA shall be calculated using a Reference Evapotranspiration Rate (ETo) in accordance with Table 15.50.35.A.

Table 15.50.35.A. 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. Measurements are from the city of Santa Ana which is the closest city in the same reference evapotranspiration zone for which data has been collected.

- C. The licensed landscape professional shall calculate the Estimated Applied Water Use (EAWU) for the total landscaped area to determine the total annual irrigation water need of the project as required to keep plants in a healthy state. The EAWU shall be calculated using the formula and methodology established in Exhibit B to the Fullerton Landscape Ordinance. A separate worksheet shall be prepared for each point of connection. Seasonal calculations can be aggregated for an annual total.
1. The EAWU shall be calculated using a Reference Evapotranspiration Rate (ET_o) in accordance with Table 15.50.35.A.
 2. The EAWU shall be calculated using a Landscape Coefficient according to protocols defined in detail in the Water Use Classification of Landscape Species (WUCOLS). The species factor shall be determined for each hydrozone based on the highest-water-use plant species within the zone.
 - a. The area of a special landscaped area or water feature shall be defined as a high water use hydrozone with a species factor of 1.0 unless a Landscape Coefficient according to protocols defined in detail in the Water Use Classification of Landscape Species (WUCOLS) is available.
 - b. 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 species factor of 0.1.
 3. The EAWU shall be calculated using an Irrigation Efficiency assumption by head type in accordance with Table 15.50.35.B. Other values may be used when supported by manufacturer's specifications or landscape professional's calculations when derived from measurements and estimates of irrigation system characteristics and management practices.

Table 15.50.35.B. Irrigation Efficiency (IE) Table

Head Type	Efficiency
Spray head	60%
Pop-up stream rotator heads	75%
Stream rotor heads	75%
Micro-spray	75%
Bubbler	80%
Drip emitter	85%
Subsurface irrigation	90%

- D. The EAWU for the total landscaped area shall not exceed the MAWA.

15.50.40. Agricultural Suitability Report

- A. The licensed landscape professional shall submit soil samples to a certified agronomic soils laboratory for analysis and recommendations in order to ensure landscaped area is designed to drain to promote healthy plant growth and to prevent excessive erosion and runoff. These samples shall be taken when the soil

conditions of the landscape areas will no longer be impacted by grading or other earthmoving activities.

- B. Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
- C. The minimum information to be included in the report shall be:
 - Soil texture;
 - Infiltration rate determined by laboratory test or soil texture;
 - Infiltration rate table;
 - pH;
 - Total soluble salts;
 - Sodium;
 - Percent organic matter; and
 - Recommendations to ensure landscaped areas are designed to drain to promote healthy plant growth and to prevent excessive erosion and runoff.
- D. Information and recommendations from the Agricultural Suitability Report shall be incorporated into the Certified Landscape and Irrigation Design Plans, as set forth in Sections 15.50.45 and 15.50.50.

15.50.45. Certified Landscape Design Plan

A. Design Requirements

1. Landscaped areas shall be designed in accordance with the following:
 - a. Designs and materials shall be in accordance with the General Provisions as set forth in Section 15.50.25;
 - b. The EAWU for the total landscaped area shall not exceed the MAWA as set forth in Section 15.50.35;
 - c. The following Minimum Planting Requirements shall be applied:
 - i. A minimum of one tree (minimum size: 15-gallon container) shall be provided for every 200 square feet of landscaped area on the property. The number of required trees may be reduced by the Director of Development Services when it is determined that an alternative design will meet the intent of this section.
 - ii. A minimum of one shrub shall be provided for every 15 square feet of landscaped area other than turf areas. Fifty percent of the required shrubs shall be a minimum of a five-gallon container. The Director of Development Services may reduce the number of required shrubs when it is determined that an alternative design will meet the intent of this section.
 - iii. Turf shall not be treated as a fill in material, but rather as a planned element of the landscape. The use of turf grass is only recommended in active use areas where it provides a playing surface. Groundcovers and

drought tolerant grasses that require less water are recommended in non-active areas. Turf for non-active use shall be limited to 25% of the landscaped area or as otherwise restricted by the MAWA. Turf shall not be permitted in landscaped areas with a slope percentage greater than 25%. Where turf is utilized, it shall be separated from other landscape areas by a border, mow strip, or other material as approved by the Director of Development Services.

- iv. Planting design (species, quantity, size and spacing) shall achieve 70% landscape area coverage within 2 growing seasons from installation.
 - v. The exposed soil surfaces on the ground plane shall be covered with a minimum two-inch layer of material to improve waterholding capabilities of soil through reduced evaporation and compaction. Material may be decorative gravel, stones, decomposed granite, compost, or mulch as appropriate for the plant material and of a size sufficient to remain in place once it has been installed. Stabilizing mulching products shall be used on slopes.
 - vi. Plant material shall be utilized to: screen trash enclosures and public utilities and connections; relieve solid, unbroken building elevations and soften continuous wall expanses; or as otherwise required by Fullerton Municipal Code 15.46.050.A and 15.47.050.A.
 - vii. All planting areas shall be separated from parking and vehicular circulation areas by a raised, continuous six-inch Portland cement concrete curb. The Director of Development Services may approve other materials that accomplish the same purpose.
 - viii. Projects including unimproved private yards or open spaces to be landscaped or otherwise completed by the buyer of the lot shall comply with Section 15.50.90.A.
 - ix. Artificial plants and surfaces painted to appear as plant material are not acceptable under any circumstances in a landscaped area. Synthetic turf shall be permitted pursuant to Fullerton Municipal Code Section 15.56.140.
- d. Materials shall be located by hydrozone such that:
- i. Hydrozones shall consist of plants materials with similar water use except where specified as a permitted mix.
 - ii. Individual hydrozones that mix plants of moderate and low water use or moderate and high water use shall be permitted if:
 - The plant factor calculation is based on the proportions of the respective plant water uses and their respective plant factors; or
 - The plant factor of the higher water using plant is used for the calculations.

- iii. Individual hydrozones that mix high and low water use plants shall not be permitted.
- e. No water shall be used to clean, fill, or maintain levels in decorative water features, or other similar aesthetic structures, unless such water is part of a recycling system.

B. Content

1. Plans shall:

- a. Be prepared by and bear the signature of a professional appropriately licensed in the State of California to provide professional landscape design services; the signature shall be accompanied by a date and the following statement: "I have complied with the City of Fullerton Landscape Ordinance in preparing the Landscape Design Plan;
- b. Provide project summary information which at a minimum includes:
 - Project Number
 - Project Location (Street Address)
 - Zoning Classification of the Project Location
 - Landscaped Area (in square feet)
 - Planting Area (in square feet)
 - Turf Area (in square feet)
 - Water Feature Area (in square feet)
 - Special Landscaped Area (in square feet)
- c. Identify components of the Total Landscaped Area:
 - i. Planting Areas and Turf Areas
 - Delineate and label each hydrozone by number, letter, or other method for identification and indicate on a separate table the water use for each hydrozone (low, moderate, high, low-moderate mix, or moderate-high mix);
 - Spatially locate the planting materials within each hydrozone and indicate on a separate table the size, quantity and WUCOLS species factor of each plant by hydrozone;
 - Identify location type of material to cover exposed soil surfaces and application depth;
 - Identify location and type of separation between turf and planting areas;
 - Identify location and type of separation between planting areas and parking and vehicular circulation areas;

- Identify soil amendments, type, and quantity based on Agricultural Suitability Report;
- Indicate height of graded slopes and slope percentage;
- Indicate proposed drainage patterns, proposed topography of site with a separate identification of areas to be compacted, and location of retaining or non-retaining walls; alternatively the grading plan and wall plan submitted for the project shall be provided;
- Indicate methods of tree staking or guying for single and multi-trunk trees, as appropriate, and indicate time after which stakes or guys can be removed; a minimum of two stakes on either side of the tree or three guy wires equidistantly spaced around the tree shall be required; central nursery stakes shall be removed once staked or guyed per plan;
- Indicate method to espalier vines, as appropriate; nursery stakes or trellises shall be removed once espaliered per plan.

ii. Water Features

- Identify type of water features;
 - Identify if water is recirculated;
 - Identify if water is recycled;
 - Identify surface area of water features;
- d. Identify pervious or non-pervious hardscapes surrounded by or abutting landscape areas;
- e. Identify location of, for reference purposes only, any storm water best management practices that encourage on-site retention and infiltration of storm water;
- f. Identify any rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
- g. Identify locations of buildings and other structures on site;
- h. Identify locations of above-ground utilities and connections as well as trash enclosures;
- i. Include a schedule for on-going maintenance.

15.50.50. Certified Irrigation Design Plan

A. Design Requirements

1. Irrigation systems shall be designed in accordance with the following:
 - a. Designs and materials shall be in accordance with the General Provisions as set forth in Section 15.50.25;
 - b. The EAWU for the total landscaped area shall not exceed the MAWA as set forth in Section 15.50.35;
 - c. The system shall be appropriate for and conform to the hydrozones of the landscape design plan;
 - d. The system shall utilize "smart" automated irrigation technology as follows:
 - i. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems;
 - ii. 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 to avoid irrigation during windy or freezing weather or during rain;
 - iii. High flow sensors that detect and report high flow conditions created by system damage or malfunction shall be provided for landscape areas with a slope greater than 5 feet height or for a landscape area over 25,000 square feet in size; and
 - e. The following System Specifications shall be applied:
 - i. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
 - ii. Minimum average system irrigation efficiency shall be 0.71.
 - iii. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
 - iv. Trees shall utilize bubbler or drip irrigation and, where feasible, be placed on separate valves from shrubs, groundcovers, and turf.
 - v. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
 - vi. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

- vii. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
 - viii. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
 - ix. Check valves or anti-drain valves shall be utilized to minimize or prevent low-head drainage.
 - x. Narrow or irregularly shaped turf areas less than eight (8) feet in width shall be irrigated with subsurface irrigation or micro-spray heads.
 - xi. Spray heads, pop-up stream rotator heads, and stream rotor heads shall not be permitted within 24 inches of any non-permeable surface unless the adjacent non-permeable surface is designed and constructed to drain entirely to landscaping.
 - xii. Turf areas shall be irrigated with equipment that has a precipitation rate of one inch or less per hour as specified by the manufacturer.
 - xiii. Areas with a slope percentage greater than 25% shall be irrigated with equipment that has a precipitation rate of 0.75 inches or less per hour as specified by the manufacturer. An exception to the precipitation rate may be granted by the Director of Development Services for an area which is less than 5 feet high and 12 feet in long if it can be shown that the equipment meets the intent of this Ordinance.
 - xiv. Manual shut-off valves shall be provided as close as possible to the point of connection to minimize water loss in case of an emergency or routine repair.
 - xv. Dynamic or operating pressure at each emission device shall be within the manufacturer's recommended pressure range for optimal performance:
 - Pressure (static and dynamic/operating) and water supply flow measurements shall be taken at the point of connection or nearest service point at the earlier of the design stage or installation;
 - Pressure-regulating devices, booster pumps, or other devices shall be installed if the static pressure is above or below the pressure required by the irrigation system.
 - xvi. Projects including unimproved private yards or open spaces to be landscaped or otherwise completed by the buyer of the lot shall comply with Section 15.50.90.A.
- f. Backflow shall be prevented in accordance with Plumbing Code and Engineering Department requirements.

- g. Separate water meters for irrigation shall be provided when required by State law.

B. Content

1. Plans shall:

- a. Be prepared by and bear the signature of a professional appropriately licensed in the State of California to provide professional irrigation design services; the signature shall be accompanied by a date and the following statement: "I have complied with the City of Fullerton Landscape Ordinance in preparing the Irrigation Design Plan;
- b. Provide project summary information which at a minimum includes:
 - Average irrigation efficiency of total landscaped area
 - Percentage of total landscaped, based on square footage, irrigated with spray heads (spray, pop-up stream rotator, stream rotor, or other spray) versus non-spray heads (micro-spray, bubbler, drip emitter, subsurface, or other non-spray)
- c. Identify components of the Landscaped Area:
 - i. Planting Areas and Turf Areas
 - Delineate and label each hydrozone by number, letter, or other method for identification and indicate on a separate table the water use for each hydrozone (low, moderate, high, low-moderate mix, or moderate-high mix);
 - Spatially locate the irrigation system components within each hydrozone and identify corresponding valves by number and indicate on a separate table the type and size of all components including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices;
 - Identify the location and size of separate water meters or sub-meters for landscape;
 - Provide the static water pressure at the point of connection to the public water supply;
 - Provide the flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
 - Provide irrigation schedule parameters necessary to program automatic irrigation controllers for the landscape establishment period

(first 6 months after installation unless otherwise specified by landscape professional); and

- Provide irrigation schedule parameters necessary to program automatic irrigation controllers following the establishment period.

ii. Water Features

- Spatially locate recirculating system and components; and
- Spatially locate recycled or reclaimed water system and components.

15.50.55. Final Project Certification

- A. Installation of the landscape and irrigation in accordance with approved plans shall be certified by the licensed landscape professional who prepared the Certified Landscape Design Plans and the licensed professional who prepared the Certified Irrigation Design Plans;
- B. Establishment period and post-establishment period irrigation schedule parameters shall be affixed inside irrigation controller boxes;
- C. For landscaped areas with 75% or more of the total landscaped area irrigated with spray heads (spray, pop-up stream rotator, stream rotor, or other spray head), an irrigation audit report shall be provided from a certified irrigation auditor to verify that the irrigation system is operating as designed and that the design complies with the Fullerton Landscape Ordinance.

15.50.60. One-year Maintenance Deposit

- A. A one-year maintenance deposit in the amount equal to 50 percent of the combined cost of the landscaping materials and irrigation system, or as otherwise agreed to by the Director of Development Services, but not less than 500 dollars, shall be posted as a prerequisite to the final approval/clearance of the use or development of property.

15.50.70. Modifications to Approved Plans

- A. Modifications to approved Water Efficient Landscape Calculations, Certified Landscape Design Plans and/or Certified Irrigation Design Plan shall be reviewed and approved by the Director of Development Services prior to installation of said landscaping or irrigation system. All modifications require re-certification pursuant to 15.50.35.A, 15.50.45.B.1.a, or 15.50.50.B.1.a, respectively.

15.50.80. Landscape Maintenance Requirements

- A. Each landscaped area shall be regularly maintained including proper pruning, staking, mowing and aerating of lawns, weeding, removing litter, fertilizing, and replenishing mulch as needed to replace mineral levels. Plants shall remain in a

healthy growing condition or replaced. Like-for-like replacements require no approval. Modifications shall be reviewed pursuant to 15.50.70.

- B. The irrigation system shall be regularly maintained and evaluated to utilize the minimum amount of water required to maintain plant health. Broken or damaged parts shall be replaced. Like-for-like replacements require no approval. Modifications shall be reviewed pursuant to 15.50.70.

15.50.90. Treatment of Private Yards or Open Space

- A. When a project is being developed that includes unimproved private yards or open spaces to be landscaped or otherwise completed by the buyer of the lot, the Landscape Documentation Package shall be prepared with assumptions as to the ultimate improvement of these areas such that the Water Efficient Landscape Calculations consider all outdoor water use of the project.
- B. The CC&Rs, or other binding document provided to buyer at time of sale (if the project does not have CC&Rs), shall include sufficient parameters such that the private yard or open space improvements are completed consistent with the estimated water usage. The information provided to the buyer shall include, at a minimum, sample landscape and irrigation plans with plant and material pallets. It is recommended that multiple designs be developed with a menu of options from which the buyer could develop a design consistent with the Water Efficient Landscape Calculation assumptions.

MAXIMUM APPLIED WATER ALLOWANCE WORKSHEET

This worksheet, or similar containing the same information, shall be filled out by the landscape professional for each point of connection.
 All sections shall be completed. If multiple points of connection, a summary sheet shall be provided for total project MAWA.

Point of Connection # _____									
Maximum Applied Water Allowance (MAWA)									
$\text{MAWA} = (\text{ET}_o \times 0.7 \times \text{LA} \times 0.62) + (\text{ET}_o \times 1.0 \times \text{SLA} \times 0.62) = \text{Gallons per year for LA+SLA}$									
where: MAWA = Maximum Applied Water Allowance (gallons per year) ET _o = Reference Evapotranspiration (inches per year) ETAF = Evapotranspiration Adjustment Factor LA = Landscaped Area (square feet) SLA = Special Landscaped Area (square feet) 0.7 = ETAF for Landscaped Area 1.0 = ETAF for Special Landscaped Area 0.62 = Conversion factor (to gallons per square foot)									
MAWA Calculation:									
	ET _o		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 WORKSHEET

This worksheet, or similar containing the same information, shall be filled out by the landscape professional for each point of connection.
 All sections shall be completed. If multiple points of connection, a summary sheet shall be provided for total project EAWU.

Point of Connection # _____											
Estimated Applied Water Use (EAWU)											
EAWU = $ET_o \times K_L \times LA \times 0.62 \div IE$ = Gallons per year											
where: EAWU = Estimated Applied Water Use (gallons per year) ET_o = Reference Evapotranspiration (inches per year) K_L = Landscape Coefficient LA = Landscaped Area (square feet) 0.62 = Conversion factor (to gallons per square foot) IE = Irrigation Efficiency					$K_L = K_s \times K_d \times K_{mc}$ K_s = species factor (range = 0.1-0.9) K_d = density factor (range = 0.5-1.3) K_{mc} = microclimate factor (range = 0.5-1.4)						
EAWU Calculation:											
Hydrozone	ET_o		K_L		LA or SLA (ft ²)		Conversion		IE		EAWU (Gallons Per Year)
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
		x		x		x	0.62	+		=	
Total EAWU =											

DEFINITIONS

ADD

15.04.040

ACTIVE USE TURF means natural or synthetic turf that is installed for sports parks and fields, golf courses, or other playing surfaces and passive recreation areas.

HYDROZONE means a portion of the **LANDSCAPED AREA** having plants with similar water needs and if irrigated, it is by one valve/controller station.

INVASIVE PLANTS means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources.

LANDSCAPED AREA means all the planting areas, non-active use natural turf areas, and water features on a property, including that which is provided in setbacks, parking lots, usable open space areas (private and common), and as visual open space. The **LANDSCAPED AREA** does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, synthetic turf (without an irrigation system), or other non-irrigated areas designated for non-development (e.g. native vegetation). The **LANDSCAPED AREA** also does not include that which qualifies as a **SPECIAL LANDSCAPE AREA**.

NON-ACTIVE USE TURF means natural or synthetic turf that is installed for aesthetic purposes and does not serve a permanent recreational purpose.

NON-PERVIOUS means any surface or material that does not allow for the passage of water through the material and into the underlying soil.

OPEN PARKING AREA means that portion of a property delineated for surface parking and includes the area attributable to the driveways and drive aisles to provide access and circulation to and through the parking area.

PEDESTRIAN AND VEHICULAR ACCESS WAYS means any improved pervious or non-pervious hardscape surface for pedestrian and/or vehicular movement including walkways, driveways, fire access drives, and private streets.

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

REHABILITATION OF EXISTING LANDSCAPED AREAS means the replacement of more than 50% of the material in existing planting or turf areas with species other than like of like.

SLOPE HEIGHT means the difference between the top of the slope and the bottom of the slope, representing the vertical elevation change.

SLOPE PERCENTAGE means the **SLOPE HEIGHT** divided by the linear (horizontal) distance in which the vertical elevation change occurs, multiplied by 100.

SPECIAL LANDSCAPED AREA means the portion of a property dedicated solely to edible plants, areas and water features using recycled water, and turf areas (including synthetic turf for which an irrigation system is installed) dedicated to active use.

TOTAL LANDSCAPE AREA means the **LANDSCAPED AREA** and the **SPECIAL LANDSCAPED AREA** on a property.

WATER FEATURE means a design element in a **LANDSCAPED AREA** where open water performs a decorative or recreational function and includes ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied).

SUPPORTING SECTIONS

R-1 & R-2

REPLACE SECTION

15.17.050.H. Landscaping requirements:

1. The front yard area of the lot shall be maintained with a combination of planting, turf and hardscape areas such that the total area of non-pervious surfaces shall be 40% or less of the total front yard area.
2. For non-residential uses permitted pursuant to Table 15.17.020.A, all open parking areas (e.g. non-structured, non-garage) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and
 - b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscape with a total landscaped area equal to or greater than 5,000 square feet; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 5,000 square feet.
4. Landscaping and irrigation not subject to Chapter 15.50 shall be encouraged to:
 - a. Utilize resources which identify plants that are native to California or are otherwise appropriate for the region and that have moderate to very low water use following establishment;
 - b. Limit the use of turf to active areas; when turf is utilized, select a drought-tolerant variety;
 - c. Utilize decorative gravel or pebbles or mulch on ground plane, as appropriate for type of plants, to improve water holding capabilities;
 - d. Group plants of similar water requirements together to allow more effective use of irrigation; and
 - e. Design the irrigation system to utilize point irrigation systems (including micro-spray, bubbler, drip emitter, or sub-surface) for more efficient delivery of water to root systems and to minimize run off.

R-3 THROUGH R-5
REPLACE SECTION

15.17.070.G. Landscaping requirements:

1. All street and alley setbacks shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).
2. All open parking areas (e.g. non-structured, non-garage) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and
 - b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.
4. The governing documents of a common interest development (e.g. community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351) shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group or restricting compliance with a local water-efficient landscape ordinance or water conservation measure.

PRD
ADD SECTION

15.20.050.E. Landscaping requirements:

1. All public right-of-way setbacks shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).
2. All open parking areas (e.g. non-structured, non-garage) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area,

whichever is greater, shall be provided and distributed throughout the open parking area; and

- b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.
 4. The governing documents of a common interest development (e.g. community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351) shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group or restricting compliance with a local water-efficient landscape ordinance or water conservation measure.

SPD

ADD SECTION

15.21.060. Landscaping Requirements:

1. All public right-of-way setbacks shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).
2. All open parking areas (e.g. non-structured, non-garage) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and
 - b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped area where affected landscaped area is equal to or greater than 2,500 square feet.

4. The governing documents of a common interest development (e.g. community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351) shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group or restricting compliance with a local water-efficient landscape ordinance or water conservation measure.

OIL OVERLAY ZONE

REPLACE SECTION

15.22.110. Landscape Requirements:

1. Landscaping shall be provided around wells and be designed to screen from view the full height of the well equipment.
2. Landscaping shall be provided in front of walls and in related setback areas.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

PUBLIC LAND

ADD SECTION

15.25.050. Landscape Requirements:

1. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

COMMERCIAL

REPLACE SECTION

15.30.050.G. Landscape Requirements:

1. All street setbacks shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).
2. All open parking areas (e.g. non-structured) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and

- b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

COMMERCIAL GREENBELT

ADD SECTION

15.35.050.J. Landscape Requirements:

1. All street setbacks shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).
2. All open parking areas (e.g. non-structured) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and
 - b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

INDUSTRIAL

ADD SECTION; ELIMINATE 2nd SENTENCE IN 15.40.040.D

15.40.040.G. Landscape Requirements:

1. All street setbacks shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).
2. All open parking areas (e.g. non-structured) shall be landscaped such that:

- a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and
 - b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
- a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

DEVELOPMENT PROJECT

CHANGE REFERENCED CODE SECTION FROM 15.56.140 TO CHAPTER 15.50.
15.46.080.F.4

SITE PLAN

CHANGE REFERENCED CODE SECTION FROM 15.56.140 TO CHAPTER 15.50.
15.47.060.F.4

COMMERCIAL STABLE

REPLACE SECTION

15.55.030.C.2.g. Landscape Requirements:

1. Landscaping shall be provided along all property lines and in minimum dimension of 10 feet.
2. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

PARKING AREAS

ADD SECTION; ELIMINATE LAST SECTION OF 15.56.130.B.

15.56.130.D. Landscape Requirements:

1. All street setbacks as required by the underlying zoning classification shall be landscaped except for pedestrian and vehicular access ways, parking areas, or other non-irrigated areas designed for non-development (e.g. existing native vegetation).

2. All open parking areas (e.g. non-structured) shall be landscaped such that:
 - a. Planters with a total landscaped area equaling a minimum of 25 square feet per parking space, or 8% of the square footage of the open parking area, whichever is greater, shall be provided and distributed throughout the open parking area; and
 - b. Trees with a total shaded area (e.g. the area under the tree canopy or dripline 15 years after installation) equaling a minimum of 50% of the square footage of the open parking area shall be provided and distributed throughout the open parking area.
3. Landscaping and irrigation shall be provided for landscaped areas pursuant to Chapter 15.50 for the following:
 - a. Installation of new landscaped areas; or
 - b. Rehabilitation of existing landscaped areas where affected landscaped area is equal to or greater than 2,500 square feet.

SYNTHETIC TURF

REPLACE SECTION; CHANGE TITLE FROM LANDSCAPING AND IRRIGATION REQUIREMENTS TO SYNTHETIC TURF

15.56.140

- f. The use of artificial plants and surfaces painted to appear as plant material are prohibited in a landscaped area except as provided by this section.
- g. The use of synthetic turf on areas with a slope percentage greater than 5% shall not be permitted.
- h. Synthetic turf that complies with the following standards shall be permitted:
 1. Material
 - a. Synthetic turf shall:
 - i. Simulate the appearance of live turf, organic turf, grass, sod or lawn;
 - ii. Be of a type known as cut pile infill with pile fibers a minimum height of 1.75 inches;
 - iii. Be manufactured from polyethylene;
 - iv. Be affixed to a permeable backing;; and
 - v. Have a minimum 8-year "No Fade" warranty.
 - b. The use of indoor or outdoor plastic or nylon carpeting as a replacement for natural or synthetic turf shall be prohibited.

- c. A material other than polyethylene may be approved by the Director of Development Services if the product has been certified to meet applicable environmental and health regulations regarding lead content.

2. Installation

- a. Synthetic turf shall:
 - iv. Be installed by a licensed professional pursuant to manufacturer's requirements;
 - v. Be installed over a subgrade prepared to provide positive drainage and an evenly graded mass of compacted, porous crushed rock aggregate material;
 - vi. Be anchored at all edges and seams;
- b. A drainage system shall be installed underneath the turf to prevent excessive runoff or pooling;
- c. Where multiple panels are used, the change from one panel to the next shall not be readily visible and seams shall be joined in a tight and secure manner;
- d. An infill medium consisting of clean silica sand or other approved mixture shall be brushed into the fibers to ensure that the fibers remain in an upright position and to provide ballast that will help hold the turf in place and provide a cushioning effect.
- e. Areas of living plant material shall be installed or maintained in conjunction with the installation of synthetic turf when utilized in the front yard area or street, alley or other public right-of-way setback areas. Living plant material shall include shrubs, vines, trees and groundcovers in separate planter areas and tree wells.
- f. Synthetic turf shall be separated from planter areas and tree wells by a concrete mow strip, bender board, or other barrier with a minimum 3/8" thickness to prevent the intrusion of living plant material into the synthetic turf areas.
- g. Use of an irrigation system for non-active use turf shall be prohibited.
- h. An existing irrigation system that will not be utilized for the synthetic turf may remain, however, heads shall be removed and pipes shall be capped below ground.

3. Maintenance

- d. Synthetic turf shall be maintained in a green fadeless condition and free of weeds, debris, tears, holes, and impressions.
- e. The use of water to clean synthetic turf is discouraged.

4. Material Specifications and Plans

- a. Materials specifications and plans shall be provided to the Director of Development Services for review and approval prior to the installation of the synthetic turf.
- b. The submittal shall include:
 - i. A landscape plan showing the area of synthetic turf, area of living plant material, and separation material between these areas;
 - ii. A dimensioned cross section of proposed materials and installation details, including subgrade, drainage, base or leveling layer, and infill;
 - iii. Edge material and detail for treatment of seams; and
 - iv. Material description and specifications, including manufacturer, installer (with contact information), and warranty information.

LANDSCAPE MAINTENANCE REQUIREMENTS
ELIMINATE SECTION (INCLUDED IN 15.50)
15.56.150

City of Fullerton
ORDINANCE CERTIFICATION

STATE OF CALIFORNIA)
COUNTY OF ORANGE) SS
CITY OF FULLERTON)

ORDINANCE NO. 3134

I, Beverley White, City Clerk and ex-officio Clerk of the City Council of the City of Fullerton, California, hereby certifies that the whole number of the members of the City Council of the City of Fullerton is five; and that the above and foregoing Ordinance No. 3134 had first reading by title only, introduction, and further reading waived at the December 1, 2009 City Council regular meeting and was adopted at the December 15, 2009 City Council regular meeting by the following vote:

COUNCIL MEMBER AYES:	Bankhead, Keller, Jones, Nelson, Quirk-Silva
COUNCIL MEMBER NOES:	None
COUNCIL MEMBER ABSENT:	None



Beverley White, City Clerk

