



CITY OF
CARLSBAD

Planning Department

www.carlsbadca.gov

April 29, 2010

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

**RE: ADOPTION OF WATER EFFICIENT LANDSCAPE ORDINANCE – CITY OF
CARLSBAD – ZCA 10-01**

Dear Mr. Eching:

This letter is to inform you of the status for the City of Carlsbad, CA with regard to adoption of the Model Water Efficient Landscape Ordinance (MWELo) as required by Assembly Bill 1881.

The Carlsbad City Council approved and introduced a Water Efficient Landscape Ordinance (WELO) on April 27, 2010. The Carlsbad ordinance is based on the San Diego regional MWELo that was developed by the San Diego County Water Authority and stakeholders in the San Diego region. The Carlsbad ordinance includes findings that the WELO implements the Water Conservation in Landscaping Act and that the provisions of the ordinance are equivalent to and at least as effective in conserving water as the State MWELo.

The Carlsbad WELO is scheduled for adoption on May 11, 2010, and will become effective 30 days from its adoption (June 10, 2010). A copy of the approved ordinance is attached for your records. If you have any questions, please contact Barbara Kennedy, Associate Planner at 760-602-4626.

Sincerely,

DON NEU
Planning Director

DN:BK:sm

Attachment: City of Carlsbad Water Efficient Landscape Ordinance

c: Gary Barberio, Community and Economic Development Director
Dave de Cordova, Principal Planner
Ron Kemp, Deputy City Attorney
File



1 conditions, terrains, soil types, and other environmental conditions; (4) onsite soil assessment
2 and soil management plans that include grading and drainage to promote healthy plant growth
3 and prevent excessive erosion and runoff; and (5) the use of recycled water when it is available
4 and the use is otherwise consistent with State law; and

5 WHEREAS, this ordinance will increase water use efficiency by establishing
6 water budgets, promoting installation and maintenance of efficient irrigation systems and
7 encouraging use of plants that use water efficiently based on climate, soil type, and site features
8 and reduce water waste that occurs from irrigation runoff and overspray; and

9 WHEREAS; this ordinance is consistent with the findings and declarations the
10 State Legislature made when adopting the Water Conservation in Landscaping Act (2006); and

11 WHEREAS, adoption of the water efficient landscape ordinance is exempt under
12 the California Environmental Quality Act, Section 15307.

13 NOW, THEREFORE, the City Council of the City of Carlsbad, California, does
14 ordain as follows:

15 SECTION I: That Chapter 21.220 of the Carlsbad Municipal Code is repealed.

16 SECTION II: That Chapter 18.50 of the Carlsbad Municipal Code is added and
17 enacted as follows:

18 **Chapter 18.50**

19 **WATER EFFICIENT LANDSCAPE**

20 **Sections:**

21 **18.50.010 Purpose.**
22 **18.50.020 Findings.**
23 **18.50.030 Definitions.**
24 **18.50.040 Applicability.**
25 **18.50.050 Landscape approval.**
26 **18.50.060 Administration and Landscape Manual.**
27 **18.50.070 Landscape documentation package.**
28 **18.50.080 Soil management report.**
18.50.090 Planting and irrigation plans.
18.50.100 Water efficient landscape worksheet.
18.50.110 Grading design plan.
18.50.120 Irrigation schedule.
18.50.130 Maximum applied water use.
18.50.140 Estimated total water use.

- 1 18.50.150 Adjustment to landscaped area for non-vegetated area.
- 2 18.50.160 New single-family residential projects with limited landscaping.
- 3 18.50.170 Cemeteries.
- 4 18.50.180 Regulations applicable to use of turf on landscaped areas.
- 5 18.50.190 Projects with model homes.
- 6 18.50.200 Recycled water.
- 7 18.50.210 Landscaping and irrigation installation.
- 8 18.50.220 Landscaping and irrigation maintenance.
- 9 18.50.230 Certificate of completion.
- 10 18.50.240 Waste water prevention.
- 11 18.50.250 Enforcement.
- 12 18.50.260 Fees.

7
8 **18.50.010 Purpose.**

9 A. The State Legislature determined in the Water Conservation in Landscaping Act
10 (the "Act"), Government Code sections 65591 et seq., that the State's water resources are in
11 limited supply. The Legislature also recognized that while landscaping is essential to the quality
12 of life in California, landscape design, installation, maintenance and management must be water
13 efficient. The general purpose of this chapter is to establish water use standards for
14 landscaping in the City of Carlsbad that implement the 2006 development landscape design
15 requirements established by the Act. Consistent with the Legislature's findings, the purpose of
16 this ordinance is to:

- 17 1. Promote the values and benefits of landscapes while recognizing the need
18 to utilize water and other resources as efficiently as possible;
- 19 2. Establish a structure for planning, designing, installing, maintaining,
20 and managing water efficient landscapes in new construction;
- 21 3. Promote the use, when available, of treated recycled water, for irrigating
22 landscaping;
- 23 4. Use water efficiently without waste by setting a Maximum Applied Water
24 Allowance (MAWA) as an upper limit for water use and reduce water use for landscaping to the
25 lowest practical amount; and
- 26 5. Encourage water users of existing landscapes to use water efficiently and without
27 waste.

18 **18.50.020 Findings.**

19 A. This chapter implements the Water Conservation in Landscaping Act. The
20 requirements of this chapter reduce water use associated with irrigation of outdoor landscaping
21 by setting a maximum amount of water to be applied to landscaping and by designing, installing
22 and maintaining water efficient landscapes consistent with the water allowance. The provisions
23 of this ordinance are equivalent to and at least as effective as the provisions of the state Model
24 Water Efficient Landscape Ordinance because the calculation of MAWA and the resulting
25 restrictions on irrigation and process are similar, though tailored to the City of Carlsbad's
26 existing regulatory procedures.

23 **18.50.030 Definitions.**

24 A. Whenever the following terms are used in this chapter, they shall have the
25 meaning established by this section:

- 26 1. "Automatic irrigation controller" means an automatic timing device used to
27 remotely control valves that operate an irrigation system. Automatic irrigation controllers shall
28 schedule irrigation events using either evapotranspiration (ET_o) (weather-based) or moisture
29 sensor data.

1 2. "Building permit" means a permit to engage in a certain type of construction on a
specific location.

2 3. "Developer" means a person who seeks or receives permits for or who
undertakes land development activities' who is not a single family homeowner. Developer
3 includes a developer's partner, associate, employee, consultant, trustee or agent.

4 4. "Director" means the City of Carlsbad Planning Director or anyone to whom the
Director has designated or hired to administer or enforce this chapter.

5 5. "Discretionary permit" means any permit requiring a decision making body to
exercise judgment prior to its approval, conditional approval or denial.

6 6. "Estimated total water use" (ETWU) means the estimated total water use in
gallons per year for a landscaped area.

7 7. "ET adjustment factor" (ETAF) means a factor that when applied to reference
ETo, adjusts for plant water requirements and irrigation efficiency, two major influences on the
amount of water that is required for a healthy landscape.

8 8. "Evapotranspiration" (ETo) means the quantity of water evaporated from adjacent
soil and other surfaces and transpired by plants during a specified time period. "Reference
9 evapotranspiration" means a standard measurement of environmental parameters which affect
the water use of plants. ETo is given in inches per day, month, or year and is an estimate of the
10 ETo of a large field of four-inches to seven-inches tall, cool season turf that is well watered.
Reference ETo is used as the basis of determining the MAWA so that regional differences in
11 climate can be accommodated.

12 9. "Grading" means any excavation, fill, clearing and grubbing of vegetation, or any
combination thereof as defined by Calsbad Municipal Code Chapter 15.16.

13 10. "Graywater," as defined by the California Health and Safety Code Section
17922.12, means untreated wastewater that has not been contaminated by any toilet discharge,
14 has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not
present a threat from contamination by unhealthful processing, manufacturing, or operating
15 wastes. "Graywater" includes wastewater from bathtubs, showers, bathroom washbasins,
clothes washing machines, and laundry tubs, but does not include wastewater from kitchen
16 sinks or dishwashers.

17 11. "Hardscape" means any durable surface material, pervious or non-pervious.

18 12. "Homeowner-provided landscaping" means landscaping installed either by a
homeowner or a licensed contractor hired by a homeowner for a single-family residence.

19 13. "Hydrozone" means a portion of the landscape area having plants with similar
water needs. A hydrozone may be irrigated or non-irrigated.

20 14. "Invasive species" means species of plants not historically found in California
that spread outside cultivated areas and may damage environmental or economic resources.

21 15. "Irrigation efficiency" means the measurement of the amount of water beneficially
used divided by the water applied. Irrigation efficiency is derived from measurements and
22 estimates of irrigation system characteristics and management practices.

23 16. "Landscaped area" means an area with plants, turf and/or other vegetation. A
landscaped area includes a water feature either in an area with vegetation or that stands alone.
A landscaped area may also include design features adjacent to an area with vegetation when
24 allowed under Section 18.50.150. A landscaped area does not include the footprint of a
building, decks, patio, sidewalk, driveway, parking lot or other hardscape that does not meet the
25 criteria in Section 18.50.150. A landscaped area also does not include an area without irrigation
designated for non-development such as designated open space or area with existing native
vegetation.

26 17. "Landscape Manual" means the manual, approved by the Carlsbad City Council,
that establishes specific design criteria and guidance to implement the requirements of this
chapter.

27 18. "Licensed" means licensed by the State of California.

1 19. "Low head drainage" means a sprinkler head or other irrigation device
2 that continues to emit water after the water to the zone in which the device is located has shut
3 off.

4 20. "Low volume irrigation" means the application of irrigation water at low pressure
5 through a system of tubing or lateral lines and low volume emitters such as drip lines or
6 bubblers.

7 21. "Maximum Applied Water Allowance" (MAWA) means the maximum allowed
8 annual water use for a specific landscaped area based on the square footage of the area, the
9 ETAF and the reference ETo.

10 22. "Mulch" means an organic material such as leaves, bark, straw or inorganic
11 mineral materials such as rocks, gravel or decomposed granite left loose and applied to the soil
12 surface to reduce evaporation, suppress weeds, moderate soil temperature or prevent soil
13 erosion.

14 23. "Overspray" means the water from irrigation that is delivered outside an area
15 targeted for the irrigation and makes contact with a surface not intended to be irrigated.

16 24. "Pervious" means any surface or material that allows the passage of water
17 through the material and into underlying soil.

18 25. "Plant factor" means a factor when multiplied by the ETo, estimates the amount
19 of water a plant needs.

20 26. "Public water purveyor" means a public utility, municipal water district, municipal
21 irrigation district or municipality that delivers water to customers.

22 27. "Recycled water", sometimes referred to as reclaimed water, means water
23 obtained from the treatment of domestic water waste which is suitable for direct beneficial use
24 or a controlled use that otherwise would not occur and also meets the highest level in
25 conformance with California Code of Regulations, Title 22, Division 4, Chapter 3 (use of
26 recycled water for irrigation and for impoundments), currently section 60304 and section 60305.

27 28. "Runoff" means water that is not absorbed by the soil or landscape to which it is
28 applied and flows from the landscaped area.

29 29. "Special landscaped area" means an area of the landscape dedicated to edible
30 plants, an area irrigated with recycled water, or an area dedicated as turf area within a park,
31 sports field or golf course where turf provides a passive or active recreational surface.

32 30. "Subsurface irrigation" means an irrigation device with a delivery line and water
33 emitters installed below the soil surface that slowly and frequently emit small amounts of water
34 into the soil to irrigate plant roots.

35 31. "Transitional area" means a portion of a landscaped area that is adjacent to a
36 natural or undisturbed area and is designated to ensure that the natural area remains
37 unaffected by plantings and irrigation installed on the property.

38 32. "Turf" means a groundcover surface of mowed grass.

39 33. "Water feature" means a design element where open water performs an
40 aesthetic or recreational function. A water feature includes a pond, lake, waterfall, fountain,
41 artificial streams, spa and swimming pool. Constructed wetlands used for on-site wastewater
42 treatment or stormwater best management practices are not water features.

43 34. "WUCOLS III" means Water Use Classification of Landscape Species published
44 by the University of California Cooperative Extension and the Department of Water Resources,
45 August 2000, or the most recent version thereof.

46 **18.50.040 Applicability.**

47 A. This chapter shall apply to the following projects which require a building permit
48 or a discretionary permit:

1 1. A project for an industrial, commercial, institutional, or multi-family residential use
2 where the landscaped area is greater than or equal to 2,500 square feet.

3 2. Developer installed residential and common area landscapes where the total
4 landscaped area for the development is greater than or equal to 2,500 square feet.

3. A new single-family residence with homeowner provided landscaping where the landscaped area is greater than or equal to 5,000 square feet.
 4. A model home that includes a landscaped area.
 5. A public agency project that contains a landscaped area 2,500 square feet or more;
 6. A rehabilitated landscape for an existing industrial, commercial, institutional, public agency, or multifamily use where a building permit or discretionary permit is being issued and the applicant is installing or modifying 2,500 square feet or more of landscaping.
 7. A cemetery under limited requirements in Section 18.50.170.
 8. A new single-family residence with homeowner provided landscaping, where the landscape area is less than 5,000 square feet, under limited requirements in Section 18.50.160.
- B. This chapter shall not apply to the following:
1. A registered local, State or federal historical site.
 2. An ecological restoration project that does not require a permanent irrigation system.
 3. A mined land reclamation project that does not require a permanent irrigation system.
 4. A botanical garden or arboretum, open to the public.
 5. Any single-family residence that is being rebuilt after it was destroyed due to a natural disaster, such as a fire, earthquake, hurricane or tornado.

18.50.050 Landscape approval.

- A. No person shall install landscaping for a project subject to this chapter without the review and approval required by this chapter.
- B. A person constructing a project subject to the requirements of this chapter shall obtain approval for the landscaped area as follows:
 1. A person applying for a building permit for a single-family residence shall obtain an approval of the landscaping from the City of Carlsbad as part of the permitting process, unless exempt per Section 18.50.040.
 2. A person applying for a discretionary permit described in Section 18.50.040:
 - a. Shall submit a landscape concept plan as required by the discretionary permit application. The concept plan shall include all requirements as outlined in the landscape manual, including representation of the site features, proposed planting areas and the proposed method and type of irrigation.
 - b. Shall obtain approval for landscaping as part of the permitting process for each building permit for each project segment that requires installation of a water meter or connection to an existing water meter.
 - c. May use "typical" plans for Developer-installed landscaping for single-family homes.

18.50.060 Administration and Landscape Manual.

- A. The Planning Director shall administer this chapter.
- B. The Landscape Manual, adopted by resolution of the City Council of the City of Carlsbad on November 13, 1990, and as may be amended from time to time, is incorporated by reference into this chapter. Should any provision of the landscape manual conflict with any provision of this chapter, the provisions of this chapter shall take precedence.

18.50.070 Landscape documentation package.

- A. Except as provided in subsections B and C below, building permit applications for projects subject to Section 18.50.040 shall include a landscape documentation package that complies with the provisions of this chapter and with the Landscape Manual.

1 B. An applicant for a building permit for a single family residence with a landscaped
2 area less than 5,000 square feet is not required to submit a landscape documentation package
with the permit application, but shall comply with Section 18.50.160.

3 C. An applicant for a permit for a cemetery is not required to submit a landscape
documentation package, but shall comply with Section 18.50.170.

4 D. The landscape documentation package shall contain the following:

5 1. A soil management report and plan that complies with Section 18.50.080 that
analyzes the soil within each landscaped area of the project and makes recommendations
regarding soil additives.

6 2. Planting and irrigation plans that comply with Section 18.50.090 that describe the
landscaping and irrigation for the project.

7 3. A water efficient landscape worksheet that complies with Section 18.50.100 that
calculates the MAWA and the ETWU for the project.

8 4. A grading design plan that complies with Section 18.50.110 that describes the
grading of the project. If the project applicant has submitted a grading plan with the application
for the project, the Director may accept that grading plan in lieu of the grading design plan
required by this subsection if the grading plan complies with Section 18.50.110.

10 **18.50.080 Soil management report.**

11 A. The soil management report required by Section 18.50.070 shall be prepared by
a licensed landscape architect, licensed civil engineer, licensed architect, or other landscape
professional licensed by the state to do this work and shall contain the following information:

12 1. An analysis of the soil for the proposed landscaped areas of the project that
includes information about the soil texture, soil infiltration rate, pH, total soluble salts, sodium,
and percent organic matter; and

13 2. Recommendations about soil amendments that may be necessary to foster plant
growth and plant survival in the landscaped area using efficient irrigation techniques.

14 B. When a project involves mass grading of a site the applicant shall submit the soil
management report that complies with subsection A above with the certificate of completion
required by Section 18.50.230.

15 C. The soil management report shall include information regarding proposed soil
amendments and mulch:

16 1. The report shall identify the type and amount of mulch for each area where mulch
is applied. Mulch shall be used as follows:

17 a. A minimum two-inch layer of mulch shall be applied on all exposed soil surfaces
18 in each landscaped area except in turf areas, herbaceous ground covers or direct seeding
19 applications where mulch is contraindicated.

20 b. Stabilizing mulch shall be applied on slopes over 3:1.

21 c. The mulching portion of seed/mulch slurry in hydro-seeded applications shall
comply with subsection A above.

22 d. Highly flammable mulch material shall not be used.

23 2. The report shall identify any soil amendments and their type and quantity.

24 **18.50.090 Planting and irrigation plans.**

25 A. The planting and irrigation plans required by Section 18.50.070 shall be prepared
by a licensed landscape architect, licensed civil engineer, licensed architect, or other landscape
professional licensed by the state to do this work. The plans shall:

26 1. Include the MAWA for the plans, including the calculations used to determine the
MAWA. The calculations shall be based on the formula in Section 18.50.130.

27 2. Include the ETWU for the plans, including the calculations used to determine the
ETWU. The calculations shall be based on the formula in Section 18.50.140.

28 3. Include a statement signed under penalty of perjury by the person who prepared
the plan that provides, "I am familiar with the requirements for landscape and irrigation plans

1 contained in the City of Carlsbad's Water Efficient Landscape Regulations. I have prepared this
2 plan in compliance with those regulations and the landscape manual. I certify that the plan
implements those regulations to provide efficient use of water."

3 4. Demonstrate compliance with best management practices required by Municipal
Code Chapter 15.12, Storm Water Management and Discharge Control.

4 5. Address fire safety issues and demonstrate compliance with applicable
requirements for defensible space around buildings and structures and shall avoid the use of
fire prone vegetation.

5 B. The planting plan shall meet the following requirements:

6 1. The plan shall include a list of all vegetation by common and botanical plant
name, which exists in the proposed landscaped area. The plan shall state what vegetation will
be retained and what will be removed.

7 2. The plan shall include a list of all vegetation by common and botanical plant
8 name, which will be added to each landscaped area. No invasive species shall be added to a
landscaped area. The plan shall include the total quantities by container size and species. If
9 the applicant intends to plant seeds, the plan shall describe the seed mixes and applicable
purity and germination specifications.

10 3. The plan shall include a detailed description of each water feature that will be
included in the landscaped area.

11 4. The plan shall be accompanied by a drawing showing on a page or pages, the
specific location of all vegetation, retained or planted, the plant spacing and plant size, natural
12 features, water features, and hardscape areas. The drawing shall include a legend listing the
common and botanical plant name of each plant shown on the drawing.

13 5. All plants shall be grouped in hydrozones and the irrigation shall be designed to
14 deliver water to hydrozones based on the moisture requirements of the plant grouping. A
hydrozone may mix plants of moderate and low water use or mix plants of high water use with
15 plants of moderate water use. No high water use plants shall be allowed in a low water use
hydrozone. The plan shall also demonstrate how the plant groupings accomplish the most
efficient use of water.

16 6. The plan shall identify areas permanently and solely dedicated to edible plants.

17 7. The plan shall demonstrate that plants, when installed and at maturity, will be
18 positioned to avoid obstructing motorists' views of pedestrian crossings, driveways, roadways
and other vehicular travel ways. If the landscaping will require maintenance to avoid obstructing
motorist's views, the plan shall describe the maintenance and the frequency of the proposed
maintenance.

19 8. The plan shall avoid the use of plants with known surface root problems adjacent
to a paved area, unless the plan provides for installation of root control barriers or other
20 appropriate devices to control surface roots.

21 9. Plants in a transitional area shall consist of a combination of site adaptive and
compatible native and/or non-native species. No invasive species shall be introduced or
22 tolerated in a transitional area. The irrigation in a transitional area shall be designed so that no
overspray or runoff shall enter an adjacent area that is not irrigated.

23 10. On a project other than a single-family residence, the plan shall identify passive
and active recreational areas.

24 C. The Irrigation Plan shall meet the following requirements:

25 1. The plan shall show the location, type and size of all components of the irrigation
system that will provide water to the landscaped area, including the controller, water lines,
26 valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure
regulators, and backflow prevention devices.

27 2. The plan shall show the static water pressure at the point of connection to the
public water supply and the flow rate in gallons, the application rate in inches per hour and the
design operating pressure in pressure per square inch for each station.

1 3. The irrigation system shall be designed to prevent runoff, overspray, low-head
2 drainage and other similar conditions where irrigation water flows or sprays onto areas not
intended for irrigation. The plan shall also demonstrate how grading and drainage techniques
promote healthy plant growth and prevent erosion and runoff.

3 4. The plan shall identify each area irrigated with recycled water, graywater, and
4 other non-potable water.

5 5. The plan shall provide that any slope greater than 25 percent will be irrigated with
6 an irrigation system with a precipitation rate of 0.75 inches per hour or less to prevent runoff and
erosion. As used in this chapter, 25 percent grade means one foot of vertical elevation change
for every four feet of horizontal length. An applicant may employ an alternative design if the
plan demonstrates that no runoff or erosion will occur.

7 6. The plan shall provide that all wiring and piping under a paved area that a vehicle
8 may use, such as a parking area, driveway or roadway, will be installed inside a PVC conduit.

9 7. The plan shall provide that irrigation piping and irrigation devices that deliver
10 water, such as sprinkler heads, shall be installed below grade if they are within ten feet of a
vehicle or pedestrian use area. On-grade pipe is not allowed unless it is demonstrated to the
satisfaction of the Planning Director that the rocky condition of the slope would prevent
trenching. In cases where on-grade pipe is allowed it shall be the galvanized type or UVR
resistant PVC approved by the Planning Director.

11 8. The plan shall provide that only low volume or subsurface irrigation shall be used
12 to irrigate any vegetation within 24 inches of an impermeable surface unless the adjacent
impermeable surfaces are designed and constructed to cause water to drain entirely into a
landscaped area.

13 9. The irrigation system shall provide for the installation of a manual shutoff valve
14 as close as possible to the water supply. Additional manual shutoff valves shall be installed
between each zone of the irrigation system and the water supply.

15 10. The irrigation system shall provide that irrigation for any landscaped area will be
16 regulated by an automatic irrigation controller.

17 11. The irrigation system shall be designed with a landscape irrigation efficiency
18 necessary to meet the MAWA.

19 12. The plan shall describe each automatic irrigation controller the system uses to
20 regulate the irrigation schedule and whether it is a weather based system or soil moisture
21 detection system. The plan shall depict the location of electrical service for the automatic
22 irrigation controller or describe the use of batteries or solar power that will power valves or a
23 smart controller.

19 **18.50.100 Water efficient landscape worksheet.**

20 A. The water efficient landscape worksheet required by Section 18.50.070 shall be
21 prepared by a licensed landscape architect, licensed civil engineer, licensed architect, or other
landscape professional licensed by the state to do this work and shall contain the following:

22 1. A hydrozone information table that contains a list of each hydrozone in the
landscaped area of the project and complies with the following requirements:

23 a. For each hydrozone listed, the table shall identify the plant types and water
features in the hydrozone, the irrigation methods used, the square footage and the percentage
of the total landscaped area of the project that the hydrozone represents.

24 b. The plant types shall be categorized as turf, high water use, moderate water use
or low water use.

25 2. Water budget calculations, which shall meet the following requirements:

26 a. The plant factor used shall be from WUCOLS III. The plant factor shall be 0.1 for
27 very low water use plants 0.3 for low water use plants, 0.5 for moderate water use plants and
0.8 for high water use plants. A plan that mixes plants in a hydrozone that require a different
amount of water shall use the plant factor for the highest water using plant in the hydrozone.

1 .b. Temporarily irrigated areas shall be included in the low water use hydrozone.
2 Temporarily irrigated as used in this chapter means the period of time when plantings only
3 receive water until they become established.

4 c. The surface area of a water feature, including swimming pools, shall be included
5 in a high water use hydrozone.

6 d. The calculations shall use the formula for the MAWA in Section 18.50.130 and
7 for the ETWU in Section 18.50.140.

8 e. Each special landscaped area shall be identified on the worksheet and the area's
9 water use calculated using an ETAF of 1.0.

10 **18.50.110 Grading design plan.**

11 A. The grading design plan required by Section 18.50.070 shall be prepared by a
12 California licensed civil engineer, licensed landscape architect, licensed architect, or other
13 landscape professional licensed by the state to do this work and shall comply with following
14 requirements:

15 1. The grading on the project site shall be designed for the efficient use of water by
16 minimizing soil erosion, runoff and water waste, resulting from precipitation and irrigation.

17 2. Grading plans shall include site grading information including, but not limited to,
18 elevations, slope heights, drainage patterns, pad elevations, storm water management, and
19 finish grade.

20 3. Previously approved grading plans, "as built" grading plans, or grading plans
21 undergoing the grading permit approval process are acceptable submittals.

22 **18.50.120 Irrigation schedule.**

23 A. The irrigation schedule required by Section 18.50.230 shall be prepared by a
24 licensed landscape architect, licensed civil engineer, licensed architect, or other landscape
25 professional licensed by the state to do this work and provide the following information:

26 1. A description of the automatic irrigation system that will be used for the project.
27 2. The ETo data relied on to develop the irrigation schedule, including the source of
28 the data.

1 3. The time period when overhead irrigation will be scheduled and confirm that no
2 overhead irrigation shall be used between 10:00 a.m. and 6:00 p.m.

3 4. The parameters used for setting the irrigation system controller for watering times
4 for:

5 a. The plant establishment period.

6 b. Established landscaping.

7 c. Temporarily irrigated areas.

8 d. Different seasons during the year.

9 5. The consideration used for each station for the following factors:

10 a. The days between irrigation:

11 b. Station run time in minutes for each irrigation event, designed to avoid runoff.

12 c. Number of cycle starts required for each irrigation event, designed to avoid
13 runoff.

14 d. Amount of water to be applied on a monthly basis.

15 e. The root depth setting.

16 f. The plant type setting.

17 g. The soil type.

18 h. The slope factor.

19 i. The shade factor.

20 **18.50.130 Maximum applied water use.**

21 A. A landscape project subject to this chapter shall not exceed the MAWA. The
22 MAWA for a landscape project shall be determined by the following calculation:
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25
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1. $MAWA = (ET_o)(0.62)[(0.7 \times LA) + (0.3 \times SLA)]$
- B. The abbreviations used in the equation have the following meanings:
 1. MAWA = Maximum Applied Water Allowance in gallons per year.
 2. ET_o = Evapotranspiration in inches per year.
 3. 0.62 = Conversion factor to gallons per square foot.
 4. 0.7 = ET adjustment factor for plant factors and irrigation efficiency.
 5. LA = Landscaped area includes special landscaped area in square feet.
 6. 0.3 = the additional ET adjustment factor for a special landscaped area (1.0 - 0.7 = 0.3)
 7. SLA = Portion of the landscaped area identified as a special landscaped area in square feet.

18.50.140 Estimated total water use.

A. An applicant for a project subject to this chapter shall calculate the ETWU for each landscaped area and the entire project using the following equation:

1. $ETWU = (ET_o)(0.62)(PF \times HA / IE + SLA)$

B. The abbreviations used in the equation have the following meanings:

1. ETWU = Estimated total water use in gallons per year.
2. ET_o = Evapotranspiration in inches per year.
3. 0.62 = Conversion factor to gallons per square foot.
4. PF = Plant factor from WUCOLS III
5. HA = Hydrozone Area in square feet. Each HA shall be classified based upon the data included in the landscape and irrigation plan as high, medium or low water use.
6. IE = Irrigation Efficiency of the irrigation method used in the hydrozone.
7. SLA = Special landscaped area in square feet.
8. The ETWU for a proposed project shall not exceed the MAWA.

18.50.150 Adjustment to landscaped area for non-vegetated area.

A. Rock and stone or pervious design features, such as decomposed granite ground cover that are adjacent to a vegetated area may be included in the calculation of the MAWA and ETWU provided the features are integrated into the design of the landscape area and the primary purpose of the feature is decorative.

18.50.160 New single-family residential projects with limited landscaping.

A. An applicant for a building permit for a new single-family residence subject to this chapter where the landscaped area of the project is less than 5,000 square feet shall, as a condition of obtaining a building permit, submit an application to establish a MAWA and/or a best landscape design practices checklist for the property on the form approved by the Director.

18.50.170 Cemeteries.

- A. A person submitting an application for a cemetery shall include the following:
1. A concept plan, as described in Section 18.50.050;
 2. A water efficient irrigation worksheet that calculated the MAWA for the project with the application that complies with Section 18.50.100; and
 3. A landscaping and irrigation maintenance schedule that complies with Section 18.50.220.

18.50.180 Regulations applicable to use of turf on landscaped areas.

- A. The following regulations shall apply to the use of turf on a project subject to this chapter:
1. No turf shall be allowed:
 - a. On a slope greater than 25 percent grade;
 - b. Where any dimension of the landscaped area is less than six feet wide;

1 c. On a center island median strip or on a parking lot island within a commercial,
industrial, institutional, or multi-family project, and/or

2 d. In a landscaped area that cannot be efficiently irrigated, such as avoiding runoff
or overspray.

3 2. A ball field, park, golf course, cemetery and other similar use shall be designed to
4 limit turf in any portion of a landscaped area not essential for the operation of the facility.

5 **18.50.190 Projects with model homes.**

6 A. A person who obtains a permit to construct a single-family residential
7 development that contains a model home or homes shall provide a water efficient landscaping
8 brochure to each group of adults visiting the model home. At a minimum, each brochure shall
include information describing the water efficient features of the model's landscaping, resources
for additional information regarding water efficiency in landscaping, contact information for the
local water purveyor and planning department, and a reference to the requirements of this
chapter.

9 B. An educational sign shall be placed in the front yard of each model home so that
10 it is visible and readable from the roadway. The sign shall be white with black capital lettering at
least two inches high and shall state "THIS MODEL HOME USES WATER EFFICIENT
LANDSCAPING AND IRRIGATION".

11 **18.50.200 Recycled water.**

12 A. A person who obtains a permit for a project that is subject to this chapter shall
13 use recycled water for irrigation when recycled water is available from the water purveyor who
supplies water to the property for which the City of Carlsbad issues a permit.

14 B. A person using recycled water shall install a dual distribution system for water
received from a public water purveyor. Pipes carrying recycled water shall be purple.

15 C. A person who uses recycled water under this section shall be entitled to an ETAF
of 1.0.

16 D. This section does not excuse a person using recycled water from complying with
all State and local laws and regulations related to recycled water use.

17 **18.50.210 Landscaping and irrigation installation.**

18 A. A person issued a landscape approval for a project, other than a single-family
19 residence where the landscaped area of the project is less than 5,000 square feet, shall install
the approved landscaping and irrigation system before final inspection of the project.

20 **18.50.220 Landscaping and irrigation maintenance.**

21 A. A property owner using water on property subject to a landscape approval other
than a single-family residence with a total landscaped area less than 5,000 square feet, shall
prepare a maintenance schedule for the landscaping and irrigation system on the project. The
schedule shall provide for:

22 1. Routine inspection to guard against runoff and erosion and to detect plant or
irrigation system failure;

23 2. Replacement of dead, dying and diseased vegetation;

24 3. Eradication of invasive species;

25 4. Repairing the irrigation system and its components;

26 5. Replenishing mulch;

27 6. Addition of soil amendments when necessary to support and maintain healthy
plant growth;

28 7. Fertilizing, pruning and weeding and maintaining turf areas;

8. Maintenance to avoid obstruction of motorists' view; and

9. Identification of the entity who will be responsible for maintenance.

B. After approval of a landscape plan, the owner is required to:

- 1 .1. Maintain and operate the landscaping and irrigation system on the property
consistent with the MAWA;
- 2 2. Maintain the irrigation system to meet or exceed an irrigation efficiency
necessary to meet MAWA;
- 3 3. Replace broken or malfunctioning irrigation system components with components
of the same materials and specifications, their equivalent or better; and
- 4 4. Ensure that when vegetation is replaced, replacement plantings are
representative of the hydrozone in which the plants were removed and are typical of the water
5 use requirements of the plants removed, provided that the replaced vegetation does not result in
6 mixing high water use plants with low water use plants in the same hydrozone.

7 **18.50.230 Certificate of completion.**

8 A. Prior to receiving final approval for completion of the project, each applicant,
other than for a single family residence with a total landscaped area less than 5,000 square feet,
shall submit a signed certificate of completion and final documentation for the project under
penalty of perjury.

- 9 1. The certificate of completion shall:
 - 10 a. Be submitted on a form provided by the City of Carlsbad;
 - 11 b. Include a statement verifying that the landscaping and irrigation were installed as
allowed in the approved landscape and irrigation plan, all approved soil amendments were
12 implemented, the installed irrigation system is functioning as designed and approved, the
irrigation control system was properly programmed in accordance with the irrigation schedule,
and the person operating the system has received all required maintenance and irrigation plans;
and
 - 13 c. Be signed by the professional of record for the landscape design.
 - 14 2. The final submittal shall include:
 - 15 a. An irrigation schedule that complies with Section 18.50.120, that describes the
irrigation times and water usage for the project;
 - 16 b. A landscaping and irrigation system maintenance schedule that complies with
Section 18.50.220;
 - 17 c. A soil management report that complies with Section 18.50.080, if the applicant
did not submit the report with the landscape documentation package; and
 - 18 d. Final "as built" plans, submitted by the professional of record.

19 **18.50.240 Water waste prevention.**

20 A. No person shall use water for irrigation that due to runoff, low head drainage,
overspray or other similar condition, water flows onto adjacent property, non-irrigated areas,
structures, walkways, roadways or other paved areas.

21 B. No person whose landscape is subject to a landscape approval pursuant to this
chapter shall apply water to the landscape in excess of the MAWA.

22 **18.50.250 Enforcement.**

23 A. The City Manager, or designee, shall investigate and enforce instances of non-
compliance with the provisions of this chapter. Any city authorized personnel or enforcement
officer may exercise any enforcement powers as set forth in Chapters 1.08 and 1.10 of the
Carlsbad Municipal Code including, but not limited to, recording a notice of violation.

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

26 **18.50.260 Fees.**

27 A. An applicant for a project subject to this chapter shall include with the application,
all fees established by the City Council by resolution to cover the City's cost to review an
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PASSED AND ADOPTED at a regular meeting of the City Council of the City of
Carlsbad on the ____ day of _____ 2010, by the following vote, to wit:

- AYES:
- NOES:
- ABSENT:
- ABSTAIN:

APPROVED AS TO FORM AND LEGALITY

RONALD R. BALL, City Attorney

CLAUDE A. LEWIS, Mayor

ATTEST:

LORRAINE M. WOOD, City Clerk

(SEAL)

