City of Sonoma

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December 21, 2009

Simon Eching
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Subject: Compliance with AB 1881: Update to the State Water Efficient Landscape Ordinance (WELO)

Dear Mr. Eching:

The purpose of this letter is to notify the State as to how the City of Sonoma intends to come into compliance with AB 1881 and the new Chapter 2.7 of Division 2 of Title 23 of the California Code of Regulations: Model Water Efficient Landscape Ordinance.

The City of Sonoma currently has a water efficient landscape ordinance that has been in effect since 2001. The City is currently working in collaboration with other municipalities in Sonoma County to adopt a "regional" water efficient landscape ordinance that is at least as stringent as the State WELO and is also more suited to local conditions. A regional-based ordinance will make public outreach to contractors, landscape architects and other affected stakeholders easier and less confusing to the general public. Implementation and enforcement of a regional-based ordinance will also be more consistent among the municipalities in the county.

It is anticipated that the updated water efficient landscape ordinance will be presented to and adopted by the City of Sonoma's City Council in (approximately) April 2010. In the meanwhile, the City of Sonoma will continue to implement and enforce its current WELO. Attached is a copy of the Draft regional-based WELO (see Attachment A) for your information as well as a copy of its current WELO (see Attachment B) that will continue to be used in the interim period.

Please contact the City Water Conservation Coordinator, Kathy Toohey, at (707) 933-2208 should you have any questions or need further information.

Sincerely,

Toni Bertolero
City Engineer

cc: Linda Kelly, City Manager
Milenka Bates, Public Works Director
Kathy Toohey, Water Conservation Coordinator

Attachments

Attachment A

City of Santa Rosa
Water Efficient Landscape Ordinance

I. PURPOSE

Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use. This policy protects local water supplies through the implementation of a whole systems approach to design, construction, installation and maintenance of the landscape resulting in water conserving climate-appropriate landscapes, improved water quality and the minimization of natural resource inputs.

II. APPLICABILITY

1. After January 1, 2010, this ordinance shall apply to all of the following new and rehabilitated landscape projects that require a building or grading permit, plan check or design review:
   a. Commercial, industrial and institutional landscaping, park and greenbelt landscaping, multiple-family residential and single-family residential landscaping.
2. This ordinance does not apply to:
   a. Registered local, state or federal historical landscape area;
   b. Ecological restoration or mined-land reclamation projects that do not require a permanent irrigation system.

III. DEFINITIONS

1. *Backflow Prevention Device:* means an approved device installed to City standards which will prevent backflow or back-siphonage into the City potable water system.
2. *Booster Pumps:* used where the normal water system pressure is low and needs to be increased.
3. *Check Valve:* a valve located under a sprinkler head or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.
4. *Common Interest Development:* community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.
5. *Compost:* the decayed remains of organic matter that has rotted into a natural fertilizer.
6. *Ecological Restoration Project:* a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
7. *Effective Precipitation*: the portion of total precipitation which becomes available for plant growth and that is used by the plants.
8. *Emitter*: a drip irrigation fittings emission device that delivers water slowly from the system to the soil.
9. *ET Adjustment Factor*: a factor of 0.6, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

10. *Evapotranspiration rate*: the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific specified time.
11. *Flow Rate*: the rate at which water flows through pipes, and valves and emission devices, measured in (gallons per minute, gallons per hour, or cubic feet per second).
12. *Hardscapes:* any durable material (pervious and non-pervious).
13. *Head to Head Coverage*: full coverage from one sprinkler head to the next.
14. *High-Flow Sensor*: a device for sensing the rate of fluid flow.
15. *High-Water-Use Plants*: turf, annuals, container plantings, and other plants recognized as high-water-use by the *Water Use Classification of Landscape Species* document (http://www.owue.water.ca.gov/docs/wucols00.pdf), as it currently exists or maybe amended in the future.
16. *Hydrozone*: a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule.
17. *Infiltration Rate*: the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).
18. *Invasive Plant Species*: species of plants not historically found in California and/or that spread outside cultivated areas and can damage environmental or economic resources as determined by the California Invasive Plant Council (www.cal-ipc.org).
19. *Irrigation Efficiency (IE)*: the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this ordinance is 0.71.
20. *Irrigation Meter*: a separate meter that measures the amount of water used for items such as lawns, washing exterior surfaces, washing vehicles, filling pools, etc.
21. *Isolation Valves*: used to isolate a portion of the piping system.
22. *Landscaped Area*: the entire parcel less the building footprint, driveways, and non-irrigated portions of parking lots, hardscapes-such as decks and patios, and other non-porous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants, such as orchards or vegetable gardens are not included. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other nonirrigated areas designated for non-development (e.g., open spaces and existing native vegetation).
23. *Low-Water-Use Plants* : "Mediterranean Region" and native trees, shrubs and groundcovers (such as rosemary), juniper, most native oaks, and other plants recognized as low-water-use by the *Water Use Classification of Landscape Species* document (http://www.owue.water.ca.gov/docs/wucols00.pdf), as it currently exists or maybe amended in the future.
24. *Main Line*: the pressurized pipeline that delivers water from the water source to the valve or outlet.
25. *Maximum Applied Water Allowance (MAWA)*: for design purposes, the upper limit of annual applied water for the established landscaped.
26. *Microclimate*: the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density or proximity to reflective surfaces.

27. *Mined-Land Reclamation Projects*: any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.
28. *Moderate Water Use Plants*: ornamental trees, shrubs ground covers, and perennials and other plants recognized as high-water-use by the *Water Use Classification of Landscape Species* document (http://www.owue.water.ca.gov/docs/wucols00.pdf), as it currently exists or maybe amended in the future.
29. *Mulch*: any organic material such as leaves, bark, straw, compost or other inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature and preventing soil erosion.
30. *Low-Head Drainage*: water that flows out of the system after the valve turns off due to elevation changes within the system.
31. *Operating Pressure*: the pressure at which the parts of an irrigation a system of sprinklers is are designed by the manufacturer to operate, usually indicated at the base of a sprinkler.
32. *Overhead Irrigation*: those systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).
33. *Overspray*: the irrigation water which is delivered beyond the landscaped target area; wetting pavements, walks structures, or other non-landscaped areas.
34. *Pervious*: any surface or material that allows the passage of water through the material and into the underlying soil.
35. *Plant Factor*: a factor that, when multiplied by reference evapotranspiration ETo, estimates the amount of water used by needed plants. Plant factors cited in this ordinance are derived from the Department of Water Resources 2000 publication "*Water Use Classification of Landscape Species.*"
36. *Precipitation Rate*: the rate of application of water measured in inches per hour.
37. *Point of Connection*: the point at which an irrigation system taps into the main water supply line.
38. *Point Source Irrigation*: any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
39. *Pressure Regulation*: a valve that automatically reduces the pressure in a pipe.
40. *Project Applicant*: the individual or entity submitting a Landscape Documentation Package, to request a permit, plan check or design review from the local agency. A project applicant may be the property owner or his or her designee.
41. *Rain Sensor*: a system component which automatically shuts off and suspends the irrigation system when it rains.
42. *Recreational Area*: areas dedicated to active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic parks, sports fields and golf courses where turf provides a playing surface.
43. *Recycled Water*: means tertiary treated water which results from the treatment of wastewater, is suitable for direct beneficial use, and conforms to the definition of disinfected tertiary recycled water in accordance with state law.
44. *Reference Evapotranspiration or ETo:* a standard measurement of environmental parameters which affect the water use of plants and is an estimate of the

evapotranspiration of a large field of four to seven-inch tall, cool-season grass that is well watered.

45. *Rehabilitated Landscape*: any re-landscaping project that requires a building or grading permit, plan check or design review.
46. *Runoff:* water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area.
47. *Soils Laboratory Report*: the analysis of a soil sample to determine nutrient content, composition and other characteristics, including contaminants.
48. *Special Landscape Area (SLA):* an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.
49. *Sprinkler Head*: a device which sprays delivers water through a nozzle.
50. *Static Water Pressure*: the pipeline or municipal water supply pressure when water is not flowing.
51. *Station*: an area served by one valve or by a set of valves that operate simultaneously.
52. *Swing Joint*: an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.
53. *Valve*: a device used to control the flow of water in the irrigation system.
54. *Valve Manifold*: a one-piece manifold for use in a sprinkler valve assembly that includes an intake pipe having a water inlet and a plurality of ports adapted for fluid connection to inlets.
55. *Water Feature*: a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area.
56. *Weather Based or Sensor Based Irrigation Control Technology*: uses local weather and landscape conditions to tailor irrigation schedules to actual conditions on the site or historical weather data.
57. *WUCOLS:* the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.

IV. LANDSCAPE DESIGN PLAN

Amendments, Mulching and Soil Conditioning

1. A minimum of 8" of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.
2. Incorporate compost or natural fertilizer into the soil to a minimum depth of 8" at a minimum rate of 6 cubic yards per 1000 square feet or per specific amendment recommendations from a soils laboratory report.
3. A minimum 3" layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications.

Plants

1. Selected plants shall not cause the Estimate Water Use to exceed the Maximum Applied Water Allowance (see calculation in Appendix A)
2. Plants with similar water use needs shall be grouped together in distinct hydrozones and where irrigation is required the distinct hydrozones shall be irrigated with separate valves.
   a. Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.
   b. High water use plants shall not be mixed with low or moderate water use plants.
3. All non-turf plants shall be selected, spaced and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.
4. Turf shall not be planted in the following conditions:
   a. Slopes exceeding 10%
   b. Planting areas 8 feet wide or less
   c. Street medians, traffic islands, planter strips or bulbouts of any size
5. Invasive plants as listed by the California Invasive Plant Council are prohibited.

Water Features

1. Recirculating water systems shall be used for water features.
2. Recycled water shall be used when available onsite.

V. IRRIGATION DESIGN PLAN

Irrigation system must be designed and installed to meet irrigation efficiency criteria as described in MAWA

1. Dedicated irrigation meter or submeter must be specified
2. Irrigation systems with meters 1 ½" or greater require a high-flow sensor that can detect high flow conditions and have the capabilities to shut off the system.
3. Isolation valves shall be installed at the point of connection and before each valve or valve manifold
4. Weather-based or other sensor based self-adjusting irrigation controllers shall be required
5. Rain sensors shall be installed for each irrigation controller
6. Pressure regulation and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure
7. Irrigation system shall be designed to prevent runoff or overspray onto non-targeted areas
8. Point source irrigation is required where plant height at maturity will affect the uniformity of an overhead system
9. 24" setback of overhead irrigation is required where turf is directly adjacent to a continuous hardscape that flows into the curb and gutter
10. Slopes greater than 15% shall be irrigated with point source or other low-volume irrigation technology
11. A single valve shall not irrigate hydrozones that mix high water use plants with moderate or low water use plants
12. Trees shall be placed on separate valves except when planted in turf areas
13. Sprinkler heads, rotors and other emission devices on a valve shall have matched precipitation rates

14. Head to head coverage is required unless otherwise directed by the manufacturer's specifications
15. Swing joints or other riser protection components are required on all risers
16. Check vales shall be installed to prevent low-head drainage

VI. DOCUMENTATION FOR COMPLIANCE

The following documentation is to be presented to the City at each of the three steps of review defined below. This documentation is required for compliance with this policy.

STEP 1: FINAL DESIGN REVIEW

The following shall be submitted with a design review application or with a conditional use permit application when involving design review or when required to apply for a Utilities Certificate:

a. The landscape planting design plan that accurately and clearly identifies and depicts:
   - new and existing trees, shrubs, groundcovers, turf, and any other planting areas;
   - plants by botanical name and common name;
   - plant sizes and quantities;
   - property lines, new and existing building footprints, streets, driveways, sidewalks and other hardscape features;
   - pools, fountains, water features,

b. A conceptual irrigation design plan or statement which describes irrigation methods and design actions that will be employed to meet the irrigation specifications of this policy.

STEP 2: BUILDING PERMIT/PLAN CHECK

The following shall be reviewed and approved prior to a building permit being issued:

a. The planting design as submitted at step 1.
b. The irrigation plan drawn at the same scale as the planting plan that:
   - Accurately and clearly identifies and depicts irrigation system point of connection;
   - Accurately and clearly identifies and depicts irrigation system components, e.g. controller, pipe, remote-control valves, sprinklers and other application devices, rain shut-off device, check valves, pressure regulating devices, backflow prevention devices.
   - Includes the Hydrozone Table (See Appendix B)
c. Where slopes exceed 10%, a grading plan drawn at the same scale as the planting plan that accurately and clearly identifies finished grades, drainage patterns, pad elevations, spot elevations and storm water retention improvements. The grading design plan shall contain the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan" and shall bear the signature of a licensed professional as authorized by law.

STEP 3: COMPLETION OF INSTALLATION

Upon installation and completion of the landscape the Certificate of Completion (see Appendix C) must be submitted.

a. The certificate must be accompanied by an irrigation audit that contains the following:
    - Operating pressure of the irrigation system
    - Distribution uniformity of overhead irrigation
    - Precipitation rate of overhead irrigation
    - Report of any overspray or broken irrigation equipment
    - Irrigation schedule including:
        - Plant establishment irrigation schedule
        - Regular irrigation schedule by month including: plant type, root depth, soil type, slope factor, shade factor, irrigation interval (days per week), irrigation runtimes, number of start times per irrigation day, gallons per minute for each valve, precipitation rate, distribution uniformity and monthly estimated water use calculations.

b. An irrigation maintenance schedule timeline must be attached to the certificate of completion that includes:
    - Routine inspections, adjustment and repairs to the irrigation system, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning and weeding.

c. A final inspection shall be performed by City staff to verify policy compliance. Advanced notice is required for all inspections. Inspections can be requested for either morning or afternoon during regular business hours. Specific times of the day cannot be scheduled. Building permit final approval shall not be completed until the landscape inspection is approved. An extension of the building permit to complete landscape and irrigation installation shall be requested and must be approved by the Chief Building Official prior to occupancy.

VII. OTHER PROVISIONS

1. The Director of Utilities will consider and may allow the substitution of design alternatives and innovation which may equally reduce water consumption for any of these requirements.

2. The Director of Utilities will accept documentation methods, water allowance determination, and landscape and irrigation design requirements of the State of California Model Water Efficient Landscape Ordinance instead of sections II thru VI of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.

VIII. PROVISIONS FOR APPEAL

The applicant or any affected person may appeal the final decision of staff regarding plan check or final inspection to the Director of Utilities, or a final decision of the Director of Utilities to the Board of Public Utilities by filing a written notice of appeal within ten City working days of the date of the decision. The decision of the Board of Public Utilities shall be final and may not be appealed to the City Council. An appeal regarding plan check must be submitted prior to the installation of the landscape.

Appendix A

Maximum Applied Water Allowance

The following calculations will help you determine your site specific water budget and establish a planting mix that will allow you to meet your water budget. Your Estimated Total Water Use must be less than your Maximum Applied Water Allowance..

1.) Maximum Applied Water Allowance (MAWA)

MAWA = (ETo) (0.62)[(0.6x LA) + (0.4 x SLA)]

Where:
ETo = Annual Net Reference Evapotranspiration (inches)
0.6 = ET Adjustment Factor
LA = Landscaped Area (square feet)
0.62 = Conversion factor (to gallons per square foot)
SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
0.4 = the additional ET adjustment factor for Special Landscape Area (1.0 - 0.6 = 0.4)

A.) Net Evapotranspiration Calculation

(Annual ETo)

(Annual Rainfall) x .25 = (Effective Rainfall)

Net Evapotranspiration Calculation = Annual ETo - Effective Rainfall =

B.) Adjusted Landscape Area Calculation

(Landscaped Area) x 0.6 Adjustment Factor =

(Special Landscaped Area) x 0.4 Adjustment Factor =

Sum of Adjusted Landscape Area =

MAWA = x 0.62 x =

2.) Estimated Total Water Use (ETWU)

A.) Net Evapotranspiration Calculation

Net Evapotranspiration Calculation = Annual ETo - Effective Rainfall =

B.) Adjusted Landscape Area Calculation

(Low water use plant sqft) x 0.3 =

(Moderate water use plant sqft) x 0.6 =

(High water use plant sqft) x 1.0 =

Sum of Adjusted Landscape Area =

ETWU = x 0.62 x 0 =

Irrigation Efficiency Factor		
Percent of total landscape Irrigated with Drip		
0-25%		0.71
26-50%		0.75
51-75%		0.80
76-100%		0.85

Appendix B
Hydrozone Table

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package. Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
	Total			**100%**

***Hydrozone**
HW= High Water Use Plants
MW=Moderate Water Use Plants
LW=Low Water Use Plants

****Irrigation Method**
MS=Micro-spray
S=Spray
R=Rotor
B=Bubbler
D=Drip
O=Other

Appendix C
Certificate of Completion

This certificate is filled out by the project applicant, landscape architect and landscape contractor upon completion of the landscape project.

Part 1. Project Information Sheet

Date		
Project Name	Project Address	
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature Date

Part 2. Landscape Architect and Landscape Contractor/Installer

Landscape Architect Name	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.	Telephone No.	
Company	Street Address	
City	State	Zip Code

Landscape Contractor/Installer Name	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.	Telephone No.	
Company	Street Address	
City	State	Zip Code

"I/we certify that the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package. Additionally, per section VI of this ordinance, a landscape audit and irrigation maintenance schedule have been completed and are attached to this certificate showing that the system meets the efficiency requirements used in the Maximum Applied Water Allowance calculation"

Landscape Architect Signature Date

Landscape Contractor Signature Date

Attachment B

Chapter 14.32
WATER-EFFICIENT LANDSCAPING*

Skip Chapter Digest

Sections:

14.32.010 Purpose.

14.32.020 Definitions.

14.32.030 Applicability.

14.32.040 Landscape plans required.

14.32.050 Landscaping design standards and guidelines.

14.32.060 Plant material and installation standards and guidelines.

14.32.070 Irrigation design standards and guidelines.

14.32.080 Building permit and inspection requirements.

14.32.090 Maintenance standards and guidelines for cultivated landscape areas.

14.32.100 Requirement for separate water meters.

*Prior legislation: Ord. 92-25.

14.32.010 Purpose.

Water is a limited and precious resource. The purpose of this chapter is to assist the city in achieving water conservation through proper plant selection, installation, and maintenance practices. The following xeriscape principles serve as the primary means of achieving water conservation:

A. Appropriate planning and design;

B. Limiting turf to locations where it provides functional benefits;

C. Efficient irrigation systems;

D. The use of soil amendments to improve the structural characteristics of the soil;

E. The use of mulches, where appropriate;

F. The use of drought-tolerant plants; and

G. Appropriate and timely maintenance. (Ord. 2001-10 § 2, 2001).

14.32.020 Definitions.

"Annual water budget (AWB)" means the maximum amount of water per year permitted to be used to irrigate the applicable portion of a project site. The AWB is determined by a calculation outlined in SMC 14.32.070.

"Cultivated landscape area" means planted areas that are frequently maintained by mowing, irrigating, pruning, fertilizing, etc.

"Development" means any proposed material change in the use or character or the land, including, but not limited to, land clearing or the placement of any structure or site improvements on the land.

"Ground cover" means plants, other than turf grass, normally reaching an average maximum height of not more than 24 inches at maturity.

"Hydrozone" means an area of landscaping having a consistent water use requirement and served with a single irrigation valve zone.

"Irrigation system" means a permanent, artificial watering system designed to transport and distribute water to plants.

"Landscaping" means any combination of living plants (such as grass, ground cover, shrubs, vines, hedges, or trees) and nonliving hardscape materials or elements (such as rocks, pebbles, sand, mulch, walls, fences decks, patios, or decorative paving materials).

"Mulch" means nonliving organic and synthetic materials customarily used in landscape design to retard erosion, retain moisture, and reduce weed growth.

"Open space" shall be interpreted to mean:

1. All areas of natural plant communities or areas replanted with vegetation after construction, such as revegetated natural areas; tree, shrub, hedge or ground cover planting areas; and lawns; and

2. Other areas allowed to be counted as open space as per the city of Sonoma zoning ordinance.

"Replacement landscaping" means the replacement of 50 percent or more of an existing land-scaped area (or combination of areas on a single parcel) having a minimum size of 1,000 square feet with new landscape materials that substantially differ in type, size, or water consumption.

"Shrub" means a self-supporting woody perennial plant of low to medium height characterized by multiple stems and branches continuous from the base, usually not more than 10 feet in height at its maturity.

"Site specific planting" means the selection of plant material that is particularly well suited to withstand the physical growing conditions that are normal for that location.

"Tree" means any self-supporting woody perennial plant which has a DBH (diameter at breast height) of two inches or more and which normally attains an overall height of at least 15 feet at maturity, usually with one main stem or trunk and many branches. It may appear to have several stems or trunks as in several varieties of oak.

"Vegetation, native" means any plant species with a geographic distribution indigenous to all or part of Sonoma County. (Plant species which have been introduced by man are not native vegetation.)

"Yard, front" means a front or street-side yard as defined in SMC Title 19.

"Yard, private" means a yard area, not otherwise defined as a front or street-side yard, associated with a single residential unit and intended for the private use of a household.

"Xeriscape" means landscaping methods that conserve water through the use of drought-tolerant plants and planting techniques, as well as the design of irrigation systems. (Ord. 03-3008 § 1, 2008; Ord. 2001-10 § 2, 2001).

14.32.030 Applicability.

The provisions of this chapter apply as follows:

A. New Development. This chapter applies to all new projects for which landscaping is proposed that are subject to use permit review, design review, or issuance of a building permit except as exempted under subsections B, C, D, and E of this section. Applicable projects include: landscaping associated with new commercial, institutional, and mixed use development, common areas and developer-installed landscaping associated with new

multifamily development, front yards and common areas associated with new residential planned unit developments, and common areas and developer-installed front yard and street-side yard landscaping associated with single-family development.

B. Replacement Landscaping. This chapter applies to replacement landscaping, as defined in this chapter, proposed for existing commercial, mixed use, and multifamily development. It also applies to replacement landscaping associated with single-family residences previously subject to the review requirements of this chapter.

C. Residential Exemptions. This chapter does not apply to private yard areas within single-family and multifamily developments. Except as provided in subsection B of this section, additions to or the remodeling of single-family homes, and duplexes developed on existing lots are also exempt from the provisions of this chapter. Landscape designers are encouraged to follow the provisions of this chapter, regardless of this exemption.

D. Discretionary Exemptions. Schools, parks, playgrounds, common use areas in multifamily residential developments (e.g., play areas and turf areas intended for passive or active recreational use), sports fields, registered historical sites, and cemeteries may be exempted from the water budget requirements set forth in SMC 14.32.070, subject to approval of the design review commission.

E. Agricultural Exemption. This chapter does not apply to areas devoted to agricultural cultivation.

F. Wells. The presence of a well on site shall not be considered grounds for exempting a project that is subject to the provisions of this chapter from any of its requirements. (Ord. 03-2008 § 2, 2008; Ord. 2001-10 § 2, 2001).

14.32.040 Landscape plans required.

A. General. Prior to the issuance of any building permit for projects subject to this chapter, the necessary landscape plans shall be submitted to, reviewed by, and approved by the design review commission.

B. Nature of Required Plans. Landscape plans for each lot or project shall be prepared by a landscape architect, a certified irrigation consultant, or a licensed contractor with certification from the irrigation association.

C. Contents of Landscape Plans. Landscape plans shall include the following items:

1. A written summary statement addressing compliance with applicable provisions of this chapter.

2. A planting plan, drawn to scale, setting forth the following items, as applicable to the project:

a. All landscape features, including areas of vegetation to be preserved, in context with property lines and street names.

b. The location and outline of existing and proposed buildings, and other improvements (fences, utilities, paved areas, etc.) on the site, if any.

c. Existing and proposed parking spaces, other vehicular areas, access aisles, driveways, and similar features.

d. All plant materials, designated by name and location, to be installed, preserved, or removed.

e. The boundaries of each hydrozone.

f. A legend including the botanical name, common name, container size, spacing if applicable, and quantities of all plant material to be installed.

g. Existing trees to be preserved or removed, labeled by name and size.

h. The location and characteristics of all other landscape materials to be used.

3. A tabulation clearly displaying the relevant statistical information necessary for the design review commission to evaluate compliance with the provisions of this chapter, which at a minimum shall include the following:

a. The gross landscape area in square feet, square footage of paved areas, and the number of trees to be planted and/or preserved;

b. The annual water budget allowed for the project area, calculated in accordance with SMC 14.32.070(B), and a tabulated estimate of the amount of water use per year (in CCF units) necessary for long-term maintenance based on estimated water needs following the establishment of the landscaping. This estimate shall be prepared in accordance with the landscape coefficient method described in the most recent edition of the Water Use Classification of Landscape Species (WUCOLS) guide (available from the California Department of Water Resources) and shall document estimated water use for each hydrozone based on water use by plant type, planting density, and microclimate;

c. Other such information that may be required by the design review commission that is reasonable and necessary to determine that the landscape plan meets the requirements of this chapter. (Ord. 03-2008 § 3, 2008; Ord. 2001-10 § 2, 2001).

14.32.050 Landscaping design standards and guidelines.

A. Site Development Concepts for Water Conservation. The following site development concepts are recommended in order to promote water conservation:

1. The preservation of existing plant communities.

2. The re-establishment of native plant communities.

3. Limited amount of lawn grass areas.

4. The use of site-specific and drought-tolerant plant materials.

5. Site development that retains storm water runoff on site.

6. The use of pervious paving materials.

B. Use of Site-Specific and Adapted Planting Materials. Plants used in the landscape design shall to the greatest extent feasible:

1. Be appropriate to the conditions in which they are to be planted.

2. Encourage low maintenance, high-quality design.

3. Be otherwise consistent with the intent of this chapter.

The use of plant materials adapted to the local microclimate is encouraged in order to reduce water consumption, general maintenance, and dependence on fertilizers and insecticides.

C. Lawn Grass (Turf) Areas.

1. General. A major portion of water demand used for landscape purposes is required for the irrigation of lawn areas. Portions of landscaped areas that have been customarily designed as lawns should be:

a. Preserved as native plant communities;

b. Planted as redeveloped native or locally-adapted drought tolerant areas; and/or

c. Planted in mixes of trees, shrubs, and ground covers at a low density.

Properly managed nongrass landscape developments of site-specific plantings will typically be able to survive on a reduced water requirement and survive drought conditions better than lawn areas.

2. Selection of Grass Species. Only drought-tolerant turf varieties suitable to the local climate shall be used.

3. Slope Limitation. Lawn grass shall not be planted on slopes that exceed 10 percent, unless otherwise authorized by the design review commission to address special

situations (e.g., berms and erosion control). (Ord. 03-2008 § 3, 2008; Ord. 2001-10 § 2, 2001).

14.32.060 Plant material and installation standards and guidelines.

A. Amendment of Planting Soil. Prior to the installation of plant materials, a soils report shall be prepared and soils within areas to be landscaped shall be amended in accordance with its findings.

B. Use of Organic Mulches. The use of organic mulches reduces the growth of weeds and adds nutrients to the soil as well as retains moisture over the root zones of plant materials. The following minimum standards may be modified subject to the approval of the design review commission in the course of its review of a landscaping plan:

1. Application Specifications. A minimum of two inches of organic mulch shall be placed over all newly installed tree, shrub and ground cover planting areas, unless otherwise approved by the design review commission. No impervious materials shall be used under the mulch.

2. Requirements for the Installation of Organic Mulch. The required mulch layer shall be installed on all landscape projects. (Ord. 03-2008 § 3, 2008; Ord. 2001-10 § 2, 2001).

14.32.070 Irrigation design standards and guidelines.

A. Irrigation Systems Required. Landscaped areas shall be irrigated by the use of an automatic irrigation system with controllers set to apply water as noted in this section. High-water and low-water use areas shall be separately circuited as noted below. Rainfall sensing devices shall be required in order to avoid operation of the system during periods of increased rainfall.

B. Annual Water Budget. The irrigation system shall use an amount of water less than or equal to the allowable annual water budget for each applicable project area. The allowable annual water budget shall be determined by multiplying the total square footage of planting area by .0196. This results in the number of units of 1,000 gallons allowed per year within the planting area. (Water is metered and sold in Sonoma in 1,000 gallon units.) The above multiplier was arrived by the following formula:

AWB = ETo x .75 x PA x .000623, where:

AWB = Annual water budget, also known as maximum water allowance

ETo = Annual reference evapotranspiration in inches for Sonoma (42)

.75 = Local ET adjustment factor

PA = Total planting area in square feet

.000623 ≐ Conversion factor into 1,000 gallons per square foot

C. Zoning and Scheduling of Irrigation Systems. Water-efficient landscaping is best accomplished by the use of hydrozones in planting and irrigation design. Therefore, the following standards shall be considered the minimum requirements for landscape irrigation design within the city of Sonoma.

1. Sprinkler Zoning. Irrigation fixtures shall be separately circuited in conformance with the hydrozones defined on the landscaping plan.

2. Control Systems. Automatically controlled irrigation systems shall be operated by an irrigation controller that is able to irrigate high-water-requirement areas, such as turf, on a different schedule from low-water-requirement areas. The controller shall be rescheduled as necessary and required to respond to a change of seasons and water demand, as well as the change from an establishment period for a newly-installed landscape to a long-term maintenance schedule.

D. Irrigation System Design Guidelines. Landscape irrigation systems should incorporate the following design principles in order to maximize efficiency and reduce maintenance needs:

1. Impervious areas. Sprinkler heads shall be selected and located to avoid direct overthrow onto impervious areas.

2. Wind control. The use of low-trajectory spray nozzles is encouraged in order to reduce the effect of wind velocity on the spray system.

3. Matched precipitation sprinklers. Sprinklers with matched precipitation rates will help ensure uniformity in water application.

4. Low precipitation sprinklers. The use of low-precipitation sprinklers can help match water application to soil infiltration rates and reduce run-off.

5. Check valves. The use of check valves prevents the problem of water drainage from low elevation sprinkler heads and help avoid problems caused by the introduction of air into the irrigation lines.

6. Master valve and excess flow sensing devices. These features help prevent water loss from malfunctioning valves or broken irrigation lines.

7. Slopes. Irrigation design should take slopes into consideration in order to avoid run-off. (Ord. 2001-10 § 2, 2001).

14.32.080 Building permit and inspection requirements.

A. Building Permit Required. A building permit shall be required for landscaping plans developed pursuant to this chapter. The building permit plans shall include the landscaping plan as approved by the design review commission and an irrigation plan that includes the following:

1. The location, types, and sizes of all components of the irrigation system, including electronic controllers, main lateral lines, valves, application devices, rain shut off and moisture sensors, backflow preventers, etc.

2. The plan shall distinguish each irrigation circuit (or zone), and show valve size, flow rate in gallons per minute, and sprinkler precipitation rates.

B. Occupancy Permit Requirements. Once landscaping subject to the provisions of this chapter has been installed, the issuance of an occupancy permit shall be contingent upon the following:

1. An inspection performed by planning staff to review the landscaping for conformance with the approved plans.

2. The submittal of a completion certificate (on a form provided by the planning division), signed by the landscape designer, verifying compliance with the provisions of this chapter. (Ord. 03-2008 § 3, 2008; Ord. 2001-10 § 2, 2001).

14.32.090 Maintenance standards and guidelines for cultivated landscape areas.

A. General. The owner or assignee of land subject to this chapter shall be responsible for the maintenance of said land in good condition so as to present a healthy, neat, and orderly landscape area.

B. Replacement Requirements. Vegetation that is required to be planted or preserved by this chapter shall be replaced with equivalent vegetation if it is not living within one year of issuance of a certificate of occupancy.

C. Requirement for On-Going Maintenance. The required mulch layer shall be maintained on all landscape projects. Landscaped areas subject to the provisions of this chapter shall be maintained in a healthy, pest-free condition.

D. Watering.

1. General. All watering of planted areas shall be managed so as to conserve water and maintain healthy flora.

2. Operation of Irrigation Systems. Following the establishment of a landscape area, overhead irrigation systems shall be operated between the hours of 7:00 p.m. and 7:00 a.m.

3. Maintenance of Irrigation Systems. Irrigation systems shall be maintained as necessary to eliminate waste of water due to loss of heads, broken pipes, or misadjusted nozzles. (Ord. 2001-10 § 2, 2001).

14.32.100 Requirement for separate water meters.

In all new commercial development subject to the provisions of this chapter, a separate water meter shall be required for the purpose of landscaping. A separate water meter shall also be required for common areas associated with new residential condominiums and planned unit developments. (Ord. 2001-10 § 2, 2001).

LETTER OF TRANSMITTAL

No 1 The Plaza
Sonoma, CA 95476-6618
Tel: (707) 933-2207
Fax: (707) 527-8679

TO: CA DEPARTMENT OF WATER RESOURCES
PO BOX 942836
SACRAMENTO, CA 94236-0001
ATTN: SIMON ECHING

Date:	Job No.:
12/21/09	ADMIN

Re: Compliance with AB 1881: Update to the State Water Efficient Landscape Ordinance (WELO)

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copies ☐ Change Order ☐ Original ☐ Regular mail

COPIES	DATE	DESCRIPTION
1	12/21/09	Letter from City of Sonoma re: Compliance with AB 1881

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ For your use ☐ For review and comment ☐ As requested

REMARKS:

If you have any questions or concerns, please contact Toni Bertolero at: 707-523-1010

COPY TO: File SIGNED: Susi for Rose