ORDINANCE NO. _____

ORDINANCE OF THE COUNCIL OF THE CITY OF SANTA ROSA WATER EFFICIENT LANDSCAPE ORDINANCE

THE PEOPLE OF THE CITY OF SANTA ROSA DO ENACT AS FOLLOWS:

Section 1. Chapter 14-30 – Water Efficient Landscape - is added to the Santa Rosa City Code to read as follows:

"**14-30.010 Purpose.**

(A) Article X, Section 2 of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to 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.

14-30.020 Applicability.

(A) 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, Design Review or Utilities Certificate:

(1) Commercial, industrial and institutional landscaping, park and greenbelt landscaping, multiple-family residential and single-family residential landscaping.

(B) This ordinance does not apply to:

(1) Projects that have a completed application for a Building or Grading Permit, Plan Check, Design Review or Utilities Certificate on file prior to January 1, 2010 will be governed either by the City of Santa Rosa Water Efficient Landscape Policy as adopted by City Council Resolution No. 21142 and as amended by City Council Resolution No. 26846 or the City of Santa Rosa Single Family Landscape Policy as adopted by City Council Resolution No. 26690;

(2) Registered local, state or federal historical landscape area;

(3) Ecological restoration or mined-land reclamation projects that do not require a permanent irrigation system.

14-30.030 Definitions.

(A) The following definitions apply to this Chapter:

(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) Lateral Line: Non-pressurized pipe that is located downstream of an irrigation valve (Class 200 or equivalent is not acceptable).

(24) 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.

(25) Main Line: the pressurized pipeline that delivers water from the water source to the valve or outlet (Class 200 or equivalent is not acceptable).

(26) Maximum Applied Water Allowance (MAWA): for design purposes, the upper limit of annual applied water for the established landscaped.

(27) 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.

(28) Mined-Land Reclamation Projects: any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

(29) Moderate Water Use Plants: ornamental trees, shrubs ground covers, and perennials and other plants recognized as moderate-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.

(30) 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.

(31) Low-Head Drainage: water that flows out of the system after the valve turns off due to elevation changes within the system.

(32) Operating Pressure: the pressure when water is flowing through the irrigation system.

(33) Overhead Irrigation: those systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).

(34) Overspray: the irrigation water which is delivered beyond the landscaped target area; wetting pavements, walks structures, or other non-landscaped areas.

(35) Pervious: any surface or material that allows the passage of water through the material and into the underlying soil.
(36) 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."
(37) Precipitation Rate: the rate of application of water measured in inches per hour.
(38) Point of Connection: the point at which an irrigation system taps into the main water supply line.
(39) 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.
(40) Pressure Regulation: a valve that automatically reduces the pressure in a pipe.
(41) 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.
(42) Rain Sensor: a system component which automatically shuts off and suspends the irrigation system when it rains.
(43) 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.
(44) 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.
(45) 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.
(46) Rehabilitated Landscape: any re-landscaping project that requires a building or grading permit, plan check or design review.
(47) Runoff: water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area.
(48) Soils Laboratory Report: the analysis of a soil sample to determine nutrient content, composition and other characteristics, including contaminants.
(49) 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.
(50) Sprinkler Head: a device that delivers to the landscape water through a spray nozzle.

(51) Static Water Pressure: the pipeline or municipal water supply pressure when water is not flowing.
(52) Station: an area served by one valve or by a set of valves that operate simultaneously.
(53) Submeter: a separate meter that is located on the private side of the water system and is plumbed to measure all water that flows only through the irrigation system. This meter is to be use by the owner to monitor irrigation water use and will not be read by the City.
(54) 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.
(55) Valve: a device used to control the flow of water in the irrigation system.
(56) 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.
(57) 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.
(58) 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.
(59) 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.

14-30.040 Landscape Design Plan.

(A) For each landscape project subject to this chapter applicants shall submit a landscape design plan in accordance with the following:

(1) Amendments, Mulching and Soil Conditioning
  (a) A minimum of 8” of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.
  (b) 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.
  (c) 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.

(2) Plants
  (a) Selected plants shall not cause the Estimate Water Use to exceed the Maximum Applied Water Allowance (see calculation in Appendix A)
  (b) 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.

(c) Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.
(d) High water use plants shall not be mixed with low or moderate water use plants.
(e) 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.
(f) Turf shall not be planted in the following conditions:
(i) Slopes exceeding 10%
(ii) Planting areas 8 feet wide or less
(iii) Street medians, traffic islands, planter strips or bulbouts of any size
(g) Invasive plants as listed by the California Invasive Plant Council are prohibited.

(3) Water Features
(a) Recirculating water systems shall be used for water features.
(b) Recycled water shall be used when available onsite.

14-30.050 Irrigation Design Plan.

(A) For each landscape project subject to this chapter applicants shall submit an irrigation design plan that is designed and installed to meet irrigation efficiency criteria as described in Appendix A (MAWA) and in accordance with the following:
(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) Minimum 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 valves shall be installed to prevent low-head drainage

14-30.060 Documentation for Compliance.

(A) 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.

(1) STEP 1: FINAL DESIGN REVIEW

(a) For those landscape projects that require Design Review or a Utilities Certificate applicants shall submit the following documentation to the City:

(i) Completed Appendix A, Maximum Applied Water Allowance

(ii) The landscape planting design plan that accurately and clearly identifies and depicts:

a. new and existing trees, shrubs, groundcovers, turf, and any other planting areas;
b. plants by botanical name and common name;
c. plant sizes and quantities;
d. property lines, new and existing building footprints, streets, driveways, sidewalks and other hardscape features;
e. pools, fountains, water features,

(iii) 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 chapter.

(2) STEP 2: BUILDING PERMIT/PLAN CHECK

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

(i) Appendix A and the planting design as submitted at step 1 in connection with the Design Review or Utilities Certificate application.

(ii) The irrigation plan drawn at the same scale as the planting plan that:

a. Accurately and clearly identifies and depicts irrigation system point of connection;
b. 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.
c. Includes the Hydrozone Table (See Appendix B)

(iii) 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.

(3) STEP 3: COMPLETION OF INSTALLATION

(a) Upon installation and completion of the landscape, applicant shall submit Appendix C, the Certificate of Completion.

(i) The certificate must be accompanied by an irrigation audit that contains the following:

a. Operating pressure of the irrigation system
b. Distribution uniformity of overhead irrigation
c. Precipitation rate of overhead irrigation
d. Report of any overspray or broken irrigation equipment
e. Irrigation schedule including:
   i. Plant establishment irrigation schedule
   ii. 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.

(ii) An irrigation maintenance schedule timeline must be attached to the certificate of completion that includes:

a. Routine inspections, adjustment and repairs to the irrigation system, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning and weeding.

(iii) 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.

14-30.070 Other Provisions.

(A) 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.

(B) 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 Chapters

14-30.040 and 14-30.050 of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.

14-30.080 Provisions For Appeal.

(A) 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 with the Director of Utilities 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 or it will be deemed to have been waived.

14-30.090 Forms.

(A) The following forms shall be submitted as outlined in Section 6 of this chapter.

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 =

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%**

Summary Hydrozone Table		
Hydrozone*	**Area (Sq. Ft.)**	**% of Landscape Area**
High Water Use		
Moderate Water Use		
Low Water Use		
	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

Section 2. Environmental Determination. The Council has considered this proposed ordinance and finds that the adoption and implementation of this ordinance will not have a significant impact on the environment.

Section 3. Severability. If any section, subsection, sentence, clause, phrase or word of this ordinance is for any reason held to be invalid and/or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance.

Section 4. Effective Date. This ordinance shall take effect on January 1, 2010.

IN COUNCIL DULY PASSED AND ADOPTED this _____ day of _____, 2009.

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST: _____ APPROVED: _____
City Clerk Mayor

APPROVED AS TO FORM:

_____
City Attorney