

CITY COUNCIL
CITY OF ROLLING HILLS ESTATES
LOS ANGELES COUNTY, CALIFORNIA

ORDINANCE NO. 658

**AN ORDINANCE OF THE CITY OF ROLLING HILLS ESTATES, CALIFORNIA AMENDING
CHAPTER 17.59 (LANDSCAPING AND IRRIGATION) OF THE MUNICIPAL CODE**

WHEREAS, in 2006, the State Legislature adopted AB 1881, the Water Conservation in Landscaping Act, related to water use, waste, conservation and efficiency; and

WHEREAS, pursuant to AB 1881, the California Department of Water Resources has developed a Model Water Efficient Landscape Ordinance. The City is required to adopt the State Model Ordinance or its own water efficient landscape ordinance that is "at least as effective in conserving water as" the State Model Ordinance. If the City takes no action, it automatically adopts the State Model Ordinance; and

WHEREAS, the City intends to amend Chapter 17.59 of the Rolling Hills Estates Municipal Code to establish water efficient landscape regulations that are "at least as effective in conserving water as" the State Model Water Efficient Landscape Ordinance as required by AB 1881; and

WHEREAS, the local water purveyor implements budget-based tiered-rate billing and enforce water waste prohibitions for all existing metered landscaped areas throughout their service areas, which includes the entire City of Rolling Hills Estates; and

WHEREAS, the Environmental Advisory Committee reviewed the Draft Water Efficient Landscape Ordinance at their meeting on the 29th day of March, 2010 and recommended approval of the ordinance to the City Council; and

WHEREAS, upon giving the required notice the Planning Commission conducted a Public Hearing for the subject project (Planning Application No. 05-10) on the 19th day of April, 2010 and the 17th day of May, 2010, all interested parties were given full opportunity to be heard and to present evidence; and

WHEREAS, on the 17th day of May, 2010, the Planning Commission adopted Resolution No. PA-05-10 recommending approval of the Water Efficient Landscape Ordinance to the City Council; and

WHEREAS, upon giving the required notice the City Council conducted a Public Hearing for the subject project (Planning Application No. 05-10) on the 22nd day of June, 2010 and the 13th day of July, 2010, all interested parties were given full opportunity to be heard and to present evidence; and

WHEREAS, the City Council hereby determines that this Ordinance is exempt from review under the California Environmental Quality Act ("CEQA") (California Public Resources Code Section 21000 et seq.), because pursuant to State CEQA Regulation 15307 (14 Cal. Code Regs., § 15307), this Ordinance is covered by the CEQA Categorical Exemption for actions taken to assure the maintenance, restoration, enhancement, or protection of a natural resource where the regulatory process involves procedures for protection of the environment. The adoption of this Ordinance will result in the enhancement and protection of water resources in the City, and will not result in cumulative adverse environment impacts. It is therefore exempt from the provisions of CEQA; and

NOW, THEREFORE, the City Council of the City of Rolling Hills Estates does hereby ordain as follows:

SECTION 1. That the City Council of The City of Rolling Hills Estates, hereby amends existing Chapter 17.59 (Landscaping and Irrigation) of the Municipal Code to read in full as follows:

CHAPTER 17.59

WATER EFFICIENT LANDSCAPES

- 17.59.010. Purpose.
- 17.59.020. Definitions.
- 17.59.030. Applicability
- 17.59.040. Exemptions.
- 17.59.050. Implementation Procedures.
- 17.59.060. Landscape Water Use Standards.
- 17.59.070. Water Waste Prevention
- 17.59.080. Existing Landscapes
- 17.59.090. Public Education
- 17.59.010 Purpose.

The purpose of this chapter is to establish water efficient landscape regulations that are "at least as effective in conserving water as" the State Model Water Efficient Landscape Ordinance in the context of conditions in the City in order to ensure that landscapes are planned, designed, installed, maintained, and managed in a manner that uses water efficiently, encourages water conservation, and prevents water waste.

17.59.020 Definitions.

For the purposes of this chapter and the Guidelines for the implementation of this chapter, the following terms are defined:

Applicant means the person submitting a landscape documentation package. Applicants can be the property owner or his or her designee.

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

Budget-based tiered-rate structure means tiered or block rates for irrigation accounts charged by the local water purveyor(s) in which the block definition for each customer is derived from lot size or irrigated area and the evapotranspiration requirements of landscaping.

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

Estimated Applied Water Use or *EAWU* means the average annual total amount of water estimated to be necessary to keep plants in a healthy state, calculated as provided in the Guidelines. It is based on the reference evapotranspiration rate, the size of the landscape area, plant water use factors, and the relative irrigation efficiency of the irrigation system.

Evapotranspiration adjustment factor or *ET adjustment factor* or *ETAF* is equal to the plant factor divided by the irrigation efficiency factor for a landscape project, as described in the Guidelines. The ETAF is calculated in the context of local reference evapotranspiration, using site-specific plant factors and irrigation efficiency factors that influence the amount of water that needs to be applied to the specific landscaped area. A combined plant mix with a site-wide average plant factor of 0.5 (indicating a moderate water need) and average irrigation efficiency of 0.71 produces an ET adjustment factor of $(0.7) = (0.5/0.71)$, which is the standard of water use efficiency generally required by this chapter and the Guidelines, except that the ETAF for a special landscaped area shall not exceed 1.0.

Guidelines refers to the Guidelines for Implementation of the Water Efficient Landscape Ordinance, as approved by the City, which describes procedures, calculations, and requirements for landscape projects subject to this chapter.

Hardscapes means any durable material or feature (pervious and non-pervious) installed in or around a landscaped area, such as pavements or walls. Pools and other water features are considered part of the landscaped area and are not considered hardscapes.

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

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

Irrigation Efficiency or *IE* means the measurement of the amount of water beneficially used divided by the amount of water applied to the landscaped area. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this chapter is 0.71. Greater irrigation efficiency can be expected from well-designed and maintained systems.

Landscape Documentation Package means the documents required to be provided to the City for review and approval of landscape projects subject to this chapter, as described in the Guidelines.

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

Landscape project means total area of landscape in a project, as provided in the definition of "landscaped area," meeting the requirements under Section 17.59.030 of this chapter.

Landscape rehabilitation means any re-landscaping project that meets the applicability criteria of Section 17.59.030(A) of this chapter, where the modified landscape area is greater than 2,500 square feet or where the cumulative modified area is greater than 2,500 square feet if the modifications are planned to occur incrementally within one year.

Landscaped Area means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance and Estimated Applied Water Use calculations. The landscaped area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

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

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

Mined-land reclamation projects means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

New landscape means, for the purposes of this chapter, a new building with a landscape or other new landscape such as a park, playground, or greenbelt without an associated building.

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

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

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

Plant Factor or *Plant Water Use Factor* is a factor, when multiplied by *ET_o*, that estimates the amount of water needed by plants. For purposes of this chapter, the plant factor range for low water use plants is 0 to 0.3; the plant factor range for moderate water use plants is 0.4 to 0.6; and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this chapter are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species."

Recycled water or reclaimed water means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

Reference evapotranspiration or *ETo* means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in the Guidelines, and is an estimate of the evapotranspiration of a large field of 4" to 7" tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowances.

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

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

Turf means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

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

Water Feature means a design element where 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 landscaped area. Constructed wetlands used for on-site wastewater treatment, habitat protection or storm water best management practices that are not irrigated and used solely for water treatment or storm water retention are not water features and, therefore, are not subject to the water budget calculation.

17.59.030. Applicability.

A. This chapter applies to the following landscape projects:

1. New landscape installations or landscape rehabilitation projects by public agencies or private non-residential developers with a landscaped area, including water features but excluding hardscape, equal to or greater than 2,500 square feet.

2. New landscape installations or landscape rehabilitation projects by developers or property managers of single-family and multi-family residential projects or complexes with a landscaped area, including water features but excluding hardscape, equal to or greater than 2,500 square feet.

3. New landscape installations that are homeowner-installed, including homeowner-hired, in single-family or multi-family residential lots with a total project landscaped area equal to or greater than 5,000 square feet.

B. Section 17.59.070 applies to all landscapes.

C. Section 17.59.080 applies to existing landscapes that are over one acre in size and were installed prior to the effective date of this ordinance.

17.59.040. Exemptions.

A. This chapter does not apply to:

1. Registered local, state, or federal historical sites;
2. Ecological restoration projects that do not require a permanent irrigation system;
3. Mined-land reclamation projects that do not require a permanent irrigation system; or
4. Plant collections, as part of botanical gardens and arboreturns open to the public.

B. See the Landscape Guidelines for specific provisions that apply to new landscape installations or landscape rehabilitation projects for cemeteries.

C. The requirements of this chapter may be partially or wholly waived at the discretion of the City Manager for landscape rehabilitation projects that are limited to replacement of plantings with equal or lower water needs and where any modifications to the irrigation system do not require ministerial permits and the irrigation system is found to be designed, operable, and programmed consistent with minimizing water waste in accordance with City and, to the extent applicable, local water purveyor regulations.

17.59.050. Implementation Procedures.

A. Prior to the start of construction or issuance of a permit for any project that meets the applicability criteria in Section 17.59.030, a Landscape Documentation Package is required to be submitted to the City for review and approval. Any Landscape Documentation Package submitted to the City shall comply with provisions of this chapter and the Guidelines for the Implementation of the City of Rolling Hills Estates' Water Efficient Landscape Ordinance.

B. The Landscape Documentation Package shall include a certification by a landscape professional stating that the landscape design plan, soil management report, irrigation design plan, and water calculations have been prepared by or under the supervision of the landscape professional and are certified to be in compliance with the provisions of this chapter.

1. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use calculations. Water use calculations shall be consistent with calculations contained in the Guidelines. Landscape Plans prepared pursuant to Sections 17.59.030(A)(1) and 17.59.030(A)(2) of the Chapter shall require review and approval of the Park and Activities Commission.

2. A Certification of Completion is required to verify compliance with the approved plans and shall be obtained in conjunction with a Certificate of Use and Occupancy or a Permit Final, to the extent applicable, as provided in the Guidelines.

C. Prior to the issuance of a Certificate of Completion, all projects that meet the applicability criteria in Section 17.59.030 shall obtain a landscape zone clearance and landscape final inspection, inclusive of plan review and inspection by a City Landscape Consultant at the applicant's cost.

17.59.060. Landscape Water Use Standards.

A. For applicable new landscape or landscape rehabilitation projects subject to Section 17.59.030(A) of this chapter, the Estimated Applied Water Use allowed for the landscaped area may not exceed the MAWA calculated using an ET adjustment factor of 0.7, except for the portion of the MAWA applicable to any special landscaped areas within the landscape project, which may be calculated using an ETAF of 1.0. Where the design of the landscaped area can be otherwise shown to be equivalently water efficient, the applicant may submit alternative or abbreviated information supporting the demonstration that the annual EAWU is less than the MAWA, at the discretion of and review and approval of the City.

17.59.070. Water Waste Prevention

A. Water waste resulting from inefficient landscape irrigation, such as runoff, low head drainage, overspray or other similar conditions where water flows into adjacent property, non-irrigated areas, walks, roadways, parking lots, structures, or other non-pervious surfaces is prohibited

B. Failure to comply with subsection A can result in the assessment of civil or administrative fines. Willful or repeat violations of subsection A can result in revocation of approval provided pursuant to this chapter.

17.59.080. Existing Landscapes

A. For existing landscapes that were installed prior to the effective date of this ordinance, are over one acre in size and have a water meter, the City and/or the local water purveyor shall administer programs that may include, but are not limited to, irrigation water use analysis, irrigation surveys, and/or irrigation audits, tiered water rate structures, water budgeting by parcel, or other approaches to achieve landscape water use efficiency to a level equivalent to or less than what would be achieved by applying a MAWA calculated with an ETAF of 0.8.

B. For existing landscapes that were installed prior to the effective date of this ordinance and do not have a water meter, the City and/or local water purveyor shall administer programs that may include, but not be limited to, irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary to prevent water waste.

C. For landscape projects that meet the criteria of Section 17.59.030, the City and/or the local water purveyor shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the MAWA.

D. The architectural guidelines of a common interest development, including apartments, condominiums, planned developments, and stock cooperatives, may not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

17.59.090 Public Education

A. Education is critical to promote the efficient use of water in landscapes. The use of appropriate principles of design, installation, management, and maintenance that save water are encouraged in the community.

B. The City shall work with the local water purveyor to provide information to owners of single-family residential homes regarding the design, installation, management and maintenance of water efficient landscapes.

C. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance and the Guidelines. Signs shall be used to identify the model as an example of a water efficient landscape, featuring elements such as hydrozones, irrigation equipment, and others that contribute to the overall water efficient landscape theme. Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes."

SECTION 2. If any section, subsection, subdivision, sentence, clause, or portion of this ordinance, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have adopted this ordinance, and each section, subsection, subdivision, sentence, clause, phrase, or portion thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, or portions thereof be declared invalid or unconstitutional.

SECTION 3. The City Clerk shall certify to the adoption of this resolution and shall cause the same to be published in accordance with law.

ADOPTED this 13th day of July, 2010.

ATTEST:


JOHN C. ADDELMAN, MAYOR


DOUGLAS R. FRICHARD, CITY CLERK

I HEREBY CERTIFY that the foregoing Ordinance No. 658 was adopted by the City Council of the City of Rolling Hills Estates at a regular meeting held thereof on the 13th day of July, 2010, by the following vote:

AYES:	ADDLEMAN, MITCHELL, SEAMANS, ZERUNYAN, ZUCKERMAN
NOES:	NONE
ABSTAIN:	NONE
ABSENT:	NONE



DOUGLAS R. PRICHARD, CITY CLERK

**GUIDELINES
FOR IMPLEMENTATION OF THE
CITY OF ROLLING HILLS ESTATES
WATER EFFICIENT LANDSCAPE ORDINANCE**

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1. Purpose and Applicability

1.1 Purpose

- (a) The primary purpose of these Guidelines is to provide procedural and design guidance for applicants proposing new landscape or landscape rehabilitation projects that are subject to Chapter 17.59 of the City of Rolling Hills Estates Municipal Code. This document is also intended for use and reference by City staff in reviewing and approving designs and verifying compliance with Chapter 17.59.
- (b) Other regulations affecting landscape design and maintenance practices are potentially applicable and should be consulted for additional requirements. These regulations include but may not be limited to:
 - (1) State of California Assembly Bill 1881 (Laird, Water Conservation), Chapter No. 559;
 - (2) National Pollutant Discharge Elimination System Permit(s) for the Municipal Separate Storm Sewer System;
 - (3) Los Angeles County Fire Code Regulations for fuel modification in landscapes;
 - (4) Water Conservation, Water Supply Shortage, and Drought Response Regulations of the City in Chapter 13.04 of Title 13;
 - (5) Water Conservation, Water Supply Shortage and Drought Response Regulations of any other Local Water Purveyor that provides water to the City;
 - (6) State and local regulations governing the use of Recycled Water;
 - (7) Rolling Hills Estates Municipal Code
 - (8) Zoning Code;
 - (9) Building Code;
 - (10) Specific Plans, Master Plans, General Plan, or similar land use and planning documents; and
 - (11) Conditions of approval for a specific project

1.2 Applicability

- (a). These Guidelines apply to landscape rehabilitation projects in accordance with Section 17.59.030 of Chapter 17.59 of Title 17 of the Rolling Hills Estates Municipal Code.
- (b) New landscape installations or landscape rehabilitation projects for cemeteries must only comply with Section 2.2, 2.7(c) and 2.9 of these Guidelines.

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

2.1 Elements of the Landscape Documentation Package

- (a) A Landscape Documentation Package is required to be submitted by the applicant for review and approval prior to zone clearance of a landscape plan when required. Unless otherwise directed by the City, the Landscape Documentation Package must include the following elements either on plan sheets or supplemental pages as directed by the City:
- (1) Project Information, including, but not limited to, the following:
 - (a) date;
 - (b) project name;
 - (c) project address, parcel, and/or lot number(s);
 - (d) total landscaped area (square feet) and rehabilitated landscaped area (if applicable);
 - (e) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed);
 - (f) water supply type (e.g., potable, recycled, or well) and identification of the local retail water purveyor if the project applicant is not served by a private well;
 - (g) checklist or index of all documents in the Landscape Documentation Package;
 - (h) project contacts, including contact information for the project applicant and property owner; and
 - (i) any other information the City Manager or his/her designee deems relevant for determining whether the landscape project complies with the Water Efficient Landscape Ordinance and these Guidelines.
 - (2) Certification of Design in accordance with **Exhibit A** of these Guidelines that includes a landscape professional's professional stamp, as applicable, signature, contact information (including email and telephone number), license number, and date, certifying the statement that "The design of this project complies with the requirements of the City's Water Efficient Landscape Ordinance" and shall bear the signature of the landscape professional as required by law.
 - (3) Maximum Applied Water Allowance (MAWA) and Estimated Applied Water Use (EAWU) expressed as annual totals including a Water Efficient Landscape Worksheet (see Section 2.2).

- (4) A soil management report or specifications, or specification provision requiring soil testing and amendment recommendations and implementation to be accomplished during construction of the landscape project (see Section 2.3).
- (5) A landscape design plan for the landscape project (see Section 2.4).
- (6) An irrigation design plan for the landscape project (see Section 2.5).
- (7) A grading design plan, unless grading information is included in the landscape design plan for the landscape project or unless the landscape project is limited to replacement planting and/or irrigation to rehabilitate an existing landscaped area (See Section 2.6).

2.2 Water Efficient Landscape Calculations and Alternatives

- (a) The applicant must provide the calculated Maximum Applied Water Allowance (MAWA) and Estimated Applied Water Use (EAWU) for the landscaped area as part of the Landscape Documentation Package submittal to the City. The MAWA and EAWU shall be calculated based on completing the Water Efficient Landscape Worksheets (in accordance with the sample worksheets in **Appendix B**).
- (b) The EAWU allowable for the landscaped area may not exceed the MAWA. The MAWA must be calculated using an evapotranspiration adjustment factor (ETAF) of 0.7 except for the portion of the MAWA applicable to any special landscaped areas within the landscape project, which must be calculated using an ETAF of 1.0. Where the design of the landscaped area can otherwise be shown to be equivalently water-efficient, the applicant may submit alternative or abbreviated information supporting the demonstration that the annual EAWU is less than the MAWA, at the discretion of and for the review and approval of the City.
- (c) Water budget calculations must adhere to the following requirements:
 - (1) The MAWA must be calculated using the Water Efficient Landscape Worksheets and equation presented in **Appendix B** on page B-1. The example calculation on page B-1 is a hypothetical example to demonstrate proper use of the equation.
 - (2) The EAWU must be calculated using the Water Efficient Landscape Worksheets and equation presented in Appendix B on page B-2. The example calculation on page B-2 is a hypothetical example.
 - (3) For the calculation of the MAWA and EAWU, a project applicant must use the *ET_o* values from the closest location listed in the Reference Evapotranspiration Table in **Appendix C** in accordance with the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.
 - (4) For calculation of the EAWU, the plant water use factor must be determined as appropriate to the project location from the Water Use

Classification of Landscape Species (WUCOLS) Evaluation List. The plant factor is 0.1 for very low water use plants, 0.2 to 0.3 for low water use plants, 0.4 to 0.6 for moderate water use plants, and 0.7 to 1.0 for high water use plants.

- (5) For calculating the EAWU, the plant water use factor must be determined for each valve hydrozone based on the highest-water-use plant species within the zone.
- (6) For calculation of the EAWU, the area of a water feature is defined as a high water use hydrozone with a plant factor of 1.0.
- (7) For calculation of the EAWU, a temporarily irrigated hydrozone area, such as an area of highly drought-tolerant native plants that are not intended to be irrigated after they are fully established, is defined as a very low water use hydrozone with a plant factor of 0.1.
- (8) For calculation of the MAWA, the ETAF for special landscaped areas is set at 1.0. For calculation of the EAWU, the ETAF for special landscaped areas is calculated as the special landscaped area (SLA) plant factor divided by the SLA irrigation efficiency factor.
- (9) Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.

2.3 Soil Management Report

- (a) In order to reduce runoff and encourage healthy plant growth, a soil management report must be completed by the applicant, or his/her designee, as follows:
 - (1) Submit soil samples to a certified agronomic soils laboratory for analysis and recommendations.
 - (a) Soil sampling must be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
 - (b) The soil analysis may include:
 - 1. soil texture;
 - 2. infiltration rate determined by laboratory test or soil texture infiltration rate table;
 - 3. pH;
 - 4. total soluble salts;
 - 5. sodium;
 - 6. percent organic matter; and

7. recommendations.

- (2) The applicant, or his/her designee, must comply with one of the following:
- (a) If significant mass grading is not planned, the soil analysis report must be submitted to the City as part of the Landscape Documentation Package; or
 - (b) If significant mass grading is planned, the soil analysis report must be submitted to the City as part of the Certification of Completion.
 - (c) The soil analysis report must be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans in order to make any necessary adjustments to the design plans.
 - (d) The applicant, or his/her designee, must submit documentation verifying implementation of soil analysis report recommendations to the City with the Certification of Completion.

2.4 Landscape Design Plan

- (a) For the efficient use of water, a landscape must be carefully designed and planned for the intended function of the project. The following design criteria must be submitted as part of the Landscape Documentation Package.
- (1) Plant Material
- (a) Any plant may be selected for the landscaped area provided the EAWU in the landscaped area does not exceed the MAWA. To encourage the efficient use of water, the following is highly recommended:
 - 1. protection and preservation of non-invasive water-conserving plant species and water-conserving turf;
 - 2. selection of water-conserving plant species and water-conserving turf;
 - 3. selection of plants based on disease and pest resistance;
 - 4. selection of trees based on applicable City and local tree ordinances or tree shading guidelines; and
 - 5. selection of plants from local and regional landscape program plant lists.
 - (b) Each hydrozone must have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Section 2.5(a)(2)(d) of these Guidelines.

- (c) Plants must be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended for inclusion in the landscape design plan:
- (1) use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
 - (2) recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, and power lines); and
 - (3) consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
- (d) Turf is discouraged on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape and where 25% means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).
- (e) A landscape design plan for projects in fire-prone areas and fuel modification zones shall comply with requirements of the local Fire Authority where applicable. When conflicts between water conservation and fire safety design elements exist, the fire safety requirements have priority.
- (f) The use of invasive plant species and/or noxious plant species is prohibited.
- (g) The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, may not prohibit or include conditions that have the effect of prohibiting the use of water efficient plant species as a group.
- (1) Water Features
 - (a) Recirculating water systems must be used for water features.
 - (b) Where available and consistent with public health guidelines, recycled water must be used as a source for decorative water features.
 - (c) The surface area of a water feature must be included in the high water use hydrozone area of the water budget calculation.
 - (d) Pool and spa covers are highly recommended.
 - (2) Mulch and Amendments
 - (a) A minimum two inch (2") layer of mulch must be applied on all exposed soil surfaces of planting areas except in turf areas,

creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

- (b)** Stabilizing mulching products must be used on slopes.
 - (c)** The mulching portion of the seed/mulch slurry in hydro-seeded applications must meet the mulching requirement.
 - (d)** Soil amendments must be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see Section 2.3 of these Guidelines).
- (h)** The landscape design plan, at a minimum, must:
- (1)** delineate and label each hydrozone by number, letter, or other method;
 - (2)** identify each hydrozone as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the landscaped area must be included in the low water use hydrozone for the water budget calculation;
 - (3)** identify recreational areas;
 - (4)** identify areas permanently and solely dedicated to edible plants;
 - (5)** identify areas irrigated with recycled water;
 - (6)** identify type of mulch and application depth;
 - (7)** identify soil amendments, type, and quantity;
 - (8)** identify type and surface area of water features;
 - (9)** identify hardscapes (pervious and non-pervious);
 - (10)** identify location and installation details of any applicable storm water best management practices that encourage on-site retention and infiltration of storm water. Storm water best management practices are encouraged in the landscape design plan and examples include, but are not limited to:

 - (a)** infiltration beds, swales, and basins that allow water to collect and soak into the ground;
 - (b)** constructed wetlands and retention ponds that retain water, handle excess flow, and filter pollutants; and
 - (c)** pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.
 - (11)** identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);

- (12) contain the following statement: "I have complied with the criteria of the City of Rolling Hills Estates Water Efficient Landscape Ordinance (Rolling Hills Estates Municipal Code Chapter 17.59) and applied them for the efficient use of water in the landscape design plan;" and
- (13) bear the signature of a California-licensed landscape professional.

2.5 Irrigation Design Plan

- (a) For the efficient use of water, an irrigation system must meet all the requirements listed in this section and the manufacturer's recommendations. The irrigation system and its related components must be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria must be submitted as part of the Landscape Documentation Package.

(1) System

- (a) Dedicated landscape water meters are highly recommended on landscaped areas smaller than 5,000 square feet to facilitate water management.
- (b) Where available and consistent with public health guidelines, irrigation systems must use recycled water.
- (c) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data are required for irrigation scheduling in all irrigation systems.
- (d) The irrigation system must be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
 - 1. If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices must be installed to meet the required dynamic pressure of the irrigation system.
 - 2. Static water pressure, dynamic or operating pressure, and flow reading of the water supply must be measured at the point of connection. These pressure and flow measurements must be conducted at the design stage. If the measurements are not available at the design stage, the measurements must be conducted at installation.
- (e) Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions are required on all irrigation systems, as appropriate for

local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.

- (f) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) are required as close as possible to the point of connection of the water supply to minimize water loss in case of an emergency (such as a main line break) or routine repair.
- (g) Backflow prevention devices are required to protect the water supply from contamination by the irrigation system. A project applicant must refer to the applicable City code (i.e., public health) for additional backflow prevention requirements.
- (h) High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- (i) The irrigation system must be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
- (j) Relevant information from the soil management plan, such as soil type and infiltration rate, must be utilized when designing irrigation systems.
- (k) The design of the irrigation system must conform to the hydrozones of the landscape design plan.
- (l) Average irrigation efficiency for the project must be determined in accordance with the EAWU calculation sheet in **Appendix B**. Unless otherwise indicated by the irrigation equipment manufacturer's specifications or demonstrated by the project applicant, the irrigation efficiency of the irrigation heads used within each hydrozone shall be assumed to be:

Pop-up stream rotator heads = 75%

Stream rotor heads = 75%

Microspray = 75%

Bubbler = 80%

Drip emitter = 85%

Subsurface irrigation = 90%

- (m) It is highly recommended that the project applicant or local agency inquire of the City and, to the extent applicable, a local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
- (n) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

- (o) Sprinkler heads and other emission devices must have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- (p) Head to head coverage is recommended. However, sprinkler spacing must be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- (q) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
- (r) Check valves or anti-drain valves are required for all irrigation systems.
- (s) Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction must be irrigated with subsurface irrigation or a low volume irrigation system.
- (t) Overhead irrigation is not permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
 1. the landscaped area is adjacent to permeable surfacing and no runoff occurs; or
 2. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
 3. the irrigation designer for the landscape project specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates strict adherence to the irrigation system design criteria in Section 2.5 (a)(1)(i) hereof. Prevention of overspray and runoff must be confirmed during an irrigation audit.
- (u) Slopes greater than 25% may not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer of the landscape project specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.

(2) Hydrozone

- (a) Each valve must irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.

- (b) Sprinkler heads and other emission devices must be selected based on what is appropriate for the plant type within that hydrozone.
- (c) Where feasible, trees must be placed on separate valves from shrubs, groundcovers, and turf.
- (d) Individual hydrozones that mix plants of moderate and low water use or moderate and high water use may be allowed if:

 - 1. the plant factor calculation is based on the proportions of the respective plant water uses and their respective plant factors;
or
 - 2. the plant factor of the higher water using plant is used for the calculations.
- (e) Individual hydrozones that mix high and low water use plants are not permitted.
- (f) On the landscape design plan and irrigation design plan, hydrozone areas must be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve and assign a number to each valve.
- (g) The irrigation design plan, at a minimum, must contain:

 - 1. the location and size of separate water meters for landscape;
 - 2. the location, type, and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices;
 - 3. static water pressure at the point of connection to the public water supply;
 - 4. flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
 - 5. irrigation schedule parameters necessary to program smart timers specified in the landscape design;
 - 6. the following statement: "I have complied with the criteria of the City of Rolling Hills Estates Water Efficient Landscape Ordinance (Rolling Hills Estates Municipal Code Chapter 17.59) and applied them accordingly for the efficient use of water in the irrigation design plan;" and

7. the signature of a California-licensed landscape professional.

[Note: Authority Cited: Section 65595, Government Code.
Reference: Section 65596, Government Code.]

2.6 Grading Design Plan

- (a) For the efficient use of water, grading of a landscape project site must be designed to minimize soil erosion, runoff, and water waste. Finished grading configuration of the landscaped area, including pads, slopes, drainage, post-construction erosion control, and storm water control Best Management Practices, as applicable, must be shown on the Landscape Plan unless this information is fully included in separate Grading Plans for the project, or unless the project is limited to replacement planting and/or irrigation to rehabilitate an existing landscaped area.
- (b) The applicant must submit a landscape grading plan that indicates finished configurations and elevations of the landscaped area including:
 - (1) height of graded slopes;
 - (2) drainage patterns;
 - (3) pad elevations;
 - (4) finish grade; and
 - (5) storm water retention improvements, if applicable.
- (c) To prevent excessive erosion and runoff, it is highly recommended that the project applicant:
 - (1) grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
 - (2) avoid disruption of natural drainage patterns and undisturbed soil; and
 - (3) avoid soil compaction in landscaped areas.
- (d) The Grading Design Plan must contain the following statement: "I have complied with the criteria of the Rolling Hills Estates Water Efficient Landscape Ordinance (Rolling Hills Estates Municipal Code Chapter 17.59) and applied them accordingly for the efficient use of water in the grading design plan" and shall bear the signature of the landscape professional, as required by law.

[Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.]

2.7 Certification of Completion

- (a) Landscape project installation may not proceed until the Landscape Documentation Package has been approved by the City and a zone clearance issued.
- (b) The applicant must notify the City at the beginning of the installation work and at intervals, as necessary, for the duration of the landscape project work to schedule all required inspections.
- (c) Certification of Completion of the landscape project must be obtained through a Certificate of Use and Occupancy or a Landscape Final Inspection. The requirements for the Final Inspection and Permit Closure include submittal of:
 - (1) A Landscape Installation Certificate of Completion in the form included as **Appendix D** of these Guidelines, which must include: (i) certification by a landscape professional that the landscape project has been installed per the approved Landscape Documentation Package; and (ii) the following statement: "The landscaping has been installed in substantial conformance to the design plans, and complies with the provisions of the Water Efficient Landscape Ordinance for the efficient use of water in the landscape."
 - (2) An irrigation audit report from a certified irrigation auditor.

[Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.]
 - (3) Verification of landscape installation per approved plans by City staff through a landscape final inspection.

2.8 Post-Installation Irrigation Scheduling

- (a) For the efficient use of water, all irrigation schedules must be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules must meet the following criteria:
 - (1) Irrigation scheduling must be regulated by automatic irrigation controllers.
 - (2) Overhead irrigation must be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
 - (3) Parameters used to set the automatic controller shall be developed for each of the following:
 - (a) the plant establishment period;
 - (b) the established landscape; and

- (c) temporarily irrigated areas.

[Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.]

2.9 Post-Installation Landscape and Irrigation Maintenance

- (a) Landscapes must be maintained to ensure water use efficiency. A regular maintenance schedule must be submitted with the Certificate of Completion.
- (b) A regular maintenance schedule must include, but not be limited to, routine inspection, adjustment and repair of the irrigation system and its components, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning and weeding in all landscape areas and removing any obstruction to emission devices. Operation of the irrigation system outside the allowable watering window is allowed for auditing and system maintenance.

CERTIFICATION OF LANDSCAPE DESIGN

I hereby certify that:

(1) I am a professional appropriately licensed in the State of California to provide professional landscape design services.

(2) The landscape design and water use calculations for the property located at _____
_____ (provide street address or parcel number(s)) were prepared by me or under my supervision.

(3) The landscape design and water use calculations for the identified property comply with the requirements of the City of Rolling Hills Estates Water Efficient Landscape Ordinance (Municipal Code Chapter 17.59) and the City of Rolling Hills Estates Guidelines for Implementation of the City of Rolling Hills Estates Water Efficient Landscape Ordinance.

(4) The information I have provided in this Certificate of Landscape Design is true and correct and is hereby submitted in compliance with the City of Rolling Hills Estates Guidelines for Implementation of the City of Rolling Hills Estates Water Efficient Landscape Ordinance.

Print Name

Date

Signature

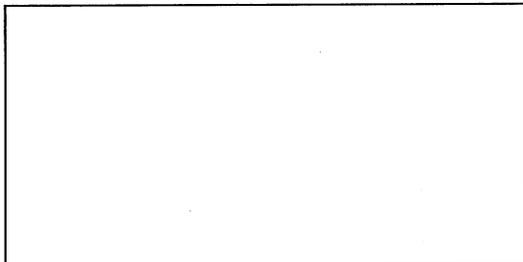
License Number

Address

Telephone

E-mail Address

Landscape Design Professional's Stamp
(If applicable)



WATER EFFICIENT LANDSCAPE WORKSHEET

Maximum Applied Water Allowance (MAWA)

The project's MAWA shall be calculated using this equation:

$$\text{MAWA} = (\text{ETo} \times 0.7 \times \text{LA} \times 0.62) + (\text{ETo} \times 1.0 \times \text{SLA} \times 0.62)$$

Where:

ETo = Reference Evapotranspiration of 46.1 (inches per year)

0.7 = Evapotranspiration Adjustment Factor (ETAF)

1.0 = ETAF for Special Landscaped Area

LA = Landscaped Area (square feet)

SLA = Special Landscaped Area (square feet)

0.62 = Conversion factor (to gallons per square foot)

Example:

A hypothetical landscape project in Rolling Hills Estates has an irrigated landscaped area of 22,000 square feet plus 2,000 square feet of Special Landscaped Area.

	Area (s.f.)
LA	22,000
SLA	2,000

Show calculations:

$$\text{MAWA} = (39.01 \times 0.7 \times 22,000 \times 0.62) + (39.01 \times 1.0 \times 2,000 \times 0.62)$$

$$\text{MAWA} = (372,467) + (48,372)$$

$$\text{MAWA} = \underline{420,839} \text{ gallons per year}$$

- EXAMPLE SHEET -

WATER EFFICIENT LANDSCAPE WORKSHEET

Estimated Applied Water Use (EAWU)

The project's EAWU shall be calculated using this equation:

$$EAWU = (ET_o) (0.62) \frac{(PF \times LA + SLA)}{IE}$$

Where:

ET_o = Reference Evapotranspiration of 39.01 (inches per year)

PF = Plant Factor from WUCOLS

LA = Landscaped Area (square feet)

SLA = Special Landscaped Area (square feet)

IE = Irrigation Efficiency (0.71 minimum)

0.62 = Conversion factor (to gallons per square foot)

WUCOLS Table of Plant Factors can be found at:

www.water.ca.gov/wateruseefficiency/docs/wucols00.pdf

Example:

Hydrozone	Plant Water Use Type	Plant Factor (PF)	LA (s.f.)	PF x LA
1	High	0.8	7,000	5,600
2	Medium	0.5	10,000	5,000
3	Low	0.3	5,000	1,500
				Sum = 12,100
Hydrozone	Plant Water Use Type	Plant Factor (PF)	SLA (s.f.)	
4	SLA	1.0	2,000	

Show calculations:

$$EAWU = (39.01) (0.62) \frac{(12,100 + 2,000)}{0.71}$$

$$EAWU = (24.186) (17,042 + 2,000)$$

$$EAWU = 460,553 \text{ gallons per year}$$

The EAWU (460,553) is less than the MAWA (497,327). For this example, the water budget complies with the MAWA.

- EXAMPLE SHEET -

WATER EFFICIENT LANDSCAPE WORKSHEET

Maximum Applied Water Allowance (MAWA)

The project's MAWA shall be calculated using this equation:

$$\text{MAWA} = (\text{ETo} \times 0.7 \times \text{LA} \times 0.62) + (\text{ETo} \times 1.0 \times \text{SLA} \times 0.62)$$

Where:

ETo = Reference Evapotranspiration of 39.01 (inches per year)

0.7 = Evapotranspiration Adjustment Factor (ETAF)

1.0 = ETAF for Special Landscaped Area

LA = Landscaped Area (square feet)

SLA = Special Landscaped Area (square feet)

0.62 = Conversion factor (to gallons per square foot)

	Area (s.f.)
LA	
SLA	

Show calculations:

MAWA =

MAWA = _____ gallons per year

- EXAMPLE SHEET -

WATER EFFICIENT LANDSCAPE WORKSHEET

Estimated Applied Water Use (EAWU)

The project's EAWU shall be calculated using this equation:

$$EAWU = (ET_o) (0.62) \frac{(PF \times LA + SLA)}{IE}$$

Where:

ET_o = Reference Evapotranspiration of 39.01 (inches per year)

PF = Plant Factor from WUCOLS

LA = Landscaped Area (square feet)

SLA = Special Landscaped Area (square feet)

IE = Irrigation Efficiency (0.71 minimum)

0.62 = Conversion factor (to gallons per square foot)

WUCOLS Table of Plant Factors can be found at:

www.water.ca.gov/wateruseefficiency/docs/wucols00.pdf

Hydrozone	Plant Water Use Type	Plant Factor (PF)	LA (s.f.)	PF x LA
Hydrozone	Plant Water Use Type	Plant Factor (PF)	SLA (s.f.)	

Show calculations:

EAWU =

EAWU = _____ gallons per year

Appendix C

Reference Evapotranspiration (ETo) Table

Appendix C - Reference Evapotranspiration (ETo) Table*													
City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
Rolling Hills Estates	1.86	2.24	3.41	4.50	5.27	5.70	5.89	5.58	4.50	3.41	2.40	1.86	46.6

LANDSCAPE INSTALLATION CERTIFICATE OF COMPLETION

I hereby certify that:

(1) I am a professional appropriately licensed in the State of California to provide professional landscape design services.

(2) The landscape project for the property located at _____ (provide street address or parcel number(s)) was installed by me or under my supervision.

(3) The landscaping for the identified property has been installed in substantial conformance with the approved Landscape Documentation Package and complies with the requirements of the City of Rolling Hills Estates Water Efficient Landscape Ordinance (Municipal Code Chapter 13.08 and the City of Rolling Hills Estates Guidelines for Implementation of the City of Rolling Hills Estates Water Efficient Landscape Ordinance for the efficient use of water in the landscape.

(4) The information I have provided in this Landscape Installation Certificate of Completion is true and correct and is hereby submitted in compliance with the City of Rolling Hills Estates Guidelines for Implementation of the City of Rolling Hills Estates Water Efficient Landscape Ordinance.

Print Name

Date

Signature

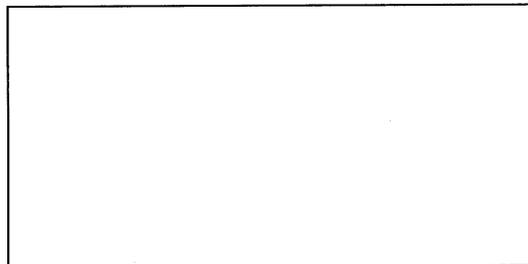
License Number

Address

Telephone

E-mail Address

Landscape Design Professional's Stamp
(If Appropriate)



Definitions

The terms used in these *Guidelines* have the meaning set forth below:

“Backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

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

“Check valve” or **“anti-drain valve”** means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

“Certified landscape irrigation auditor” means person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation auditor certification program and Irrigation Association’s Certified Landscape Irrigation Auditor program.

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

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

“Drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

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

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

“Flow rate” means the rate at which water flows through pipes, *valves* and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

“Infiltration rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

“Invasive plants species” or **“noxious species”** means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive plant species may be regulated by county agricultural agencies as noxious species.

“Irrigation audit” means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not

limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

"Irrigation efficiency" or "IE" means the measurement of the amount of water beneficially used divided by the amount of water applied. 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. Greater irrigation efficiency can be expected from well designed and maintained systems.

"Landscape Installation Certificate of Completion" means the certificate included as **Appendix D** of these Guidelines that must be submitted to the City pursuant to Section 2.7(a)(1) of hereof.

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

"Low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

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

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

"Mulch" means any organic material such as leaves, bark, straw or compost, or inorganic mineral materials such as rocks, gravel, or decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

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

"Overspray" means the irrigation water which is delivered beyond the target area.

"Precipitation rate" means the rate of application of water measured in inches per hour.

"Recycled water" or "reclaimed water" means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

"Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscaped area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

“Special Landscape Area” or “SLA” means 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.

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

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

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

“Swing joint” means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

“Water Efficient Landscape Ordinance” means Chapter 17.59 of the Rolling Hills Estates Municipal Code.

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

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

“WUCOLS” means the Water Use Classification of Landscape published by the University of California Cooperative Extension, the Department of Water Resources, and the Bureau of Reclamation, 2000. www.water.ca.gov/wateruseefficiency/docs/wucols00.pdf