DEVELOPMENT SERVICES DEPARTMENT

PLANNING DIVISION

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March 15, 2010

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

RE: Water Efficient Landscape Ordinance – City of San Bernardino

Dear Mr. Eching:

Thank you for your assistance and guidance on local agency compliance with AB 1881. Ordinance No. MC-1320 of the City of San Bernardino, approved on December 21, 2009 with final adoption on January 4, 2010, is enclosed. This ordinance adds Chapter 17.07 to the San Bernardino Municipal Code as the Water Efficient Landscape Ordinance.

You may contact me at (909) 384-5057 extension 3330 or at rahhal_te@sbcity.org.

Sincerely,

T. Rahhal

Terri Rahhal, Deputy Director/City Planner

Enclosure

Adopted: January 4, 2010
Effective: February 4, 2010

ORDINANCE NO. MC-1320

AN ORDINANCE OF THE CITY OF SAN BERNARDINO ADDING CHAPTER 17.07 TO THE SAN BERNARDINO MUNICIPAL CODE AS THE WATER EFFICIENT LANDSCAPE ORDINANCE.

THE MAYOR AND COMMON COUNCIL OF THE CITY OF SAN BERNARDINO DO ORDAIN AS FOLLOWS:

WHEREAS, Section 40(z) of the Charter of the City of San Bernardino vests the Mayor and Common Council with the power to make and enforce all laws and regulations with respect to municipal affairs, subject only to the restrictions and limitations provided in the Charter or by State law; and

WHEREAS, the State Legislature has found that the waters of the State of California are of limited supply, are subject to ever-increasing demands; and

WHEREAS, the State Legislature has also found that landscapes are essential to the quality of life in California, by providing areas for active and passive recreation and as an enhancement to the environment by cleaning the air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development; and

WHEREAS, 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; and

WHEREAS, California Government Code Section 65593(c) provides: "It is the policy of the state to promote the conservation and efficient use of water and to prevent the waste of this valuable resource"; and

WHEREAS, California Government Code Section 65593(e) provides: "Landscape design, installation, maintenance and management can and should be water efficient"; and

WHEREAS, it is the policy of the City of San Bernardino to promote water conservation and to continually monitor and improve water conservation efforts to ensure effective protection of water resources;

NOW THEREFORE, THE MAYOR AND COMMON COUNCIL OF THE CITY OF SAN BERNARDINO DO ORDAIN AS FOLLOWS:

SECTION 1. The Mayor and Common Council hereby find that the above-stated recitals are true and hereby adopt and incorporate them herein.

SECTION 2. The Mayor and Common Council hereby find that this Water Efficient Landscape Ordinance is at least as effective in conserving water as the model ordinance adopted by the State pursuant to California Government Code Section 65595.

SECTION 3. The Mayor and Common Council hereby find that this Ordinance is exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) of the CEQA Guidelines, as it can be seen with certainty that implementation of this Ordinance will not have a significant adverse effect on the environment.

SECTION 4. This Ordinance is based upon the recitals and findings set forth above, as supported by the accompanying Staff Report and attachments, including Exhibit A, attached hereto and incorporated herein, and this Ordinance is hereby adopted pursuant to the authority granted to the Mayor and Common Council of the City of San Bernardino in Article 11, Section 7 of the California Constitution, California Government Code Section 65595, and Sections 30 and 40(z) of the Charter of the City of San Bernardino.

SECTION 5. The Mayor and Common Council hereby direct the Development Services Department to implement the provisions of this Ordinance in the review and approval of development plans for new landscaping or landscape rehabilitation, as detailed in Exhibit A.

SECTION 6. The Mayor and Common Council hereby direct the Development Services Department to initiate a Development Code Amendment to modify Chapter 19.28, Landscaping Standards as necessary to maintain consistency with this Ordinance.

SECTION 7. Severability. If any section, subsection, sentence, clause or phrase in this Ordinance or any part thereof is for any reason held to be unconstitutional, invalid or ineffective by any court of competent jurisdiction, that determination shall not affect the validity or effectiveness of the remaining portions of this Ordinance or any part thereof. The Mayor and Common Council hereby declare that they would have adopted this ordinance and each section, sentence, clause, and part of this Ordinance despite the fact that one or more sections, sentences, clauses or parts of this Ordinance is declared invalid.

SECTION 8. Chapter 17.07, Water Efficient Landscape Ordinance, is hereby added to the San Bernardino Municipal Code, to read as shown on Exhibit A, attached hereto and incorporated herein.

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MC-1320

AN ORDINANCE OF THE CITY OF SAN BERNARDINO ADDING CHAPTER 17.07 TO THE SAN BERNARDINO MUNICIPAL CODE AS THE WATER EFFICIENT LANDSCAPE ORDINANCE.

I HEREBY CERTIFY that the foregoing ordinance was duly adopted by the Mayor and Common Council of the City of San Bernardino at a joint regular meeting thereof, held on the 4th day of January, 20 10, by the following vote to wit:

Council Members:	AYES	NAYS	ABSTAIN	ABSENT
ESTRADA	X			
BAXTER	X			
BRINKER	X			
SHORETT	X			
KELLEY	X			
JOHNSON	X			
MC CAMMACK	X			

Rachel G. Clark
City Clerk

The foregoing ordinance is hereby approved this 5th day of January, 2010.

PATRICK J. MORRIS, Mayor
City of San Bernardino

Approved as to form:

JAMES F. PENMAN
City Attorney

By: James F. Penman

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CHAPTER 17.07
WATER EFFICIENT LANDSCAPE ORDINANCE

17.07.010 Purpose and Intent

A. The purpose of this Chapter is to:

1. Promote the aesthetic and recreational values of landscapes, while recognizing the need to invest water resources as efficiently as possible;
2. Establish a structure for planning, designing, installing and maintaining water efficient landscapes in new construction and rehabilitated projects;
3. Establish provisions for water management practices and water waste prevention in the irrigation of existing landscapes;
4. Implement water quality management practices that minimize storm water and irrigation runoff, to achieve on-site infiltration and groundwater recharge;
5. Promote and encourage the use of low water use plants in landscapes;
6. Minimize the use of cool season turf;
7. Promote conservation of potable water by encouraging the use of recycled water and water-conserving technology in landscape irrigation;
8. Promote public education about water conservation and water efficient landscape irrigation.

B. The intent of this Chapter is to implement water efficient landscape regulations at least as effective as the state model ordinance adopted pursuant to California Government Code Section 65595.

17.07.020 Applicability

After January 1, 2010, the provisions of this Chapter shall apply as follows:

A. All provisions of this Chapter for planning, design, installation and management of new landscapes shall apply to the following new construction and rehabilitation landscape projects normally subject to building or landscaping plan review and permits:

1. Public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet;
2. Developer-installed single-family and multi-family residential projects with a landscape area equal to or greater than 2,500 square feet in the aggregate.
3. Homeowner-installed and/or homeowner-hired single-family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet;

B. Limited Applicability. Existing landscapes, cemeteries and certain Special Landscape Areas are exempt from some provisions of this Chapter, as follows:

1. Existing landscapes installed before January 1, 2010 and exceeding 1 acre in area are subject only to water waste prevention and efficient irrigation requirements of Sections 17.07.120 and 17.07.130.
2. New cemeteries or cemetery expansion projects exceeding 2,500 square feet in landscape area shall be subject to the Water Efficient Landscape worksheet requirement and the irrigation analysis and maintenance requirements of Section 17.07.090 and Section 17.07.100.
3. New development or rehabilitation of landscapes including Special Landscape Areas (SLA's), such as edible landscapes, landscapes irrigated with recycled water, and active parks or sport field landscaping shall be subject to the provisions of this Ordinance, except that the Maximum Applied Water Allowance (MAWA) shall be adjusted to provide for adequate irrigation of SLA's.

C. Exemptions. The provisions of this Chapter shall not apply to the following exempt landscapes:

1. Registered local, state or federal historical sites;
2. Ecological restoration projects that do not require permanent irrigation systems;
3. Mined land restoration projects that do not require permanent irrigation systems;
4. Botanical gardens and arboretums open to the public.

17.07.030 Landscape Design Standards and Planning Guidelines

For the efficient use of water, landscapes shall be carefully designed and planned to thrive in local soil and climatic conditions and to suit the intended function of the project. The following design guidelines shall also be considered in landscape planning:

A. Plant Selection:

1. Native plants and drought-tolerant species are encouraged to promote low-maintenance, water efficient landscapes.
2. Any plant may be used in the landscape, provided that the EAWU (estimated annual applied water use) does not exceed the MAWA (maximum annual applied water allowance).
3. Plants with similar water use requirements shall be grouped together in "hydrozones" whenever possible.

4. Turf areas should be minimal, limited mainly to active recreation areas and small lawns. Where turf is used, it should not be planted on slopes greater than 4:1, and warm season varieties are preferred.
5. Fire resistant plant species and fuel modification requirements shall be the top priority for landscape design in high fire hazard areas.
6. Invasive plant species should be avoided, especially near natural areas, fuel modification zones, parks and water bodies.
7. The use of mulch is encouraged to retain moisture.
8. Plant placement shall be planned to create shade in summer and permit solar gain in winter.
9. Plant size and root characteristics at maturity should be considered in plant selection and placement, to avoid damage to property or infrastructure.

B. Water Features:

1. Recirculating water systems shall be used for all decorative water features.
2. If available, recycled water should be used in decorative water features, except pools and spas.
3. The surface area of a water feature shall be included in the MAWA calculation with an evaporation rate equivalent to that of a high water use plant.
4. Pool and spa covers are highly recommended.

C. Content Requirements of Landscape Design Plans:

1. Each hydrozone shall be identified as a "low", "moderate", "high" or "mixed" water use zone.
2. Landscape areas with unique water budget considerations, such as recreation areas, areas dedicated to edible landscapes, and areas to be irrigated with recycled water shall be delineated.
3. Areas planned for soil amendments, mulch application, surface water features and hardscapes (pervious and impervious) shall be delineated with applicable notes regarding installation and design.
4. On-site design measures for storm water quality management shall be identified to demonstrate consistency with the corresponding Water Quality Management Plan (WQMP).

17.07.040 Irrigation Requirements

A. All irrigation systems shall be designed and maintained to prevent runoff, over-spray, low head drainage and other conditions of water waste. Soil types and infiltration rates shall be considered when designing irrigation systems, and irrigation plans shall be designed to meet specific water needs of each hydrozone, to maximize the efficiency of the irrigation system.

B. Dedicated (separate) landscape water meters shall be installed at new project sites with landscape areas greater than 5,000 square feet, subject to concurrence of the water purveyor.

C. The following equipment shall be required to control water waste in new irrigation systems subject to this Ordinance:

1. Automatic irrigation controllers that utilize evapotranspiration or soil moisture sensor data to adjust the frequency and/or duration of irrigation in response to changing weather conditions;
2. Rain sensors with automatic shut-off features;
3. Anti-drain check valves to prevent low-head drainage in sprinkler heads;
4. Pressure regulators as needed when the static water pressure exceeds the maximum recommended operating pressure; and
5. Manual shut-off valves located as close as possible to the point of connection to the water supply, to minimize water loss in case of an emergency or a routine repair.

D. Irrigation Design Standards:

1. The irrigation system shall be designed and installed to conform to the project water budget (MAWA), based on planting plans for the project hydrozones;
2. Overhead irrigation shall not be permitted within a 24-inch setback from any non-permeable surface. Allowable irrigation within such setback areas may include drip, drip line or other low flow, non-spray technology. The setback may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
   (a) the landscape area is adjacent to permeable surfacing and no runoff occurs; or
   (b) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
   (c) the irrigation designer specifies an alternative design or technology as part of the Landscape Documentation Package, and clearly demonstrates compliance with the requirements of this Ordinance.
3. Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the irrigation designer specifies an alternative design or technology as part of the Landscape Documentation Package, and clearly demonstrates that no excess runoff or erosion will occur. This demonstration shall be confirmed by an irrigation audit.

E. The irrigation plan shall be prepared separate from the landscape planting plan, but it shall be consistent with the planting plan and shall conform to all requirements of this Ordinance.

F. A Water Management Plan shall be prepared to accompany the irrigation plan, in accordance with the requirements of this Ordinance. The Water Management Plan shall describe the irrigation system in detail, identify parties responsible for maintenance of the irrigation system, and set a plan and schedule for management of the system.

G. Recycled Water. Dual water distribution systems allowing irrigation with recycled water are encouraged, and may be required to be installed on new construction sites, at the discretion of the water purveyor, and subject to availability.

17.07.050 Landscape Soil Management and Landscape Grading Requirements

A. Soil testing shall be performed after mass grading and prior to landscape installation, to ensure the selection of plant materials that are suitable for the site. The soil analysis shall be incorporated in a soil management plan, including the following:

4. A determination of soil texture, indicating the available water holding capacity;
5. An approximate soil infiltration rate, or a range of infiltration rates;
6. Measures of pH and total soluble salts; and
7. Soil management and amendment recommendations.

B. Grading of landscape areas shall be designed to minimize unnecessary soil compaction, erosion and water waste. Landscape grading shall be designed to prevent runoff, avoid disruption of natural drainage patterns and to support on-site infiltration of storm water and irrigation for water quality management.

17.07.060 Landscape Plan Submittal Requirements

A Landscape Documentation Package prepared by a licensed landscape architect shall be required for any new construction of landscape or landscape rehabilitation that is normally subject to building or landscape plan review and permits. The Landscape Documentation Package shall contain the following elements:

A. Project information:

1. Date;
2. Project applicant;
3. Project address or location;
4. Total landscape area in square feet;
5. Project type (e.g. new, rehabilitated, public, private, developer or homeowner installed, cemetery, park, etc.);
6. Water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor;
7. Checklist of all documents in the Landscape Documentation Package;

8. Contact information for the project applicant and property owner;
9. Applicant signature, dated with the statement, "I agree to comply with the requirements of the Water Efficient Landscape Ordinance and submit a complete Landscape Documentation Package".

B. Water Efficient Landscape Worksheet. Worksheet examples, sample calculations and the Reference Evapotranspiration (ETo) Table for the City of San Bernardino are available in the Development Services Department to guide preparation of required elements of the Water Efficient Landscape Worksheet, including:

1. Hydrozone information table;
2. Water budget calculations:
   (a) Maximum Applied Water Allowance (MAWA)
   (b) Estimated Total Water Use (ETWU);

C. Landscape design plan, prepared according to Section 17.07.030;

D. Irrigation design plan, prepared according to Section 17.07.040;

E. Soil management report, prepared according to Section 17.07.050 (A); and

F. Grading design plan, prepared according to Section 17.07.050 (B).

17.07.070 Compliance Documentation

A. Certificate of Completion. Prior to issuance of a Certificate of Occupancy or final inspection for a new construction project or a landscape rehabilitation project, a Certificate of Completion shall be submitted to the City, signed by a licensed landscape architect to certify that:

1. The landscaping has been installed in conformance with the approved planting and irrigation plans;
2. The automatic irrigation controller has been set according to the irrigation schedule;
3. The irrigation system has been adjusted to maximize irrigation efficiency and eliminate over-spray and runoff; and
4. A copy of the irrigation schedule has been given to the property owner.

B. Completed Landscape Documentation Packages and Certificates of Completion shall be made available for review by the water purveyor. Sites found to be out of compliance with the provisions of this Ordinance may be subject to landscape water audits and compliance enforcement by the water purveyor.

17.07.080 Irrigation Scheduling

A. For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

1. Irrigation scheduling shall be regulated by automatic irrigation controllers.
2. Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
3. For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.

17.07.090 Landscape and Irrigation Maintenance Schedule

A. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.

B. A regular maintenance schedule shall 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; weeding in all landscape areas, and removing any obstruction to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

C. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.

D. A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

17.07.100 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis

A. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

B. For new landscape construction and rehabilitated landscape projects installed after January 1, 2010:

1. The project applicant shall submit an irrigation audit report with the Certificate of Completion to the City that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule;
2. The City or the water purveyor may conduct or require an irrigation water use analysis, irrigation audit, or irrigation survey for compliance with the Maximum Applied Water Allowance (MAWA).

C. For existing landscapes that were installed before January 1, 2010 and are over one acre in size, the City or the water purveyor may require irrigation water use analyses, irrigation surveys, and irrigation audits to evaluate water use and provide recommendations as necessary to reduce landscape water use to a level that does not exceed the Maximum Applied Water Allowance for existing landscapes. The Maximum Applied Water Allowance for existing landscapes shall be calculated as: MAWA = (0.8) (ETo)(LA)(0.62). All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

17.07.110 Irrigation Efficiency

A. For the purpose of determining Maximum Applied Water Allowance, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.

17.07.120 Provisions for Existing Landscapes

A. The City or the water purveyor may enforce the requirements contained in this Ordinance, and may assess penalties for water waste in existing landscapes constructed prior to January 1, 2010.

17.07.130 Water Waste Prevention

A. Water waste resulting from inefficient landscape irrigation is prohibited. Runoff of irrigation water into the public right-of-way, caused by low head drainage, broken sprinkler heads, overspray, or other similar conditions shall be prohibited. Overspray or runoff onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures shall be prohibited. Restrictions regarding overspray and runoff may be modified if:

1. the landscape 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.

17.07.140 Definitions

The terms used in this ordinance have the meaning set forth below:
(a) "applied water" means the portion of water supplied by the irrigation system to the landscape.
(b) "automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
(c) "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.
(d) "Certificate of Completion" means the document required under Section 17.07.070.
(e) "certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution, a professional trade organization, or other program such as the US Environmental Protection Agency's WaterSense irrigation designer certification program and Irrigation Association's Certified Irrigation Designer program.
(f) "certified landscape irrigation auditor" means a 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.
(g) "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.
(h) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.
(i) "conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year
(j) "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.
(k) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
(l)"effective precipitation" or "usable rainfall" (Eppt) means the portion of total precipitation which becomes available for plant growth.
(m) "emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.
(n) "established landscape" means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.
(o) "establishment period of the plants" means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.

(p) "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 17.07.060(B).
(q) "ET adjustment factor" (ETAF) means a factor of 0.7, 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.
A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is (0.7)=(0.5/0.71). ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.
(r) "evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.
(s) "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.
(t) "hardscapes" means any durable material (pervious and non-pervious).
(u) "homeowner-provided landscaping" means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner. A homeowner, for purposes of this ordinance, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.
(v) "hydrozone" means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.
(w) "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).
(x)"invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. "Noxious weeds" means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.
(y) "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.
(z) "irrigation efficiency" (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.
(aa) "irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

(bb) "irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.
(cc) "landscape architect" means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.
(dd) "landscape area" means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. 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 non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).
(ee) "landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.
(ff) "Landscape Documentation Package" means the documents required under Section 17.07.060.
(gg) "landscape project" means total area of landscape in a project as defined in "landscape area" for the purposes of this ordinance, meeting requirements under Section 17.07.020.
(hh) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
(ii) "local agency" means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. The local agency is also responsible for the enforcement of this ordinance, including but not limited to, approval of a permit and plan check or design review of a project.
(jj) "local water purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.
(kk) "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.
(ll) "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.
(mm) "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 17.07.060(B). It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ETAF not to exceed 1.0.
(nn) "microclimate" means 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.
(oo) "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.

(pp) "mulch" means any organic material such as leaves, bark, straw, compost, or 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.
(qq) "new construction" means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.
(rr) "operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
(ss) "overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).
(tt) "overspray" means the irrigation water which is delivered beyond the target area.
(uu) "permit" means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.
(vv) "pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.
(ww) "plant factor" or "plant water use factor" is a factor , when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, 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 ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".
(xx) "precipitation rate" means the rate of application of water measured in inches per hour.
(yy) "project applicant" means the individual or entity submitting a Landscape Documentation Package required under Section 17.07.060, to request a permit, plan check, or design review from the City. A project applicant may be the property owner or his or her designee.
(zz) "rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.
(aaa) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.
(bbb) "recreational area" means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.
(ccc) "recycled water", "reclaimed water", or "treated sewage effluent 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.
(ddd) "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 sample materials referenced in Section 17.07.060(B), and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.

(eee) "rehabilitated landscape" means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 17.07.020, and the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area, and the modifications are completed within one year.
(fff) "runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape 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.
(ggg) "soil moisture sensing device" or "soil moisture sensor" means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.
(hhh) "soil texture" means the classification of soil based on its percentage of sand, silt, and clay.
(iii)"Special Landscape Area" (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.
(jjj) "sprinkler head" means a device which delivers water through a nozzle.
(kkk) "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.
(lll) "station" means an area served by one valve or by a set of valves that operate simultaneously.
(mmm) "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.
(nnn) "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.
(ooo) "valve" means a device used to control the flow of water in the irrigation system.
(ppp) "water conserving plant species" means a plant species identified as having a low plant factor.
(qqq) "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 landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.
(rrr) "watering window" means the time of day irrigation is allowed.
(sss) "WUCOLS" means 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.