

RESOLUTION NO: 15-025

RESOLUTION OF THE PLANNING COMMISSION
OF THE CITY OF PASO ROBLES
RECOMMEND THAT THE CITY COUNCIL APPROVE
ZONING CODE AMENDMENT 15-004
AMENDING SECTION 21.22.B,
LANDSCAPE AND IRRIGATION ORDINANCE

WHEREAS, in December 2009, the City adopted Ord.964 N.S. establishing Section 21.22B of the Zoning Code, Landscape and Irrigation Ordinance; and

WHEREAS, the need to update the Ordinance is in response to Governor Brown's Executive Order of April 1, 2015 (EO B-29-15) requiring cities to update their Water Efficient Landscape Ordinances to comply with the State requirements; and

WHEREAS, the goal of the Ordinance is to achieve a significant reduction in landscape water use in new development, in support of the City's long term water consumption goals; and

WHEREAS, all cities and counties have until December 1, 2015, to either adopt the state's updated Model Water Efficient Landscape Ordinance (MWELo) or update their own local water efficient landscape ordinance; and

WHEREAS, a draft local ordinance has been prepared and provides requirements that:

- Are as effective at achieving water savings as the MWELo; and,
- Reduces the costs for new homes compared to the State's requirements; and,
- Reduces the City's administrative costs compared to the State's MWELo approach; and,

SECTION 1. Planning Commission Findings.

The Planning Commission finds that:

- a. It is necessary to amend the Zoning Ordinance in order to comply with Governor Brown's Executive Order of April 1, 2015 (EO B-29-15) requiring cities to update their Water Efficient Landscape Ordinances to comply with the State requirements;
- b. The proposed code amendment would meet the City's policy to promote the conservation and efficient use of water and to prevent waste of this valuable resource;
- c. Consistent with California Law, the purpose of this ordinance is to promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;

- d. Consistent with California Law, the purpose of this ordinance is to establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects.
- e. The reduction is estimated to be at least as effective as the States Model Water Efficient Landscape and Irrigation Ordinance as a result of the turf limitations and limitations on overhead spray irrigation for all projects including single family residential.

SECTION 2: Chapter 21.22B, Water Efficient Landscape Ordinance is amended, as shown in Exhibit A.

NOW, THEREFORE, BE IT RESOLVED, that the Planning Commission of the City of El Paso de Robles, does hereby recommend that the City Council grant approval of Zoning Code Amendment 15-004, to adopt the Draft Water Efficient Landscape Ordinance.

PASSED AND ADOPTED THIS 27th day of October, 2015 by the following Roll Call Vote:

AYES: Rollins, Donaldson, Burgett, Cooper, Barth, Vanderlip

NOES: None

ABSENT: Brennan

ABSTAIN: None

ATTEST:



WARREN FRACE, SECRETARY OF THE PLANNING COMMISSION



VINCE VANDERLIP, CHAIRMAN

Exhibit A

Chapter 21.22B

LANDSCAPE and IRRIGATION ORDINANCE

Sections:

21.22B.010	Purpose
21.22B.020	Definitions
21.22B.030	Applicability
21.22B.040	Turf Limitations for New Construction and Rehabilitated Landscapes
21.22B.050	Landscape and Irrigation System Design Requirements

21.22B.010 Purpose

Consistent with California State Law, it is the purpose of this ordinance to: (a) promote the values and benefits of landscapes while recognizing the need to use water resources as efficiently as possible; (b) establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects.

21.22B.020 Definitions (Definitions related to the technical information of the Landscape Documentation Package are provided as Attachment 5, of the Landscape and Irrigation Design Guide):

“Certificate of Completion” means the document required under Section 21.22B.050.B.4.

“Compost” means the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth.

“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.

“Estimated Total Water Use” (ETWU) means the total water used for the landscape as calculated in the Water Efficient Landscape Worksheet.

“ET adjustment factor” (ETAF) means a factor of 0.55 for residential areas and 0.45 for nonresidential areas, 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. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

“Flow sensor” means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves.

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“Front yard” means a yard extending across the front of the lot between the inner side yard lines and measured from the front line of the lot to the nearest line of the building; provided, that if any building line or official plan line has been established for the street upon which the lot faces, then such measurement shall be taken from the such building line or official plan line to the nearest line of the building.

“Irrigation efficiency” 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. For purposes of this ordinance, irrigation efficiencies are 0.75 for overhead spray devices and 0.81 for drip systems.

“Landscape Architect” means a person who holds a license to practice landscape architecture in the State of California as described in the Business and Professions Code, §5615.

“Landscaped 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).

“Landscape contractor” means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

“Landscape Documentation Package (LDP)” means the documents required under Section 21.22B.050.

“Landscape water meter” means an inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

“Landscape project” means total area of landscape in a project as defined in “landscape area” for the purposes of this ordinance.

“Master shut-off valve” is a valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed water will not be supplied to the irrigation system. A master valve will greatly reduce any water loss due to a leaky station valve.

“Maximum Applied Water Allowance” (MAWA) means the upper limit of annual applied water for the established landscaped area as calculated as calculated in the Water Efficient Landscape Worksheet.

“Multi-family Residential” means two or more attached residential units. Landscape areas for multiple detached units on one parcel will be considered single family units for the purposes of this Ordinance.

“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.

“Permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

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

“Project applicant” means the individual or entity submitting a Landscape Documentation Package required under Section 21.22B.050.B.3, to request a permit, plan check or design review from the local agency. A project applicant may be the property owner or his or her designee.

“Rehabilitated landscape” means any re-landscaping project that requires a permit, plan check, or design review.

“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.

“Single Family Residential” one home on one lot, or multiple detached units on one lot (not attached).

“Street Side Yard”: means the side yard of a corner lot that is adjacent to a street, extending across the full width of the lot and measured between the rear line of the lot and nearest line of the main building.

“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.

“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 the irrigation system.

“Water conserving plant species” means a climate-adapted plant species identified as having a low plant factor (WUCOLS plant factor of 0.3 or less).

“Water Efficient Landscape Worksheet” means calculations of MAWU and ETWU using specific landscape hydrozone areas, plant factors in accordance with WUCOLS, and irrigation efficiencies, ETAFs, and regional evapotranspiration rate in accordance with Attachment XX, Landscape and Irrigation Design Guide.

“WUCOLS” means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, and the Department of Water Resources.

21.22B.030 Applicability

The requirements within this Chapter apply to new construction and rehabilitated landscapes for commercial, industrial and residential projects that are subject to the development review process and/or a building permit.

A. Development Review Process

In conjunction with the submittal of a project for development review (tentative parcel map, tentative tract, development plan or conditional use permit), conceptual landscape plans shall be provided that demonstrate that the design of the landscaping complies with the standards within this Ordinance. These plans shall be reviewed by City Staff during the development review process.

B. Building Permit

In conjunction with the submittal of a project for building plan check, final landscape and irrigation plans, in compliance with this Ordinance, shall be submitted with the project. After a plan check review by the Planning and/or Public Works Departments for compliance with this Ordinance, a Building Permit may be issued. Fees consistent with the fees established for building plan check will be applied for staff review of the landscape and irrigation plan.

C. Certificate of Completion

Once the landscape and irrigation plans and necessary documentation have been provided in substantial compliance with the LDP, a Certificate of Completion may be issued. A Certificate of Completion shall be issued prior to the project receiving a Certificate of Occupancy by the Building Division.

D. Landscape and Irrigation Installation

For both projects less than or greater than 0.5 acre, the landscape and irrigation shall be installed per the approved plans prior to the issuance of a Certificate of Occupancy or “final” of the building/project.

E. Landscape Bond

For projects that have a landscape area of 0.5 acre or greater, a bond may be posted which would allow a building to be finalized and a Certificate of Occupancy to be issued prior to the site landscape and irrigation being completed. The bond shall be based on an estimate for labor and materials to complete the landscape and irrigation project per the approved plans, plus an additional 25-percent. The applicant shall fill out the Landscape Bond Security Bond Agreement along with the necessary bonding information, to the Public Works Department for review and approval to determine the specific bond amount.

For projects that have a landscape area of less than 0.5 acre, the Community Development Director or his or her designee may approve a bond to be posted which would allow a building

to be finalized and a Certificate of Occupancy to be issued prior to the site landscape and irrigation being completed.

21.22B.040 Turf Limitations for New Construction and Rehabilitated Landscapes.

A. All new construction projects (residential, commercial, industrial) shall comply with the following limitations:

1. Turf areas less than 10 ft. in width in any direction are prohibited, unless subsurface irrigation is used and maximum turf areas do not exceed the percentages outlined in this ordinance.
2. Turf shall be prohibited within the public right-of-way, including parkways.
3. Developments shall be graded to maximize the on-site distribution of runoff to planted areas.
4. For non-turf areas, drip irrigation methods and water conserving plant species shall be used.
5. Landscapes and irrigation systems shall comply with the requirements of Section 21.22B.050.
6. Covenants, Conditions and Restrictions (CCRs) shall not require turf landscaping nor have the effect of prohibiting low-water use landscaping and shall include by reference and/or attachment a copy of Chapter 21.22B, City of Paso Robles Landscape Ordinance.

B. Commercial and Industrial projects:

1. Water conserving plant species irrigated with a drip irrigation system shall be used for 100% of the development's landscaped area, excluding edibles and areas using recycled water.
2. Exceptions: This section does not apply to Cemeteries, plant collections as part of botanical gardens and arboretums open to the public, City parks, and school sports fields.

C. Single Family Residences

1. Turf grass installed with spray irrigation shall be prohibited in residential front yard and street side yards, and shall be limited to 25 percent of the landscaped area in back and side yards.
2. The common areas in residential subdivisions (including landscape and lighting district areas) shall be planted with water conserving plant species irrigated with drip irrigation . (Excluding active play areas such as ball fields, playgrounds, and picnic areas).

D. Model Homes

1. Turf grass shall be prohibited in the front yards of model homes, and shall be limited to 25 percent of the landscaped area in back and side yards.
2. Model homes shall be used to educate future home owners about water efficient landscape and irrigation techniques. Education features for Model homes shall include:
 - (a) The installation of interpretive landscape information signs that describe the principles of water efficient landscapes including features such as hydrozones, appropriate irrigation equipment and others techniques that contribute to the overall water efficient irrigation theme.
 - (b) Information shall be provided to new home owners that includes techniques on designing, installing, managing, and maintaining water efficient landscapes, and complying with this ordinance.

E. Multi-family Residential Projects

1. Turf grass shall be limited to 20 percent of the landscaped area. The 20 percent limitation shall be exclusive of areas designed as active play surfaces (e.g. ballfields, playgrounds, picnic areas).

F. Rehabilitated Landscapes

1. Rehabilitated landscapes shall comply with the turf limitations outlined in Sections A-E above, as appropriate to the property type.

21.22B.050 Landscape and Irrigation System Design and Information Requirements

A. All project landscaping and irrigation plans/designs shall comply with the following standards:

1. The following documents and plans shall be submitted prior to the issuance of a Building Permit for the associated project (Please refer to the Landscape & Irrigation Design Guide for specific forms and criteria):
 - Project Information
 - Water Efficient Landscape Worksheet
 - Landscape Design Plans
 - Irrigation Design Plans
2. The Estimated Total Water Use (ETWU) calculated in the Water Efficient Landscape Worksheet shall not exceed Maximum Applied Water Allowance (MAWA).
3. ET adjustment factor (ETAF) calculated in the Water Efficient Landscape Worksheet shall not exceed 0.55 for residential projects and 0.45 for non-residential projects.

4. Utilize rain sensors, either integral or auxiliary, that suspend irrigation during and after rainfall events, shall be required on all irrigation control systems.
5. Prohibit turf on slopes greater than 20% where the toe of the slope is adjacent to an impermeable hardscape. (where 20% means 1 foot of vertical elevation change for every 5 feet of horizontal length rise divided by run X 100 = slope percent).
6. Water features shall use recirculating water systems.
7. Prohibit overhead spray irrigation within 24 inches of a non-permeable surfaces such as but not limited to concrete sidewalks and driveways. Subsurface irrigation may be used as long as other requirements of this ordinance are met. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low-flow non-spray type of systems. The setback area may be planted or non-planted. The surfacing of the setback may be mulch, gravel, cobbles, or other permeable material. These restrictions may be modified if the landscape area is adjacent to permeable surfacing, and no runoff occurs or the adjacent non-permeable surface drains entirely to landscaped areas.
8. Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of six inches into the landscape area (unless contra-indicated by soil test).
9. Irrigation systems shall be designed and constructed to achieve a minimum efficiency of 75 percent for overhead spray devices and 0.81 for drip systems.
10. All irrigation system shall include pressure regulators and a master shut-off valve. All irrigation emitters shall meet the requirements set in the ANSI standard, ASABE/ICC 802-2014. "Landscape Irrigation Sprinkler and Emitter Standard," All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.
11. Irrigation systems serving non-residential landscape areas larger than 1,000 square feet shall:
 - Be served by a dedicated landscape meter
 - Incorporate dedicated flow sensors that detect and report high flow conditions due to broken pipes and sprinkler heads.
12. Apply a minimum two inch (3") layer of mulch on all exposed soil surface of planting areas.
13. The architectural guidelines and Covenants, Conditions, and Restrictions of common interest developments shall not have the effect of prohibiting the use of low-water use plants or requiring turf grass in landscaped areas.

B. Projects that have a landscape area equal to or greater than 0.5 acre need to submit the flowing information and shall comply with the following standards and conditions:

Please note that the landscape area for new residential subdivisions will be calculated on an individual lot basis as each lot develops, not a total of landscape areas prior to subdivision. If there are common areas, or areas within a Landscape and Lighting District that have landscape areas 0.5 acre or greater, there will be a requirement for an LDP for those areas to be completed prior to the recordation of the final map.

1. All of the items identified in Section A above shall apply.
2. Weather-based irrigation controllers, soil moisture-based controllers, or other self-adjusting irrigation controllers shall be required for irrigation scheduling.
3. The following documents and plans shall be submitted prior to the issuance of a Building Permit for the associated project (Please refer to the Landscape & Irrigation Design Guide for specific forms and criteria):

Compliance with Landscape Documentation Package which includes completion of the following items:

- Project Information
 - Water Efficient Landscape Worksheet
 - Soil Management Report
 - Landscape Design Plan
 - Irrigation Design Plan
 - Grading Design Plan
4. The following documents and plans shall be completed and the landscape and irrigation project shall be installed prior to the issuance of a Certificate of Occupancy for the associated project (Please refer to the Landscape & Irrigation Design Guide for specific forms and criteria):

Certificate of Completion which includes documentation of the following items:

- Irrigation Scheduling
- Landscape and Irrigation Maintenance Schedule
- Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis
- Irrigation Efficiency
- Stormwater Management

The Project Applicant shall be responsible for costs of City audits, inspections, surveys, analyses, design changes, additional reviews, and resubmittals necessary for compliance with this ordinance.



**COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION
LANDSCAPE AND IRRIGATION
DESIGN GUIDE**

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Chapter 21.22B of the Zoning Code requires the following:

- The Landscape Documentation Package be submitted in conjunction with or prior to the submittal of construction drawings for building plan check.
- A Certificate of Completion needs to be issued by the City prior to issuance of a Certificate of Occupancy of the associated project/building.

LANDSCAPE DOCUMENT PACKAGE

The Landscape Documentation Package shall include the following six (6) elements:

- ☐ 1. **COMPLETED APPLICATION FORM:** Fill out Standard Development Application Form from Community Development Department. (Attachment 1)
- ☐ 2. **WATER EFFICIENT LANDSCAPE WORK SHEET:**

A project applicant shall complete the Water Efficient Landscape Worksheet which contains two sections (see sample worksheet Attachment 3):

 - ☐ 1. A hydrozone information table (Attachment 3, Section A) for the landscape project; and
 - ☐ 2. A water budget calculation (Attachment 3, Section B) for the landscape project. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use (Attachment 3, Section C), a project applicant shall use the ETo values from the Reference Evapotranspiration Table (Attachment 2, Section A).

B. Water budget calculations shall adhere to the following requirements:

 - ☐ 1. The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants and from 0.7 to 1.0 for high water use plants.
 - ☐ 2. All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.
 - ☐ 3. All Special Landscape Areas shall be identified and their water use calculated as described below.
 - ☐ 4. ETAF for Special Landscape Areas shall not exceed 1.0.

C. Maximum Applied Water Allowance

The Maximum Applied Water Allowance shall be calculated using the equation;

$$MAWA = (ET_o) (0.62) [(0.7 \times LA) + (0.3 \times SLA)]$$

See Example Calculations, Attachment 2
- ☐ 3. **SOIL MANAGEMENT REPORT:**

In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant, or his/her designee, as follows:

 - ☐ 1. Submit soil samples to a laboratory for analysis and recommendations.
 - a. Soil sampling shall 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 project applicant, or his/her designee, shall comply with one of the following:
 - a. If significant mass grading is not planned, the soil analysis report shall be submitted to the local agency as part of the Landscape Documentation Package; or
 - b. If significant mass grading is planned, the soil analysis report shall be submitted to the local agency as part of the Certificate of Completion.
- ☐ 3. The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.
- ☐ 4. The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

☐ 4. **LANDSCAPE DESIGN PLAN:**

For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

- ☐ 1. **Plant Material**
 - a. Any plant may be selected for the landscape, providing the Estimated Total Water Use in the landscape area does not exceed the Maximum Applied Water Allowance. To encourage the efficient use of water, the following is highly recommended:
 - b. protection and preservation of native species and natural vegetation;
 - c. selection of water-conserving plant and turf species;
 - d. selection of plants based on disease and pest resistance;
 - e. selection of trees based on applicable local tree ordinances or tree shading guidelines; and
 - f. selection of plants from local and regional landscape program plant lists.
 - b. Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use.
 - c. Plants shall 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:
 - 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, power lines]; and
 - 3. Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
 - d. Turf is not allowed on slopes greater than 20% where the toe of the slope is adjacent to an impermeable hardscape and where 20% 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 shall address fire safety and prevention. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches.
- f. The use of invasive and/or noxious plant species is strongly discouraged.
- g. The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

☐ 2. Water Features

- a. Recirculating water systems shall be used for water features.
- b. Where available, recycled water shall be used as a source for decorative water features.
- c. Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.
- d. Pool and spa covers are highly recommended.

☐ 3. Mulch and Amendments

- a. A minimum two inch (2") layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications where mulch is contraindicated.
- b. Stabilizing mulching products shall be used on slopes.
- c. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.
- d. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.

☐ 4. The landscape design plan, at a minimum, shall:

- ☐ a. delineate and label each hydrozone by number, letter, or other method;
- ☐ b. identify each hydrozone as low, moderate, high water or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation.;
- ☐ c. identify recreational areas;
- ☐ d. identify areas permanently and solely dedicated to edible plants;
- ☐ e. identify areas irrigated with recycled water;
- ☐ f. identify type of mulch and application depth;
- ☐ g. identify soil amendments, type, and quantity;
- ☐ h. identify type and surface area of water features;
- ☐ i. identify hardscapes (pervious and non-pervious);
- ☐ j. identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater best management practices are encouraged in the landscape design plan and examples include, but are not limited to:
 - 1. infiltration beds, swales and basins that allow water to collect and soak into the ground;
 - 2. constructed wetlands and retention ponds that retain water, handle excess flow and filter pollutants; and
 - 3. pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.
- ☐ k. identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
- ☐ l. contain the following statement: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan;" and

- ☐m. bear the signature of a licensed landscape architect, licensed landscape contractor or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

☐ **5. IRRIGATION DESIGN PLAN:**

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

☐1. Irrigation System

- ☐A. Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet to facilitate water management.
- ☐B. Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
- ☐C. The irrigation system shall 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 shall 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 shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.
- ☐D. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
- ☐E. Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be 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.
- ☐F. Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
- ☐G. High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- ☐H. The irrigation system shall 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.
- ☐I. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
- ☐J. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.

- ☐K. The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.
- ☐L. It is highly recommended that the project applicant or local agency inquire with the 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.
- ☐M. In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
- ☐N. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
- ☐O. Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- ☐P. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
- ☐Q. Check valves or anti-drain valves are required for all irrigation systems.
- ☐R. Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation system.
- ☐S. Overhead irrigation shall not be 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 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; or
 3. the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section IV.F (1) (H). Prevention of overspray and runoff must be confirmed during the irrigation audit.
- ☐T. Slopes greater than 20% 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 landscape designer 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 shall 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 shall be selected based on what is appropriate for the plant type within that hydrozone.

- ☐C. Where feasible, trees shall 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. plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
 2. the plant factor of the higher water using plant is used for calculations.
 - ☐E. Individual hydrozones that mix high and low water use plants shall not be permitted.
 - ☐F. On the landscape design plan and irrigation design plan, hydrozone areas shall 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. Use this valve number in the Hydrozone Information Table (see Attachment 3, Section A). This table can also assist with the irrigation audit and programming the controller.
- ☐3. The irrigation design plan, at a minimum shall contain:
- ☐A. location and size of separate water meters for landscape;
 - ☐B. 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;
 - ☐C. static water pressure at the point of connection to the public water supply;
 - ☐D. flow rate (gallons per minute), application rate (inches per hour) and design operating pressure (pressure per square inch) for each station;
 - ☐E. recycled water irrigation systems (if applicable);
 - ☐F. the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan," and
 - ☐G. the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor or any other person authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

☐ 6. **GRADING DESIGN PLAN:**

For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff and water waste. A grading plan shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.

- ☐1. The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
- ☐A. Height of graded slopes;
 - ☐B. Drainage patterns;
 - ☐C. Pad elevations;
 - ☐D. Finish grade;
 - ☐E. Stormwater retention improvements, if applicable.

- ☐ 2. To prevent excessive erosion and runoff, it is highly recommended that project applicants:
- ☐ A. Grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
 - ☐ B. Avoid disruption of natural drainage patterns and undisturbed soil; and
 - ☐ C. Avoid soil compaction in landscape areas.
- ☐ 3. The grading design plan shall contain the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan" and shall bear the signature of a licensed professional as authorized by law.

CERTIFICATE OF COMPLETION

- ☐ 1. The project applicant shall:
- ☐ 1. Submit the signed Certificate of Completion to the City for review;
 - ☐ 2. Ensure that copies of the approved Certificate of Completion are submitted to the property owner or his or her designee.

The City will:

- ☐ 1. Receive the signed Certificate of Completion from the project applicant;
- ☐ 2. Approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the local agency shall provide information to the project applicant regarding reapplication, appeal or other assistance.

The Certificate of Completion (see Attachment 4 for certificate form) shall include the following six (6) elements:

- ☐ 1. Project information sheet that contains:
 - Standard Development Application Form from the Community Development Department;
- ☐ 2. Certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;
 - Where there have been significant changes made in the field during construction, these "as-built" or record drawings shall be included with the certification;
- ☐ 3. Irrigation scheduling parameters used to set the controller;
- ☐ 4. Landscape and irrigation maintenance schedule;
- ☐ 5. Irrigation audit report; and
- ☐ 6. Soil analysis report, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations.

☐ 2. **IRRIGATION SCHEDULING:**

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 7:00 p.m. and 9:00 a.m. unless weather conditions prevent it. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance, only when audit and maintenance staff are present.
- ☐ 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.

- ☐ 4. Parameters used to set the automatic controller shall be developed and submitted for each of the following:
- The plant establishment period;
 - The established landscape; and
 - Temporarily irrigated areas.
- ☐ 5. Each irrigation schedule shall consider for each station all of the following that apply:
- Irrigation interval (days between irrigation);
 - Irrigation run times (hours or minutes per irrigation event to avoid runoff);
 - Number of cycle starts required for each irrigation event to avoid runoff;
 - Amount of applied water scheduled to be applied on a monthly basis;
 - Application rate setting;
 - Root depth setting;
 - Plant type setting;
 - Soil type;
 - Slope factor setting;
 - Shade factor setting; and
 - Irrigation uniformity or efficiency setting.

☐ **3. LANDSCAPE AND IRRIGATION MAINTENANCE SCHEDULE:**

- ☐ 1. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.
- ☐ 2. 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 obstruction to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
- ☐ 3. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.
- ☐ 4. A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

☐ **4. IRRIGATION AUDIT, IRRIGATION SURVEY AND IRRIGATION WATER USE ANALYSIS:**

- ☐ 1. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.
- ☐ 2. For new construction and rehabilitated landscape projects installed after January 1, 2010: the project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency 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.

☐ **5. IRRIGATION EFFICIENCY:**

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.

☐ **6. STORMWATER MANAGEMENT:**

- ☐ 1. Stormwater management practices minimize runoff and increase infiltration, increasing groundwater

recharge and improving water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site retention and infiltration are encouraged.

- ☐ 2. Project applicants shall refer to Municipal Code Section ____ for information on applicable stormwater ordinances and stormwater management plans.
- ☐ 3. Rain gardens, cisterns, and other landscapes features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.